



*16th Annual Conference of Small Enterprise Association of Australia and New Zealand,
28 September – 1 October 2003*

How much does growth determine SMEs' capital structure?

*A paper for the Small Enterprise Association of Australia and New Zealand 16th Annual
Conference, Ballarat, 28 Sept-1 Oct, 2003.*

Patrick Hutchinson
New England Business School
University of New England
Armidale, NSW, 2350, Australia
Email: phutchin@metz.une.edu.au



1. Introduction

The purpose of this paper is to examine the extent to which growth determines the capital structure of small and medium-sized enterprises (SMEs). This is done by considering some theories of capital structure in relation to SMEs and then testing the resulting ideas empirically. This, in turn involves identifying the likely determinants of SME capital structure, in addition to growth, in order to assess the relative contribution of growth. Also, since it has been argued that the determinants of capital structure vary in certain circumstances, the relative contribution of growth is assessed for SMEs in different industries, for SMEs that have access to the capital market, or not, and for different size classifications namely micro, small and medium-sized SMEs. A key feature of the empirical studies reported in this paper is that they utilize the same database of SMEs. The data were analysed using ordinary least squares regression. The results show that growth is not consistently a major determinant of SMEs' capital structure but is more important in some circumstances than others.

2. Determinants of SME capital structure

Capital structure has proved to be a perennial puzzle in finance (Myers 1984). The original M and M propositions (Modigliani and Miller, 1958 and 1963) highlighted the important issues involved in financial structure decisions namely: the cheaper cost of debt compared to equity; the increase in risk and in the cost of equity as debt increases; and the benefit of the tax deductibility of debt. They argued that, in the absence of taxes, the cost of capital remained constant as the benefits of using cheaper debt were exactly offset by the increase in the cost of equity due to increased risk. With taxes and the deductibility of interest charges they concluded that firms should use as much debt as possible. Myers (1984) described the compromise "static trade-off" theory in which firms would use a good deal of debt to take advantage of tax deductibility but not too much to avoid the increasing likelihood of costly bankruptcy.

In practice there is considerable variation in the use of debt. This is particularly apparent for SMEs, with survey results (e.g. Ray and Hutchinson, 1983) showing that many SMEs do not use any debt and very few use any external equity or long-term debt (Bolton, 1971, Wilson, 1980). A response to this has been that this reflects shortcomings on the part of SME owner-managers on the demand side and, or, deficiencies on the part of financial institutions and capital markets (the "finance gap") on the supply side. In recent years there have been attempts to provide explanations, of a positive rather than normative nature, of SME financing using agency theory (Jensen and Meckling, 1976).

The determinants of capital structure were specifically considered by Myers (1977). The pecking order theory (POT) as proposed by Myers (1984), provided further explanations as to what determines firms' capital structures and was built on the work of Jensen and Meckling (1976) on agency theory, of Myers and Majluf (1984) on information asymmetry, and of Ross (1977) on signalling theory. Myers (1984) extended the work of Donaldson (1961) by applying the term "pecking order" to Donaldson's description of firms' preferences for finance. Myers (1984) contrasted his POT with the static trade-off theory, which had developed from the M&M propositions. The POT argument was that there was no well-defined target equity mix because there were two kinds of equity, one at the top of the pecking order and one at the bottom. Particularly because of the costs caused by information asymmetry in dealing with outsiders,



firms would rank internal finance highest. Information asymmetry is part of the “moral hazard” problem that takes the form of post-contractual opportunism particularly by means of asset substitution (Jensen and Meckling 1976). This is more likely to arise in dealings with small enterprises because of their “close” nature, i.e. being controlled by one person or a few, related people (Watson and Wilson, 2002) and their having fewer disclosure requirements.

The preference for internally generated funds would then require adjustment of firms’ dividend policy but given that dividends are “sticky” it could not be guaranteed that internal funds would equal those needed for investment purposes (Adedeji, 1998). Where the funds available were greater than those needed, firms could invest the excess in securities. If funds from retained profits were not enough, firms could draw on their deposits, and if this was still not sufficient they might consider borrowing followed by issuing hybrid securities and finally, by issuing equity. Issuing equity was seen by Myers (1984) as particularly undesirable because of the “bad signal” it gave to shareholders.

