Benefits of Control, Capital Structure and Company Growth

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First Draft: February 15, 2002

This Version: September 19, 2002

Abstract

This paper studies the influence of benefits of control on capital structure and growth of private companies. It is argued that companies in which existing owners would lose more control if they expanded, use more debt and grow more slowly. The dataset covers 5601 private UK companies with limited liability for up to 5 years. Loss of control is measured as the difference in the probability of winning a vote for the largest owner before and after a hypothetical equity increase. Consistent with benefits of control, we find that companies with high potential loss of control do indeed use more debt, issue less new equity and grow more slowly.

JEL classification: G32, G34

Keywords: benefits of control, capital structure, company growth, small and medium–sized enterprises, entrepreneurship

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Acknowledgements: I would like to thank Ron Anderson, Christian Laux and Steve Nickell for helpful discussions. All remaining errors are my own.

1 Introduction

In many industrialised countries governments are concerned that small companies find it difficult to obtain enough finance to realise their growth potential. In the UK, for example, there is evidence for an equity gap, i.e. companies who want to raise moderate amounts of equity, between £100,000 and £500,000, face difficulties. Governments therefore try to improve the availability of private equity and venture capital. If the companies can grow, they will generate more employment and will improve aggregate growth of the economy as well. The UK government, for example, has started the "Enterprise Investment Scheme" (EIS) in order to help small companies raising equity capital. This scheme gives various tax advantages for individuals investing in a company with which they were previously unconnected (Bank of England, 2001).

However, many entrepreneurs are reluctant to make use of private equity or venture capital because they don't want to lose control over their company. In a survey of private companies in the UK, Poutziouris et al (1998) found that 50% of the owners do not consider issuing external equity. They indicated that maintaining control / keeping the company in the family is one of their main business goals. This attitude was also found by a survey of Swedish small and medium–sized companies (SMEs). Many owners indicated that they would rather sell the whole company than take on new owners (Cressy and Olofsson, 1997). At the moment it seems that the availability of finance is not one of the main problems of companies in the UK. The NatWest/SBRT Quarterly Survey of Small Business in Britain (2001) found that low turnover, regulation and paperwork, and lack of skilled employees are the most important problems facing small firms whereas access to finance was only mentioned by 2% of the companies. This shows that it is necessary to differentiate between supply side constraints of finance, which relate to market inefficiencies, and demand side constraints of finance, which relate to the behaviour of companies and their owners.

Entrepreneurs want to stay in control because they get benefits over and above the financial return on their investment. The benefits can be pecuniary or non–pecuniary and may, for example, consist of a nice company car, independence from a superior and prestige. If entrepreneurs want to stay in control they need to forego some growth opportunities if the opportunities are too extensive to be realised with debt finance alone. Such big opportunities could, for example, be the development of an entirely new product or the development of

export markets for existing products. There is also the possibility to issue non–voting equity and thus to keep control but this can be done only to a certain degree and it may be difficult to find a buyer for non–voting stock.

The objective of this paper is to analyse the effects of benefits of control on the capital structure as well as on the growth of companies. Although the importance of control considerations for entrepreneurs is known, there is, to the best of our knowledge, no analysis that tries to evaluate the consequences. This article fills this gap by investigating the following hypotheses. The first hypothesis is that benefits of control are positively related to the leverage of companies because increases in equity capital have additional costs – the cost of losing control. Therefore it is to be expected that companies where existing owners would lose more control in an expansion will rely more extensively on bank financing and will therefore have higher leverage than otherwise comparable companies. The second hypothesis suggests a negative relationship between benefits of control and the use of increases in equity capital. The third hypothesis is that there is negative relationship between benefits of control and company growth since existing owners would rather forego profitable growth opportunities than cede control.

To study the effect of value of control on capital structure and growth of companies, a panel of private UK companies with limited liability is used. The unbalanced panel comprises 5601 companies and covers the years 1997 to 2001. Private companies are used because ownership is typically concentrated. There are also public companies with concentrated ownership but because private and public companies could be of different nature, this study concentrates on private companies. Insofar as public companies have dispersed ownership no loss of control would occur due to an equity expansion since all owners have a negligible influence to start with.

To identify the effect of loss of control on company characteristics it is important to solve severe econometric problems. For the econometrician it is not possible to observe whether companies have growth opportunities but don't use them because the owners want to stay in control. It is only possible to work with proxies for growth opportunities but the proxies themselves are typically influenced by decisions taken by the owners or managers. For example, expenditures for R&D are often used as a measure of growth opportunities. However, an owner who wants to stay in control would not do R&D in the first place even if

possibilities to expand existed. Furthermore, it is also not possible to look at the relationship between loss of control due to actual ownership changes and the dependent variable of interest directly because actual ownership changes are inherently endogenous. For example, an owner would only give up control if he had profitable growth opportunities. It would therefore not be surprising to find that companies in which the largest owner lost control are growing faster.

One way to solve the above mentioned problems is to work with hypothetical equity increases that are the same for all companies. The loss of control resulting from the hypothetical equity increase needs to be quantified and can be related to company characteristics of interest. Section 3 of this paper gives a detailed description of how to calculate loss of control for hypothetical equity increases.

The empirical results confirm the expected effect of loss of control on capital structure and company growth. Companies in which the largest owner would lose more influence in an equity increase use more debt financing, make less use of equity increases, and exhibit slower growth than otherwise comparable companies.

The remainder of the paper is organised as follows. Section 2 gives an overview on the related literature. Section 3 covers measurement issues. Section 4 highlights important institutional details of private companies in the UK. Section 5 explains the dataset. Section 6 presents the empirical analysis. Section 7 concludes, and section 8 tries to draw some policy implications.

2 Related Literature

2.1 Theoretical Background

This paper looks at the effect of private benefits on the capital structure and on growth of companies. One of the main questions of the field of corporate finance has been the determinants of capital structure. Modigliani and Miller (1958) derived conditions under which the capital structure is irrelevant. Later contributions modelled situations under which capital structure is relevant. Two examples of this literature are the underinvestment problem identified by Myers (1977) and the pecking order theory developed by Myers and Majluf (1984). In the interpretation of the regression results we will come back to these

papers. This paper makes a contribution to this literature by exploring empirically factors that make the capital structure relevant with a special emphasis on private benefits.

What are private benefits of control? Although the theoretical literature has analysed the effects of private benefits of control, there is rarely a specific analysis of the sources of the benefits. In general, benefits can be divided in two categories: pecuniary and non–pecuniary. The pecuniary benefits can be a managerial salary that is higher than the market rate or perks that can be taken, for example, an expensive company car. The non–pecuniary benefits can be even more important than the pecuniary ones. They include the prestige and social status that comes with ownership as well as the power to decide on the business strategy of the company and the independence from superiors. Non–pecuniary benefits are especially strong if the owner is the founder of the firm or if the firm has been controlled by the owner's family for a long time because then the relationship between owner and company is closer.