According to Cosh and Hughes (1994), the POT, with its emphasis on the desirability of the use of funds generated within the business rather than funds raised externally, can readily be applied to SMEs. Indeed SMEs seem to face a more extreme version of the POT described as a “constrained” POT by Holmes and Kent (1991) and a “modified” POT by Ang (1991) because they have less access to external funds, debt as well as equity than do large enterprises.

The POT suggests that use of external funds is very much related to profitability on the basis that SMEs, particularly if they are not stock exchange listed, will make use of internally generated funds as a first resort, i.e. those which make use of external funds will be those with a lower level of profit. Growth is likely to lead SMEs that do not have sufficient internal resources to borrow although if the pecking order is constrained by lack of external funding of any kind, SMEs might restrict their growth to fit the availability of internal funds. Myers (1984) refers to the importance of asset type in providing collateral for borrowing in a situation of information asymmetry. Given the “lumpiness” of many investments, it is more likely that smaller firms will need to borrow than large when faced with investment opportunities. It can also be deduced from the POT, given the importance of retained funds, that newer firms will have less time to accumulate resources and so will need to borrow more than older firms.

3. Effects of industry, access to capital market and differences between micro, small and medium-sized SMEs on SME capital structure.

(i) Industry

The interest in SME capital structure has included consideration of whether industry plays a part in its determination (Jordan, Lowe and Taylor, 1998). Variations due to industry effects are likely to be more pronounced for SMEs since most of them are “unitary firms” (Bolton, 1971).

With regard to industry effects, Myers (1984), argued that the crucial difference between the POT and the static trade-off theory of capital structure was that the POT suggested that debt ratios would be determined by firms’ cumulative need for funds. He gave the example of a very profitable firm that is in an industry with low growth. In this case the firm would have a high level of retained profits with relatively few opportunities for investment and would have low leverage. Clearly it would not make sense for such a firm to borrow just to bring itself into line



with the industry average. Myers concludes that, if his theory was correct, then average debt ratios would vary from industry to industry because asset risk, asset type, and requirements for external funds also varied by industry. A long-run industry average would not be a meaningful target for individual firms in that industry. The implication of this observation by Myers is that a firm's debt ratio will be determined by its need for funds and by its assets, not by industry norms.

In spite of the argument by Myers (1984) it has been suggested that the industry in which a firm operates does affect its capital structure directly (Harris and Raviv, 1991). Miller (1995) himself, admitted that the notion that the Modigliani and Miller (1958 and 1963) propositions might apply to banks seems strange because demand deposits, which are by far the major source of funds for most banks, differ in so many ways from ordinary corporate securities. Miller concluded that the reason the M&M propositions might not hold for banks was that the banking industry was highly regulated in a way that restricted capital structure choices.

Jordan, Lowe and Taylor (1998) quoted Harris and Raviv (1991) as saying that firms within an industry have more in common with each other than with firms in different industries and that there has been a persistent difference in industry debt ratios over time. Jordan, Lowe and Taylor (1998), pointed out that there was disagreement with this proposition and they also quoted Balakrishnan and Fox (1993) who argued that industry factors were not nearly as important as firm specific ones. Jordan, Lowe and Taylor (1998), themselves suggested that since SMEs often operate in niche markets, this would reduce the impact of broad industry influences on capital structure.

(ii) Access to capital market

Weston and Brigham (1981) provided arguments to explain SME capital structure using a life cycle approach. A major element in this explanation was the combination of rapid growth and lack of access to the capital market. SMEs were seen as starting out using only owners' resources. If they survived the dangers of under-capitalisation they were then likely to be able to make use of other sources of funds such as trade credit and short-term loans from banks. Rapid growth at this stage could lead to the problem of illiquidity that would follow from an over-reliance on short-term finance. The over-reliance on short-term finance would result from the lack of availability of long-term funds, such as debentures or equity issues that, in turn, would be due to the SME not having a stock market quotation. In other words, the SME at this stage would be facing the classic finance gap.

The growing SME would, therefore, have to choose between reducing its growth to keep pace with its internally generated funds, acquire a costly stock market quotation, or seek that most elusive form of finance - venture capital. The implications of this analysis for the financial structure of SMEs that grow rapidly are clear, namely higher levels of short-term debt, less, if any, use of long-term debt, and, in cases where short-term debt is substituted for unavailable equity issues, higher total debt. Access to the capital market in the form of a stock market flotation should enable SMEs to restructure their financing so as to rely less on debt, particularly short-term debt and thereby improve their liquidity. Growth after flotation would be likely to have less impact on capital structure because of the ability to raise finance in a balanced way, including long-term debt and equity, rather than having to rely on short-term debt.