There are two main ways in which private benefits are modelled. One strand of the theoretical literature assumes that private benefits reduce company resources and are costly to extract, i.e. that for each pound of private benefits enjoyed firm value decreases by more than one pound. This fits well for private benefits that are mainly pecuniary (e.g., Burkart et al., 1998; Bennedsen and Wolfenzon, 2000). A second strand models private benefits as existent *in addition to* monetary benefits. Their enjoyment is not using up company resources (e.g., Aghion and Bolton, 1992 ; Zwiebel, 1995). This approach is capturing more the non–pecuniary elements of private benefits since they do not require a costly diversion strategy. For private companies the non–pecuniary benefits seem to be more important since all owners typically have a considerable stake and are therefore informed about the situation of the company. No owner would allow other owners to divert substantial resources for private benefit.

There are some theoretical models that incorporate benefits of control. The model by Anderson and Nyborg (2001) is probably most closely related to the empirical analysis of this paper. It sheds light on how the choice of financing and growth of a company are related. The companies are characterised by a contracting inefficiency that allows insiders to divert cash flow for their private benefit, i.e. the model assumes pecuniary benefits of control. In the first stage an entrepreneur can do R&D and start a company. In the second stage the company can either be financed with outside equity or with debt. If debt financing is

chosen, the entrepreneur can remain in the position even if an outside manager could do the job better. If equity is chosen, the entrepreneur risks being replaced by a more able outside manager. It can be seen that equity promotes higher second stage growth than debt but this advantage must be traded off to the disadvantage of reduced incentives to do R&D in the first stage.

Cressy (1995) focuses on loss of control due to bank loans. Loss of control due to equity is not considered in this model. It is assumed that the larger the bank loan is, the larger is loss of control. Then, since the utility of entrepreneurs depends negatively on the size of bank loans companies will borrow less than is optimal. For some of the entrepreneurs the loss aversion diminishes over time. They start to borrow more and their companies grow.

There are also models that analyse ownership structures after an original owner sells shares to obtain finance. Bebchuck (1999) looks at the choice between a concentrated and a dispersed ownership structure in the context of an IPO when private benefits of control are existent but not necessarily costly to extract. He finds that larger private benefits tend to favour concentrated ownership. By either keeping a controlling stake or by selling a controlling stake to one new owner, the original owner can enjoy the private benefits. Bennedsen and Wolfenzon (2000) derive efficient ownership structures for the case where private benefits are costly to extract. They find that for every possible constellation there is a one-share–one-vote ownership structure that maximises efficiency. This is due to the alignment effect, from which follows that firm value increases in the cash flow stake of the controlling coalition. They also derive a coalition formation effect which says that the coalition with the smallest cash flow stake wins because it has the largest group of shareholders from whom to expropriate.

The optimality of one–share-one–vote was studied earlier by Grossman and Hart (1988) and Harris and Raviv (1988) in the context of public firms faced by take–over threats. This point is important for firms that consider the issuance of non–voting equity. Although this mode of financing avoids costs related to loss of control, there are potential distortions to be faced. Furthermore, it may be difficult to find investors that accept the risk of losing their money without having influence on the strategy of the company, which can increase the cost of this type of financing.

To sum up, there are theoretical models that derive implications of private benefits of

control on company characteristics but there is no model that brings out the hypotheses concerning the effect of benefits of control on capital structure and company growth that are tested empirically in this paper.

2.2 Previous Empirical Evidence

So far there is no direct evidence on the size of benefits of control for private companies. For public companies the importance of benefits of control can be inferred from the price differential in take–over contests between voting shares and non–voting shares. It is also possible to look at the price premium that occurs when equity blocks are traded. The value of benefits of control can be approximated by the difference between the price of a share in the block and the price of a share on the stock exchange. Barclay and Holderness (1989), for example, find that equity blocks of at least 5% of common stock trade at an average premium of 20% for a sample of 63 US block trades between 1978 and 1982. This shows that there are benefits of control that only accrue to holders of large blocks.[1]

Indirect evidence for benefits of control for private companies has been provided by Moskowitz and Vissing-Jørgensen (forthcoming). They find for the USA that equity holdings in private companies yield about the same return as equity holdings in public companies. However, the volatility of an index on private firms is if anything higher than the volatility of an index on public firms. Given that households are typically not well diversified in private equity, it is difficult to explain why households hold private equity at all if only the financial return is considered. The authors suggest that non–pecuniary benefits of control might be one explanation.

Since this paper analyses the effect of private benefits on capital structure, equity growth and company growth, we want to review some empirical papers that looked at the same issues but chose a different emphasis. Michaelas et al (1999) analyse the determinants of capital structure for SMEs in the UK using panel data. They consider taxes, agency costs and costs due to asymmetric information. There is no evidence that tax considerations are important. However, consistent with the pecking order theory they find that past growth and growth opportunities have a positive effect on leverage while profitability and age have a negative effect. The ratio of fixed to total assets, used as a proxy for collateral, has a

[1]For a more recent analysis of private benefits of control see Dyck and Zingales (2001).

positive influence but contrary to theoretical expectations they find a positive effect of risk.

There do not seem to be analyses dedicated to changes in equity at private companies but there are analyses of the decision to go public. Pagano et al (1998), for example, find that company size and the industry's market–to–book ratio increase the likelihood of an IPO. The proceeds of an IPO are mostly used to reduce leverage and not to finance future growth. A further finding is that initial owners divest only a small part of their original holding.

For public companies there are studies that investigate the relationship between capital structure and growth. Opler and Titman (1994) find that in industry downturns companies that are more highly leveraged lose a higher market share. They interpret this finding as evidence for costs of financial distress. However, for large, highly levered firms in non–distressed industries they find a positive relationship between leverage and sales growth. Lang et al (1996) find generally a negative relationship between leverage and growth. After they split the sample into companies with high and low growth opportunities according to Tobin's q, they find that only low q companies have a significant negative relationship between leverage and growth and thus that leverage is not detrimental for companies with good growth opportunities. From this work it can be concluded that the effect of leverage on growth depends on specific company characteristics.

3 Methodology – Measurement of Loss of Control

It is crucial for the analysis to find a measure that describes how much influence the existing owners would lose in an expansion. As a measure of influence the probability of winning a vote on a yes–no decision with simple majority requirement is taken. The chosen measure is the difference between the probability that the largest owner will win a vote given the current ownership structure and the probability that the largest owner will win a vote in a new ownership situation after a hypothetical equity increase. The difference between the two probabilities is termed 'loss of control'. For the calculation of the measure it is assumed that all owners vote independently of each other with equal probability for or against the largest owner. It is now possible to calculate the probability that the largest owner will win by considering all possible voting patterns. Cubbin and Leech (1983) worked with this

probabilistic voting model to identify the influence of shareholders in UK public companies. They developed a formula to calculate approximate probabilities in cases of many owners. For this analysis it is possible to calculate the exact probabilities without using an approximation because the number of owners is smaller in private companies.

Several cases of hypothetical ownership changes are considered because there is not a single case that could be preferred on theoretical or practical grounds. This is done to ensure robustness of the results. First, it is assumed that an additional owner contributes to an equity increase of 10%, 20% or 40%. Second, it is assumed that all but the largest owner increase their stake by 10%, 20% or 40%. Here the idea is that the largest owner is more likely than the others wealth constrained because the largest owner has already a considerable investment in the company. Overall this gives six measures of loss of control.

A short example should help to clarify the measure. Consider a company with three owners of which the largest owner holds 40% of the equity, the second largest 35%, and the smallest 25%. In a vote the largest owner would always vote 'yes' and the other two owners would vote independently of each other. There are four cases to consider: First, all three owners vote 'yes' and the largest owner wins the vote. Second and third, only one of the smaller owners votes 'yes' but the largest owner nevertheless wins the vote. Fourth, both smaller owners vote 'no' and the largest owner loses the vote. It follows that the largest owner has a probability of 75% of winning a vote. The probability of winning can be calculated in the same fashion after a hypothetical change in ownership.

It is important to recognise that independent voting is part of the definition of the extent of control, not an assumption about how the world works. An advantage of this measure is that it takes the whole distribution of ownership into account, i.e. it has different values depending on whether the remaining shares are dispersed or concentrated. It can best be viewed as a measure of a priori voting power that abstracts from particular personalities and ignores affinities or disaffinities between voters.

This probabilistic voting model is not appropriate for situations in which the largest owner tries to expropriate the smaller shareholders because then a coalition against the largest shareholder would form and the assumption of independent voting would not be appropriate. But, as argued above, non–pecuniary benefits of control are probably more important than pecuniary benefits and therefore there are no specific reasons to expect

opposition against the largest shareholder. Because family ownership is prevalent for private companies it is worth trying to incorporate family structures into the voting behaviour, i.e. to depart from the assumption of independent voting for family members. It could be that family members tend to have the same opinion on company matters and therefore vote most of the times together. But it could also be that family quarrels lead to family members expressing opposing views. In order to model family voting behaviour it is assumed that all owners with identical last name belong to one family and that members of one family vote as one person, i.e. all members of a family vote either yes or no. This is one of several possibilities to model family voting behaviour and one must keep in mind that the allocation of owners into families only according to information on the last name is not always accurate but the dataset does not provide more relevant information. This is adding six more measures of loss of control.

Here we work with a measure of loss of control derived from hypothetical ownership changes in order to avoid the problem of endogeneity that is encountered when looking at actual ownership changes. One could try to measure the loss of control afflicting the largest owner after an actual increase of equity. This could be related to company growth after the change. To the extend that companies with ownership changes grow faster than other companies with the same characteristics in the same industry one would have a measure of the required reward for relinquishing control. However, since only companies with good growth opportunities would consider issuing new equity it would not be surprising to find higher growth for these companies. Of course one could try to find instruments for the actual loss of control. It would be, however, extremely difficult to find a variable that is related to the decision of owners to give up control but not to resulting company characteristics like capital structure or growth.

4 Institutional Details

4.1 Ownership

In order to determine the probability that the largest owner will win a vote it is necessary to know the percentage of votes held by each owner. This task is complicated by the fact that private limited companies can have several share classes and voting rights can vary according

to share class. However, many companies have only one class and in general, the smaller a company is, the fewer share classes it has.

For the calculation of voting rights the most important distinction is between ordinary and preference shares. Ordinary shares confer voting rights and the right to obtain a dividend should one be declared. Preference shares, on the contrary, have usually no voting rights attached. The owners are not directly involved in decisions concerning the company's affairs. To make up for this disadvantage, preference shares have the right to a fixed dividend. Owners of ordinary shares obtain only a dividend if the amount was sufficient to satisfy the claims of owners of preference shares. Preference shares are typically cumulative. This means that skipped dividends of previous years must be made up as soon as dividend payments are resumed. For example, an owner of a 7% preference share would have a right to a payment of 14% of the nominal value of her shares should dividends have been skipped once. Preference shares often become voting shares should no dividend be paid over a specified number of years.

The dataset allows to differentiate between ordinary and preference shares. For this analysis ordinary shares are treated as voting shares and preference shares are treated as non–voting shares. In rare cases the voting rights could be arranged differently.

4.2 Decision Making

Owners of private companies come together in annual general or extraordinary meetings to decide on company matters. Normally decisions are passed with a simple majority. However, there are a few decisions that require a 75% majority or unanimity. These decisions are listed by the Companies Act. In the Articles of Association the owners can also agree to have stricter majority requirements for some decisions than required by the Companies Act.

Most decisions are taken by ordinary resolution, which requires a 50% majority. They are used, for example, to increase the share capital or to give authority to the directors to allot shares. Ordinary resolutions are used for all matters unless the Articles of Association or the law require another type of resolution. Extraordinary resolutions require a majority of 75%. They are necessary for modifying the rights of classes of shareholders or for winding–up. Special resolutions also require a 75% majority. They are used for important matters such as alterations to the Memorandum or to the Articles of Association as well as for reductions

of capital. There are also elective resolutions that must be passed by unanimous agreement. They are used to amend the duration of the authority of directors to allot securities or to dispense with the holding of annual general meetings.

Since ordinary resolutions are the most common type, this analysis will concentrate on them and use a 50% majority requirement to determine the probability of winning for the largest owner. Furthermore, for a 75% majority requirement a different measure of control would be necessary. It is not sufficient to take into account that 75% of the votes are required to change the status quo. One also needs to consider that to preserve the status quo, only one vote above 25% is required. In this sense the 75% majority requirement is asymmetric.

5 Data

5.1 Dataset

The database FAME (Financial Analysis Made Easy), distributed by Bureau van Dijk, is used as basis for the analysis. It includes all companies in the UK that satisfy *at least one* of the following three criteria: turnover higher than £750,000, pre-tax profit higher than £45,000, and shareholder funds higher than £750,000. More than 130,000 companies are covered over all, including more than 12,000 private companies.