(iii) Micro, small and medium-sized SMEs



Bates (1971) found that SMEs tended to rely more heavily on their savings than large enterprises; the very largest and the very smallest enterprises tended to finance a large part of capital expenditure from their own savings. The Wilson Committee (1980) found that there was great diversity in the financial characteristics and financial performance of small enterprises and that average figures for small enterprises, consequently, could be quite misleading and needed to be treated with caution. Storey, Keasey, Watson and Wynarczyk (1987) found that SMEs had greater variability in profits and that profitability increased with increase in size, unlike for large firms where the reverse was the case.

Davidson and Dutia (1991) measured liquidity, profitability and leverage for samples of small enterprises. Their results indicated that SMEs had lower levels of liquidity than large enterprises. However, they also found that the smallest enterprises carried disproportionately more cash and total current assets than large enterprises, with the reason for their lower liquidity being a disproportionately greater use of current liabilities. This is consistent with the Wilson (1980) finding and suggests that very small enterprises may not be as illiquid as may first appear because of larger holdings of cash. This could be due to either poor cash management or to a desire to hold higher levels of cash for precautionary reasons that would be a rational response to the existence of a finance gap for small enterprises.

(iv) Implications for growth as a determinant of SME capital structure

The extent to which growth is a determinant of SME capital structure could well be affected by which industry SMEs operate in, whether they have access to capital markets and whether they are very small (micro), small or medium sized. The purpose of this paper is to investigate the interactions between these factors and the relative contribution of growth compared to other determinants of capital structure such as profit, asset structure, size and age. The following section provides a discussion of the methods used to do this.

4. Variables, data and tests

From the work of Myers (1977 and 1984) profitability, asset structure (as a proxy for collateral), size and age were identified as likely determinants of capital structure as well as growth. These independent variables were calculated as follows: growth as the percentage increase in sales over the previous three years, profitability: the ratio of pre-tax profits to sales, asset structure: fixed assets as a proportion of total assets, size: total assets in pounds sterling and for age: 1995 (the year of the original study) less the year of incorporation.

The above variables are not intended to be a comprehensive set of determinants to explain capital structure (Shyam-Sunder and Myers, 1999). For example, taxation that is likely to be an important factor (Walsh and Ryan, 1997) is not included. The emphasis is on seeing the extent to which the relationship between the determinants, especially growth, varies with industry, access to capital market and whether the SME is micro, small or medium-sized.

It is also important to note that size is being included in two different ways in this analysis. It is included as an interval level variable (total assets) and also as a nominal level variable (micro, small and medium-sized). This is because the effects of the determinants, including size measured in total assets, might well vary depending on whether the SME is in fact very small (micro), small



or medium-sized. Micro was defined as 1- 10 employees (including owner-manager/s), small as 11 – 100 and medium-sized as 101 – 200 employees.

Van der Wijst and Thurik (1993) argue that in the case of SMEs there are likely to be differences in the impact that determinants have on short-term as opposed to long-term debt. For example “matching” of assets and liabilities (Myers, 1977) may take place such that fixed (long-term) assets are used as collateral for long-term debt. The implication of this is that there would be a strong positive relationship between fixed assets and long-term debt but not necessarily between fixed assets and short-term debt. Using total debt may mask two opposite effects and so both long-term and short-term debt have been used as the dependent variables. The long-term debt (LTD) variable was calculated by dividing long-term debt by total assets and the short-term (STD) variable was calculated by dividing short-term debt by total assets.

Data were obtained from financial statements available from the Lotus One/Private Plus databases for UK SMEs . Data for several thousand SMEs were collected for the early through mid 1990s. An SME was defined as a firm with fewer than 200 employees. The relationships between the determinants and short-term and long-term debt were tested using ordinary least squares regression for different industry groups, floated and unfloated SMEs and different size categories of SMEs (micro, small and medium).