The detail of the information available in FAME depends on the publication requirements. Only publicly available information can be included in the database. In the UK all companies with limited liability are required to deposit their accounts with Companies House so that their trading partners and the general public can inquire about their situation. Small and medium–sized companies enjoy reduced publication requirements. To qualify as small or medium–sized, at least two of the three conditions shown in table 1 must be met.

Small companies must only deliver an abbreviated balance sheet, notes and a special auditor's report. Medium–sized companies must report an abbreviated profit and loss account, a full balance sheet, a special auditor's report, a directors' report, and notes to the accounts.

The database provides information on financial data from balance sheets and profit and loss accounts for the years 1989 to 2001. Detailed information on owners and directors is also provided but only from the year 1997 onwards. Therefore the time period covered by the analysis is restricted to 1997 to 2001. Since the database contains only the current

Table 1: Size Criteria for Small and Medium–Sized Companies

Criteria	Small Company	Medium–sized Company
Turnover	$<$ £2,800,000	$<$ £11,200,000
Balance sheet total	$<$ £1,400,000	$<$ £5,600,000
Number of employees	< 50	< 250

Source: Companies Act 1985

ownership structure and current directors, it was necessary to extract information from older versions of the database to construct time–series for the variables relating to this information. Furthermore, companies that go out of business are deleted from the database. Here older versions were used as well to incorporate those companies into the sample. The sample is therefor not conditional upon company survival.

The dataset used for the analysis includes only independent companies because a company that is 100% owned by another company has no direct owner who would care about control. Also, independent companies whose largest owner is a company or neither a company nor an individual (e.g. a trust or a fund) are excluded because these types of owners will not have an interest in control comparable to individuals. Companies from the financial sector, i.e. in financial intermediation and insurance, are excluded because their capital structure will differ systematically from the rest of the companies.

It should be noted that merger and acquisition (M&A) activity is not important for the results. With the use of the database Zephyr, distributed as well by Bureau van Dijk, the companies engaging in M&A have been identified. The results are not affected when those companies are excluded from the analysis.

Finally, all reported results in this paper relate to the trimmed sample. The 1st and the 100th percentile of financial ratios and growth rates have been deleted because there seemed to exist a few severe outliers due to data problems. The regressions show almost the same results for trimmed and untrimmed sample.

5.2 Definition of Variables

This subsection gives some accounting definitions and an overview of the variables used in the analysis.

The liability side of the balance sheet of private companies with limited liability consists of three main sections: shareholders funds, long-term liabilities and current liabilities. Shareholders funds represents the sum of the assets that belong to the shareholders or owners. It can be divided into issued capital which corresponds to the nominal value of the shares and total reserves. Total reserves are comprised of the share premium account which contains any premium that was paid in excess of the nominal value of the shares at the issuance date, profit and loss account which contains the accumulation of retained profits, revaluation reserves, and other reserves.

Equity or **equity financing** denotes the sum of issued capital and share premium account.

Internal financing is the sum of retained profits, revaluation reserves and other reserves.

Debt financing is the sum of current and long–term liabilities.

Leverage is defined as the ratio of the sum of current and long–term liabilities to total assets.

Loss of control denotes the loss of control incurred by the largest owner due to a hypothetical equity increase. Two cases are considered: In **loss of control, 10a** an additional owner enters the company and contributes to an equity increase of 10%. In **loss of control, 10i** the largest owner keeps her equity investment constant but all other owners increase their contribution towards equity by 10%. The notation is analogous for 20% and 40% increases.

Share largest owner gives the ownership share of the largest owner of the company measured between 0 and 1.

Capital expenditure ratio is the ratio of capital expenditure and other investments to total assets.

Preference ratio is defined as the ratio of preference equity capital to total equity capital.

ROA stands for return on assets and is a measure of profitability. It is calculated as the ratio of profit before taxes to total assets.

Size, the natural logarithm of the number of employees, and **age**, the natural logarithm of years, are included as further controls.

Industry dummies are defined on the one digit level of the UK SIC code. Time dummies

controlling for the year of the observation are included as well.

6 Empirical Analysis

6.1 Stylised Facts

This subsection is intended to provide a short overview on the main characteristics of the companies, their growth and financing patterns. It also gives descriptive statistics for the loss of control measure.

The following table 2 gives an indication of the importance of small and medium–sized enterprises for the UK economy for the year 2000. Small and medium–sized enterprises (here defined to have fewer than 250 employees) are responsible for approximately 50% of employment and turnover. This shows that this size group is of considerable importance.

Table 2: Relative Importance of Different Size Classes for the Year 2000

	Micro (0-9 empl.)	Small (10-49 empl.)	Medium (50-249 empl.)	Large (250+ empl.)
Number of Businesses (in %)	95.0	4.1	0.7	0.2
Employment (in %)	30.2	13.4	11.5	44.9
Turnover (in %)	22.9	14.4	13.9	48.9

Source: Small Business Service (2000)
Note: Some figures do not equal 100 due to rounding.

It would be very interesting to know the relative share of private companies with limited liability on employment and turnover as well. Unfortunately, this information is neither available from the Office for National Statistics nor from other resources.

Table A1 in the appendix gives full descriptive statistics of the companies that are included in the sample. The companies are relatively small, the median number of employees is 88 whereas the mean is 201. On average their turnover amounts to £21 million. It is interesting to note that shareholder funds, on average £5.5 million, is more than 7 times higher than equity. This points to the importance that retained earnings have for the companies. They are by far the biggest subsection of shareholder funds.

Graph A1 in the appendix displays the relationship between the average share of the largest owner and the age of the company. In fact, the share is first increasing and then decreasing. The increase in the beginning can be caused by some owners buying out others while the company is still relatively young and maybe in some difficulties. For companies above 30 years the share of the largest owner decreases, presumably due to expansions and ownership splits after the death of previous owners.

The development of leverage as the companies get older gives insight into the dynamics of the capital structure. This information is presented in graph A2 in the appendix. Companies in the lowest age category from one to nine years have the highest leverage of about 70%. This number decreases continually as the companies get older. For companies above the age of 80 leverage stabilises at around 45%. This points to the importance of internal finance in the growth process of companies. As companies get older the can rely more heavily on retained profits as source of financing and consequently leverage decreases. This observation is consistent with the pecking order theory.

Table 3 gives an overview on the raw correlations of growth in total assets with the financing choices of companies. It shows that growth in all types of financing is significantly positively correlated with growth in total assets.

Table 3: Financing Choices – Raw Correlations

Growth rate, type of financing:	Internal	External, Equity	External, Debt
Growth total assets	0.25***	0.07***	0.77***

Note: Number of observations is 11,802. ***,**,*=significant on the 1, 5 and 10 per cent level.

In order to judge the implications of a possible negative effect of loss of control on equity increases it is necessary to know if fast growing companies use equity more extensively as a means of finance than slow growing companies. Table 4 gives mean and median growth rates for total assets and financing choices. It shows that in the years of 1996 to 2001 all three types of financing were used by companies. It is interesting to note that the median growth rate of equity financing is zero. Changes in equity are quite rare. From the data it has been calculated but it is not shown in the table that only 15% of the observations show a change in equity. Companies that grow faster than the median company also increase their equity

more but the median equity increase is still zero. This shows that faster growing companies make more use of equity financing.

Table 4: Mean and Median of Annual Growth Rates (in %)

	Mean growth	Mean growth	Median growth	Median growth
Included companies	all	fast growing	all	fast growing
Total assets	6.42	19.59	4.07	13.93
Internal financing	9.11	16.74	6.62	11.39
Equity financing	1.45	2.00	0.00	0.00
Debt financing	6.93	24.51	2.08	16.36

Note: Number of observations is 6,584-6,891. Fast growing companies grow at least as fast as the median company with respect to total assets.

In contrast to public companies, private companies are generally characterised by a limited number of owners and by a higher prevalence of family ownership. The average company in the sample has 2.8 owners and companies with more than ten owners are exceptional. The full distribution of the number of owners is given in graph A3 in the appendix.

The information given by FAME does not allow to determine if owners belong to the same family. However, since the full name of owners is given, it is at least possible to get some indication of family ownership. We define a company to be in family ownership, if two or more owners have the same last name. According to this measure around 40% of companies in our sample are in family ownership.

Managers have typically a high share of the ownership in private companies. In the sample they hold on average 64% of the voting equity. They are also often the largest and therefore the most influential owner. In our sample 70% of the largest owners are at the same time managers of the company. This is an important fact to keep in mind when considering the policy implications of this analysis. Owners of private companies bear idiosyncratic risk but their ownership also provides good incentives in case they are also managers. In a welfare analysis the negative effect that fear of loss of control can have an company growth needs to be traded off to the positive effect of better incentives that large shares of ownership bring.

It is possible to calculate the actual loss of control that occurred after an increase in equity. The average loss of control of the 372 observations of equity increases in the sample

was 1.7%. On average the equity has been increased by 43.8%. The median, however, points to a much smaller increase of only 8.1%. Compared to this the loss of control in the hypothetical ownership changes is higher. If all but the largest owner increase their stake by 10% (40%) then the largest owner suffers on average a loss of control of 6.5% (11.1%). This comparison gives an indication that the largest owner tries to avoid a loss of control due to equity increases.

The different loss of control measures from hypothetical ownership changes are highly correlated with each other. Table A2 and A3 in the appendix present the correlation coefficients. For ordinary and family voting behaviour the highest correlations are 0.94 and 0.95 respectively whereas the lowest correlations are 0.32 and 0.37. The average correlation between loss of control with family and ordinary voting behaviour is 0.44, which is also quite high.

In many instances of the hypothetical ownership change the largest owner did not lose any control. For an equity increase of 10% due to an additional owner (loss of control, 10a) the largest owner will not lose any control in 51% of cases. If all but the largest owner increase their stake by 20% (loss of control, 20i), then the largest owner will not lose any control in 68% of cases.

6.2 Estimation Method

The data is available for the time period 1997–2001 but on average a company is observed for less than three years. Over time more companies have been covered in the ownership section of the database and some companies went into or out of business during the sample period. This means that information on the time–series dimension of the panel is very limited. Random effects models, which exploit the cross–section and time–series dimension of the data, have been tried but they have been rejected by the Hausman test. This would leave fixed effects models but they are not well suited for this dataset because they only exploit the time–series dimension of the data. Therefore panel techniques have been abandoned and a pooled time–series cross–section analysis has been chosen for the first two regression models with leverage and equity growth as dependent variables. The standard errors are corrected to allow for heteroscedasticity and auto–correlation of the observations pertaining to one company. Since there is persistence in the characteristics of companies it is likely

that the error terms from observations relating to one company are correlated. For the third regression model with company growth as dependent variable a simple cross–section analysis is used since an averaged growth rate is used, which is only available for one time period.

6.3 Regression Results

In the following subsections three main relationships are analysed. The first concerns the influence of loss of control on the leverage of a company, the second analyses the influence of loss of control on equity increases, and the third analyses the influence of loss of control on the growth of a company.

For brevity, only regression results for two measures of loss of control are shown. They relate to the loss of control due to an additional owner contributing to a 10% increase of the original equity (loss of control, 10a) and to the loss of control due to a 20% equity increase through an increase in the stake of all but the largest owner (loss of control, 20i). The first two regressions of each table relate to loss of control measures that were derived under the assumption that everyone is voting independently (independent voting) and the last two regressions relate to loss of control measures that were derived under the assumption that members of one family vote as if they were one person (family voting). The evidence from the other hypothetical ownership changes is very similar.

6.3.1 Effect on Leverage

Table 5 shows the determinants of leverage for private companies in the UK. The determinants are quite precisely measured. All regressors are significant to the 1% level in the four regressions. The results are so similar for all four measures of loss of control that they can be interpreted together.

As expected, loss of control has a positive influence on leverage. It is possible that owners who want to stay in control prefer to use debt more extensively than owners who are not confronted with a loss of control. In order to stay in control they may accept to pay higher interest rates in order to obtain further loans. The economic significance of this effect is not negligible. For the first regression in the table it can be calculated that for loss of control 20 percentage points higher, leverage increases *ceteris paribus* by 1 percentage point. This effect is a bit larger when family voting is taken into consideration.