5. Results

(i) Overall

Table 1 summarises the results derived from regression analyses carried on the Private Plus database. The analyses tested the relationships between capital structure, for both long-term and short-term debt, and the determinants identified above regardless of industry, access to capital market or different size categories. From Table 1 it can be seen that growth is positively related to both long and short-term borrowing but is not significant for either. This suggests that growth is not as strong an explanation of SME borrowing as might be thought. It may also suggest that firms restrict their growth to what they can finance from internal sources. Profit is only strongly negatively related to STD. This suggests that need alone is not enough to induce lenders to provide long-term funds to unprofitable firms. The results for asset structure do suggest that matching of long-term assets with long-term liabilities is taking place. The results for size and age suggest that new and small SMEs rely heavily on short-term debt.

Table 1 Relationships between determinants and LTD and STD

	LTD	STD
GROWTH	Positive, not significant	Positive, not significant
PROFIT	No significant relationship	Negative, significant
ASSET STRUCTURE	Positive, significant	Negative, significant
SIZE	Positive, significant	Negative, significant
AGE	No significant relationship	Negative, significant

These results are broadly consistent with other studies (e.g. Bennet and Donnelly, 1993; Van der Wijst and Thurik, 1993 and Jordan et al, 1998). They provide at least partial support for the determinants of capital structure identified by Myers (1977 and 1984). However, the results suggest that growth itself is not a major determinant of capital structure compared to profit, asset



structure, size and age. What is of further interest is whether growth might be a more important determinant for SMEs depending on which industry they operate in, whether they have access to the capital market and whether they are micro, small or medium-sized.

(ii) *Industry effects*

The industry classifications used for this study were: 1 – Agriculture, Forestry and Mining, 2 – Manufacturing, 3. – Construction, 4. – Wholesale and Retail Distribution, 5.- Hotels and Restaurants, 6 – Transport and Communication, 7 – Transport, 8 – Business Services, 9 – Education and Health, and 10 – Other.

Table 2 shows that growth is a significant, positive, determinant of LTD in only the Business Services industry. Profit is not significant in any industry. Asset structure is significantly positive in all industries except Finance. Size is positively significant for Construction and Business Services. Age is positively significant for Distribution, Hotels and Restaurants, Finance, Education and Health and Other.

Table 2 Industries: LTD

Variable	B	Std. Error	t	Sig.	Variable	B	Std. Error	t	Sig.
Growth Ind. 1	0.007	0.019	0.346	0.729	Size Ind. 1	3.9E-06	0.000	1.850	0.064
Growth Ind. 2	0.004	0.008	0.554	0.580	Size Ind. 2	7.2E-06	0.000	0.414	0.679
Growth Ind. 3	0.014	0.008	1.894	0.058	Size Ind. 3	3.2E-06	0.000	2.916	0.004
Growth Ind. 4	0.002	0.007	0.339	0.735	Size Ind. 4	1.1E-06	0.000	1.406	0.160
Growth Ind. 5	0.022	0.029	0.771	0.441	Size Ind. 5	-2.5E-07	0.000	-0.068	0.945
Growth Ind. 6	-0.003	0.010	-0.289	0.773	Size Ind. 6	2.6E-06	0.000	0.928	0.354
Growth Ind. 7	-0.007	0.017	-0.392	0.695	Size Ind. 7	-1.1E-06	0.000	-0.624	0.533
Growth Ind. 8	-0.010	0.004	-2.316	0.021	Size Ind. 8	3.9E-06	0.000	6.782	0.000
Growth Ind. 9	0.016	0.011	1.483	0.138	Size Ind. 9	-1.2E-05	0.000	-1.599	0.110
Growth Ind. 10	0.009	0.012	0.709	0.479	Size Ind. 10	-1.7E-07	0.000	-0.130	0.897
Profitability Ind. 1	-0.065	0.056	-1.151	0.250	Age Ind. 1	-2.5E-04	0.001	-0.380	0.704
Profitability Ind. 2	0.068	0.082	0.821	0.412	Age Ind. 2	-4.4E-04	0.000	-1.464	0.143
Profitability Ind. 3	-0.034	0.113	-0.303	0.762	Age Ind. 3	-0.001	0.000	-1.731	0.084
Profitability Ind. 4	-0.006	0.102	-0.060	0.952	Age Ind. 4	-0.001	0.000	-3.090	0.002
Profitability Ind. 5	-0.274	0.187	-1.460	0.144	Age Ind. 5	-0.002	0.001	-2.373	0.018
Profitability Ind. 6	0.082	0.131	0.625	0.532	Age Ind. 6	-0.001	0.001	-0.994	0.320
Profitability Ind. 7	-0.063	0.079	-0.793	0.428	Age Ind. 7	-0.003	0.001	-2.501	0.012
Profitability Ind. 8	-0.033	0.027	-1.244	0.214	Age Ind. 8	-0.001	0.000	-1.280	0.201
Profitability Ind. 9	-0.072	0.070	-1.025	0.305	Age Ind. 9	-0.003	0.001	-5.573	0.000
Profitability Ind. 10	0.006	0.046	0.139	0.889	Age Ind. 10	-0.001	0.000	-2.863	0.004
Asset Structure Ind. 1	0.138	0.054	2.535	0.011	Const. Dummy Ind. 1	-0.048	0.045	-1.066	0.287
Asset Structure Ind. 2	0.329	0.039	8.442	0.000	Const. Dummy Ind. 2	-0.087	0.033	-2.601	0.009
Asset Structure Ind. 3	0.195	0.035	5.510	0.000	Const. Dummy Ind. 3	-0.051	0.031	-1.636	0.102
Asset Structure Ind. 4	0.190	0.027	7.009	0.000	Const. Dummy Ind. 4	-0.040	0.031	-1.291	0.197
Asset Structure Ind. 5	0.401	0.058	6.892	0.000	Const. Dummy Ind. 5	-0.044	0.055	-0.800	0.424
Asset Structure Ind. 6	0.249	0.043	5.786	0.000	Const. Dummy Ind. 6	-0.057	0.037	-1.520	0.129
Asset Structure Ind. 7	0.228	0.158	1.437	0.151	Const. Dummy Ind. 7	0.078	0.048	1.620	0.105
Asset Structure Ind. 8	0.178	0.027	6.468	0.000	Const. Dummy Ind. 8	-0.005	0.030	-0.154	0.878