Table 5: Determinants of Leverage

Dep. Variable: Leverage (in %)				
	Independent voting		Family voting	
	(I)	(II)	(I)	(II)
Loss of control	5.25***	5.85***	7.25***	6.41***
	(2.02)	(1.98)	(2.37)	(2.36)
Share largest owner	6.68***	6.75***	6.45***	6.31***
	(1.16)	(1.15)	(1.13)	(1.12)
Capital expenditure ratio	0.107***	0.107***	0.109***	0.108***
	(0.036)	(0.036)	(0.036)	(0.036)
Preference ratio	8.24***	8.39***	8.12***	8.17***
	(1.29)	(1.29)	(1.29)	(1.29)
First lag ROA	-77.43***	-77.45***	-77.35***	-77.42***
	(3.66)	(3.66)	(3.65)	(3.66)
Size	3.20***	3.20***	3.18***	3.19***
	(0.26)	(0.26)	(0.26)	(0.26)
Age	-8.35***	-8.36***	-8.30***	-8.31***
	(0.34)	(0.34)	(0.34)	(0.34)
Industry and year dummies	yes	yes	yes	yes
Interaction of industry and year	yes	yes	yes	yes
Number of observations	9,574	9,574	9,574	9,574
Number of companies	4,850	4,850	4,850	4,850
R squared	0.24	0.24	0.24	0.24

Note: ***,**,*=significant on the 1, 5 and 10 per cent level, robust standard errors allowing for heteroscedasticity and autocorrelation are in parentheses.
Loss of Control in regressions (I) refers to the case where all owners but the largest increase their share by 20% (loss of control, 20i), loss of control in regressions (II) refers to an additional owner increasing equity by 10% (loss of control, 10a).

The share of the largest owner has a positive influence as well. This share can be used as a signal for company quality. The owner is only willing to invest a high share of her wealth, if she is convinced of the quality of the company. Banks understand this signal and may give more loans to companies that have at least one large owner. This argument relates to the

work of Leland and Pyle (1977) who made a related argument about the ownership share of managers.

In regressions explaining leverage it is common to control for growth opportunities. The ratio of capital expenditure to total assets (capital expenditure ratio) is used here for this purpose. Companies with good growth opportunities will in general invest more in machinery and equipment than other companies. To find a good measure of growth opportunities for private companies can be difficult. For public companies the market to book value is commonly used but it is not available for private companies since there is no observable market value. R&D expenditure is a further frequent choice but it is not available in the dataset used for this analysis. The lead of turnover growth has been used as well but this variable has the problem of being potentially endogenous with respect to leverage. It was felt that the capital expenditure ratio would be the best choice here. The coefficient of this variable shows that companies with more growth opportunities, i.e. a higher ratio, use higher leverage. This is in line with the pecking order theory (Myers and Majluf, 1984). For companies with plenty of growth opportunities internal finance is not sufficient. These companies will use additional debt to finance their growth. The result is not in line with the theory on underinvestment described by Myers (1977) which concludes that companies with many growth opportunities should use less leverage.

The regression controls also for preference ratio, the ratio of preference equity capital to total equity capital. The use of preference capital can give an indication on the control aversion of owners since it allows to raise equity without losing control. However, it is probably an expensive form of financing since the shareholders need to be compensated by higher dividends for their lack of influence on company strategy. From the regression it can be seen that companies who use more preference capital use also more leverage.

The control for past profitability shows that profits are partly used to reduce leverage. This is consistent with an aversion to lose control with respect to banks. Companies reduce their bank borrowing if possible.

Size has a positive influence on leverage, possibly due to a more stable cash flow stream and therefore a higher debt capacity. Age has a negative effect on leverage because retained profits become more important over time, which reduces leverage. This was already shown

in graph A1 in the appendix.[2] [3]

6.3.2 Effect on Growth in Equity

The regressions in table 6 explain determinants of growth in equity. Here regression results are broadly similar as well, allowing a joint interpretation.

Loss of control is negatively related to growth in equity. Indeed, owners who would lose more influence in an increase of equity use this possibility less. However, this effect is not significant. In terms of economic significance it can be said for the first regression that an increase of 20 percentage points in loss of control leads to a decrease in growth of equity of about 0.34 percentage points.

One would expect that a high leverage has a positive influence on increases on equity because the increase will help to bring leverage down. This is born out by the data and the effect is significant to the 1% level.

The preference ratio is included as a further control for the capital structure of a company. Companies that use relatively more preference equity capital make less use of increases of total equity. This is consistent with the interpretation offered in the previous section that owners using preference capital are especially averse to losing control. It should be noted, however, that this variable is not significant in the regression.

The first lag of return to assets points to a persistence in the success of companies. Companies that were more profitable in the past are more likely to expand the business in the future. This effect is significant to the 5% level.

As further controls size and age of the companies have been included but they do not seem to be important. Size has an insignificant positive effect whereas age has an insignificant negative effect. Equity itself is included as a further control for a level or size effect. Its coefficient is positive but insignificant, indicating that companies with more equity also raise

[2]The effect of profitability, size and age seem to be constant over time. Michaelas et al (1999) found the same effects for a sample of UK companies for an earlier time period (1986 to 1995).

[3]Risk (coefficient of variation of cash flow) and asset structure (fixed assets/total assets) have also been included as explanatory variables. The coefficients do, however, not conform to theoretical expectations. More risk is related to higher leverage, a result that was previously found by Michaelas et al (1999). Relatively more fixed assets are related to lower leverage. One would expect that fixed assets can be used as collateral and would therefore lead to higher leverage. The regressors are left out in the shown specification but they did not change the results.

more additional equity.

Table 6: Determinants of Growth in Equity

Dep. Variable: Growth in Equity (in %)				
	Independent voting		Family voting	
	(I)	(II)	(I)	(II)
Loss of control	-1.73	-1.55	-1.70	-1.57
	(1.25)	(1.23)	(1.63)	(1.61)
Leverage	4.39***	4.39***	4.40***	4.39***
	(1.02)	(1.02)	(1.02)	(1.02)
Preference ratio	-1.29	-1.32	-1.25	-1.27
	(2.03)	(2.03)	(2.03)	(2.03)
First lag ROA	7.22**	7.22**	7.19**	7.20**
	(3.35)	(3.35)	(3.35)	(3.35)
Size	0.22	0.22	0.22	0.22
	(0.14)	(0.14)	(0.14)	(0.14)
Age	-0.29	-0.29	-0.30	-0.30
	(0.27)	(0.27)	(0.27)	(0.27)
Equity	0.12	0.12	0.12	0.12
	(0.074)	(0.074)	(0.074)	(0.074)
Industry and year dummies	yes	yes	yes	yes
Interaction of industry and year	yes	yes	yes	yes
Number of observations	11,803	11,803	11,803	11,803
Number of companies	5,601	5,601	5,601	5,601
R squared	0.01	0.01	0.01	0.01

Note: ***,**,*=significant on the 1, 5 and 10 per cent level, robust standard errors allowing for heteroscedasticity and autocorrelation are in parentheses.
Loss of Control in regressions (I) refers to the case where all owners but the largest increase their share by 20% (loss of control, 20i), loss of control in regressions (II) refers to an additional owner increasing equity by 10% (loss of control, 10a).

Overall, these regressions can explain only a small part of the variation in equity growth. This could be due to equity growth being mostly idiosyncratic and therefore difficult to

explain with accounting information. However, it is also possible that OLS is not the most appropriate econometric technique to use. In 88% of the observations the dependent variable is equal to zero. In a future version of the paper it is intended to estimate this equation with a two-way tobit model that explicitly takes the mass point at zero into account. It should be noted that a truncated tobit model that only includes equity increases shows that loss of control has a negative influence on equity increases that is significant to the 5% level for independent voting and significant to the 10% level for family voting. However, the truncated tobit has the disadvantage of using only a small part of the observations.

6.3.3 Effect on Company Growth

The following table 7 presents results on the relationship of loss of control and company growth. Here a three year average is used for the company growth rate. This is done because company growth rates are in general very volatile. The averaging will make it easier to identify variables that have an effect in the longer term. In the regression the average annual growth rate refers to the years 1996–2000 and the regressors refer to the year 1996.

It can be seen that companies whose owners would lose control in an expansion indeed grow more slowly. This is consistent with the hypothesis that owners who want to stay in control are willing to give up growth opportunities. It is interesting to note that this effect is higher in magnitude and more precisely measured for the loss of control measure that covers family members voting as one person. The economic significance for the first regression is as follows: A 20 percentage point increase in loss of control leads *ceteris paribus* to a 0.69 percentage point decrease in annual growth, which is quite substantial. The decrease of the annual growth rate is even higher for the case where family voting behaviour is modelled. Here the decrease amounts to 1.15 percentage points for the third regression.

Leverage has a significant positive effect on growth. This is a plausible result if companies finance their growth with debt. Faster growing companies need to make use of debt finance because internal finance will not be sufficient. This is consistent with the pecking order theory. The positive relationship is also consistent with the survey results of Poutziouris et al (1998). They find that growth oriented private companies in the UK have on average higher leverage.

Table 7: Loss of Control and Growth of Total Assets

Dep. Variable: Average Annual Growth of Total Assets, 1996–2000 (in %)				
	Independent voting		Family voting	
	(I)	(II)	(I)	(II)
Loss of control	-3.45**	-3.36**	-5.77***	-6.26***
	(1.55)	(1.57)	(2.00)	(2.03)
Leverage	4.52***	4.55***	4.63***	4.65***
	(1.42)	(1.42)	(1.42)	(1.42)
Preference ratio	-2.57	-2.63	-2.54	-2.63
	(2.03)	(2.03)	(2.02)	(2.02)
First lag ROA	28.99***	29.01***	28.87***	28.96***
	(4.71)	(4.71)	(4.70)	(4.70)
Size	0.11	0.10	0.11	0.11
	(0.24)	(0.24)	(0.24)	(0.24)
Age	-0.70**	-0.70**	-0.72**	-0.73**
	(0.35)	(0.35)	(0.35)	(0.35)
Industry dummies	yes	yes	yes	yes
Number of observations	2,023	2,023	2,023	2,023
Number of companies	2,023	2,023	2,023	2,023
R squared	0.07	0.07	0.07	0.07

Note: ***,**,*=significant on the 1, 5 and 10 per cent level, robust standard errors allowing for heteroscedasticity are in parentheses.
Loss of Control in regressions (I) refers to the case where all owners but the largest increase their share by 20% (loss of control, 20i), loss of control in regressions (II) refers to an additional owner increasing equity by 10% (loss of control, 10a). The regressors refer to the year 1996.

In this regression we controlled as well for the preference ratio. The variable has a negative but insignificant effect. This can mean that companies use preference equity capital as much as possible but once the capacity of using it is exhausted, grows slows down. The finding from these regressions are consistent with the findings in the previous two subsections. In general it can be concluded that preference capital is used by owners who are reluctant to give up control.

Controlling for past profitability shows that companies that were profitable in the past

are likely to grow more in the future. Again, a persistence of company success can be seen.

In addition, size and age of companies have been controlled for. The regressions show no relationship between the size of a company and its subsequent growth. The age of a company, however, has a significant negative effect.

7 Conclusion

This paper studies the influence of benefits of control on capital structure, issuance of new equity and growth of companies. It is argued that companies, in which existing owners would lose more influence in an expansion, use more debt, make less use of equity issuance and grow more slowly. There is strong evidence supporting the predicted effects on debt and company growth and weaker evidence supporting the predicted effects on equity issuance. The effect of loss of control on company growth is especially large. Overall, these findings are consistent with the view that there are demand side constraints on finance.

The weak evidence on the relationship between loss of control and equity increases could be due to the econometric technique used. In a future version of this paper it is envisaged to estimate this equation with a two-way tobit instead of with OLS to take account of the fact that the majority of companies have a zero growth rate for equity.

A more detailed analysis would be useful to improve the understanding of the policy implications. It would be interesting to know whether benefits of control differ according to industry or according to the age of the company. It is conceivable that benefits of control are related to the time a company is owned by a family. Benefits of control may also be stronger if the founder is still working for the company.

8 Policy Implications

The negative effect of loss of control on company growth has implications for the aggregate growth of economies. The fact that owners value control implies that their companies do not exploit all growth opportunities and therefore do not create as much employment and value added as they could. There is an effect on aggregate growth because some growth opportunities are idiosyncratic to a certain company. It can be the case, for example, that specific knowledge is required or that synergies with existing activities are necessary. Un-

der such circumstances it may not be possible for other companies to exploit the growth opportunities.

However, a welfare analysis of benefits of control is difficult because companies that are mainly owned by their managers also have advantages. They are less afflicted by agency problems due to the separation of ownership and control. If they grow and the share of non–managing owners gets bigger this conflict becomes more severe. Also, benefits of control can act as a counterbalance to the costs that arise because the investments in private companies are typically large and non–diversifiable (Moskowitz and Vissing-Jørgensen, forthcoming).

Although the government has little influence on benefits of control, especially on the non–pecuniary ones, it is still possible to draw some policy implications from the results of this paper.

First, expansion of equity depends on the total cost of equity of which loss of benefits of control are only one part. The other parts are required return on additional equity, costs of raising additional equity, and agency cost due to the separation of ownership and control. The smaller the total costs are, the more equity finance is raised. Guiso et al (2001) present empirical evidence that better development of financial markets leads to faster firm growth by exploiting the differences in financial development at a regional level in Italy. They also find that higher financial development leads to fewer firms that have only one owner because it is easier to raise external equity. It is fair to assume that benefits of control are equally distributed across the regions of Italy. So even if benefits of control generally hamper firm growth it is nevertheless the case that, for given benefits of control, firm growth can be improved by improving other important factors.