Asset Structure Ind. 9	0.423	0.045	9.354	0.000	Const. Dummy Ind. 9	-0.007	0.048	-0.135	0.893
Asset Struct. Ind. 10	0.211	0.037	5.731	0.000	Const. Dum. Ind. 10	0.076	0.027	2.827	0.005
R ²	0.322								
Adjusted R ²	0.304								
F-Statistic	17.353				0.000				
Regression Sum of Squares	15.702								
Residual Sum of Squares	33.019								

For STD, Table 3 shows that growth is a significant, positive determinant for five of the ten industries namely Manufacturing, Construction, Distribution, Business Services and Other. Profit is a significant, negative, determinant of STD for eight industries (1, 2, 3, 4, 5, 6, 7, and 10). Asset structure is a significant, negative determinant for all industries. Size is significantly, negatively related to STD for the Construction industry and Business Services industry but significantly positively related to STD for the Finance industry. Age is significantly, negatively related to STD for seven industries (1, 2, 3, 4, 6, 8 and 9) and significantly positively related to STD for one industry (Finance).

Table 3 Industries: STD

Variable	B	Std. Error	t	Sig.	Variable	B	Std. Error	t	Sig.
Growth Ind. 1	0.055	0.028	1.934	0.053	Size Ind. 1	-4.2E-06	0.000	-1.323	0.186
Growth Ind. 2	0.042	0.011	3.711	0.000	Size Ind. 2	-2.4E-06	0.000	-0.924	0.356
Growth Ind. 3	0.054	0.011	4.802	0.000	Size Ind. 3	-5.7E-06	0.000	-3.510	0.000
Growth Ind. 4	0.043	0.010	4.323	0.000	Size Ind. 4	-1.8E-06	0.000	-1.542	0.123
Growth Ind. 5	0.046	0.043	1.084	0.278	Size Ind. 5	-7.3E-06	0.000	-1.380	0.168
Growth Ind. 6	0.026	0.015	1.713	0.087	Size Ind. 6	-3.7E-06	0.000	-0.871	0.384
Growth Ind. 7	0.021	0.025	0.809	0.418	Size Ind. 7	7.5E-06	0.000	2.948	0.003
Growth Ind. 8	0.028	0.007	4.215	0.000	Size Ind. 8	-5.4E-06	0.000	-6.285	0.000
Growth Ind. 9	0.008	0.016	0.496	0.620	Size Ind. 9	1.0E-05	0.000	0.904	0.366
Growth Ind. 10	0.045	0.021	2.211	0.027	Size Ind. 10	-1.9E-06	0.000	-0.946	0.344
Profitability Ind. 1	-0.401	0.084	-4.793	0.000	Age Ind. 1	-0.002	0.001	-2.030	0.043
Profitability Ind. 2	-0.504	0.123	-4.104	0.000	Age Ind. 2	-0.002	0.000	-4.331	0.000
Profitability Ind. 3	-0.908	0.156	-5.833	0.000	Age Ind. 3	-0.003	0.001	-3.931	0.000
Profitability Ind. 4	-0.727	0.152	-4.800	0.000	Age Ind. 4	-0.002	0.000	-5.044	0.000
Profitability Ind. 5	-0.287	0.262	-1.095	0.274	Age Ind. 5	-0.002	0.001	-1.750	0.080
Profitability Ind. 6	-0.405	0.195	-2.080	0.038	Age Ind. 6	-0.003	0.001	-2.197	0.028