Second, the analysis of this paper gives evidence on demand constraints of finance. When observing companies that have growth opportunities but don't grow, one needs to be careful to consider both demand and supply side constraints and not immediately to conclude that the market for venture capital suffers from inefficiencies and requires government intervention.

Third, concerning the result that companies are more highly levered if owners would lose more influence in an equity expansion it would be interesting to see if it is possible to offer other financing instruments that would leave more control with the original owners. One possibility can be project finance for smaller companies such that control is only shared for

the project. However, problems of moral hazard due to asymmetric information will still exist.

Appendix – Tables and Graphs

Table A1: Descriptive Statistics

Variable	Mean	Std. Deviation	Max	Min
Number of Employees	201	702	1	30,874
Age (in years)	28	23	1	136
Turnover (in million £)	21.5	50.4	0.00030	1111.7
Total assets (in million £)	14.1	103.6	0.0023	10,356.0
Issued capital (in million £)	0.444	2.37	0	109.1
Equity financing (in million £)	0.702	3.090	0	112.7
Profit (Loss) account (in million £)	3.51	13.58	-424.6	700.0
Shareholder funds (in million £)	5.49	16.86	-304.5	700.0
Avg. annual growth of total assets (in %)	7.09	13.45	80.28	-26.84
Leverage	0.58	0.23	0.044	1.21
Preference ratio	0.040	0.160	0	0.977
Capital expenditure/total assets	0.990	6.06	-6.36	73.28
ROA	0.054	0.079	-0.243	0.423
Number of owners	2.75	2.08	1	18
Share largest owner	0.65	0.26	0.089	1.00
Number of managers	4.32	2.04	1	38
Managerial ownership share	0.64	0.38	0	1.00
Loss of control, 20i	0.081	0.14	0	0.63
Loss of control, 10a	0.080	0.14	-0.15	0.50

Note: Number of observations is 9,931-13,204.

Table A2: Correlation of Loss of Control Measure - Ordinary Voting

	LC 10a	LC 10i	LC 20a	LC 20i	LC 40a	LC 40i
Loss of Control, 10a	1.00					
Loss of Control, 10i	0.79	1.00				
Loss of Control, 20a	0.76	0.59	1.00			
Loss of Control, 20i	0.94	0.85	0.71	1.00		
Loss of Control, 40a	0.46	0.32	0.64	0.41	1.00	
Loss of Control, 40i	0.82	0.66	0.90	0.79	0.56	1.00

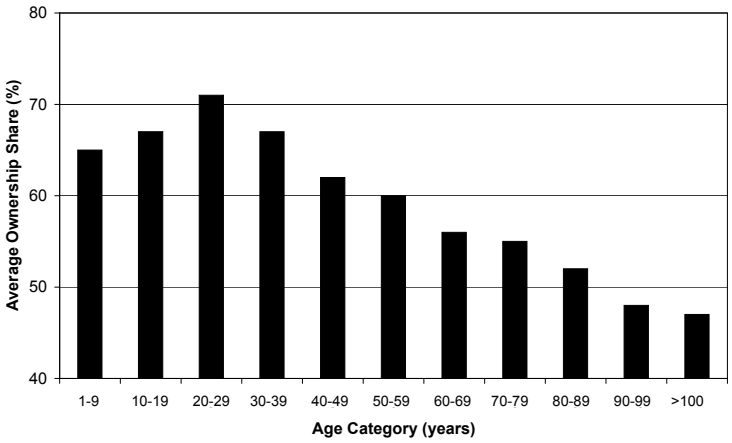
Note: Number of observations is 13,204. Loss of Control, xi refers to the case where all owners but the largest increase their share by x%. Loss of control ya refers to the case where an additional owner increases the equity capital by y%.

Table A3: Correlation of Loss of Control Measure - Family Voting

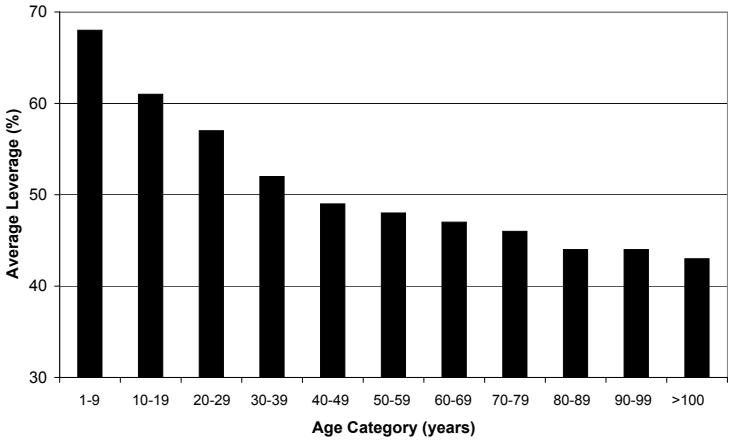
	LC 10a	LC 10i	LC 20a	LC 20i	LC 40a	LC 40i
Loss of Control, 10a	1.00					
Loss of Control, 10i	0.80	1.00				
Loss of Control, 20a	0.76	0.61	1.00			
Loss of Control, 20i	0.95	0.85	0.72	1.00		
Loss of Control, 40a	0.49	0.37	0.67	0.46	1.00	
Loss of Control, 40i	0.82	0.67	0.91	0.80	0.60	1.00

Note: Number of observations is 13,204. Loss of Control, xi refers to the case where all owners but the largest increase their share by x%. Loss of control ya refers to the case where an additional owner increases the equity capital by y%.

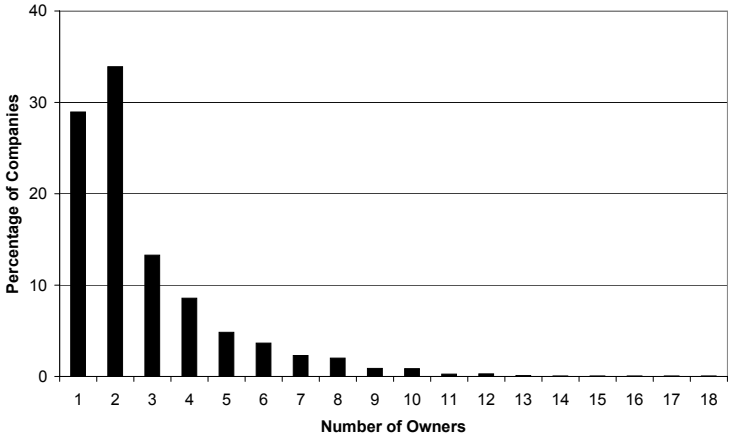
Graph A1: Average Share Largest Owner by Age of Company



Graph A2: Average Leverage by Age of Company



Graph A3: Distribution of Number of Owners



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