Profitability Ind. 7	-0.324	0.117	-2.758	0.006	Age Ind. 7	0.004	0.002	2.548	0.011
Profitability Ind. 8	-0.314	0.040	-7.941	0.000	Age Ind. 8	-0.002	0.001	-3.503	0.000
Profitability Ind. 9	-0.150	0.088	-1.702	0.089	Age Ind. 9	-0.002	0.001	-2.435	0.015
Profitability Ind. 10	-0.304	0.078	-3.888	0.000	Age Ind. 10	5.2E-05	0.001	0.089	0.929
Asset Structure Ind. 1	-0.233	0.079	-2.961	0.003	Const. Dummy Ind. 1	0.116	0.068	1.709	0.088
Asset Structure Ind. 2	-0.240	0.058	-4.134	0.000	Const. Dummy Ind. 2	0.101	0.050	2.007	0.045
Asset Structure Ind. 3	-0.270	0.052	-5.156	0.000	Const. Dummy Ind. 3	0.226	0.046	4.862	0.000
Asset Structure Ind. 4	-0.283	0.040	-7.003	0.000	Const. Dummy Ind. 4	0.152	0.046	3.277	0.001
Asset Structure Ind. 5	-0.269	0.086	-3.142	0.002	Const. Dummy Ind. 5	0.127	0.081	1.559	0.119
Asset Structure Ind. 6	-0.429	0.064	-6.684	0.000	Const. Dummy Ind. 6	0.219	0.056	3.888	0.000



Asset Structure Ind. 7	-0.541	0.236	-2.294	0.022	Const. Dummy Ind. 7	0.069	0.073	0.950	0.342
Asset Structure Ind. 8	-0.158	0.041	-3.872	0.000	Const. Dummy Ind. 8	0.105	0.045	2.327	0.020
Asset Structure Ind. 9	-0.211	0.071	-2.985	0.003	Const. Dummy Ind. 9	-0.038	0.076	-0.507	0.612
Asset Struct. Ind. 10	-0.183	0.056	-3.271	0.001	Const. Dum. Ind. 10	0.496	0.041	12.165	0.000
R ²	0.363								
Adjusted R ²	0.346								
F-Statistic	20.797				0.000				
Regression Sum of Squares	41.737								
Residual Sum of Squares	73.203								

(iii) Access to capital market

Table 4 shows that growth is not significantly related to LTD for either floated or unfloated SMEs although it is positively related and almost significant for unfloated SMEs. Profit is significantly negative for unfloated SMEs. Asset structure is positively significant for both floated and unfloated SMEs. Size is positively significant for both groups. Age is significantly positive for floated SMEs but significantly negative for unfloated SMEs.

Table 4 Floated and unfloated SMEs: LTD

	Floated	Unfloated
GROWTH	1.89276E-07	2.85734E-08
Std error	3.6903E-07	3.8505E-07
T statistic	.513	.074
PROFIT	.028857	-.136308
Std. error	.018907	.034671
T statistic	1.526	-3.931*
ASSET STRUCTURE	.139901	.114233
Std. error	.039595	.040144
T statistic	3.533*	2.846*
SIZE	5.83495E-07	1.96042E-06
Std error	9.3563E-08	8.3351E-07
T statistic	6.236*	2.352*
AGE	1.43440E-04	-.001302
Std error	6.6339E-05	1.8663E-04
T statistic	2.162	-6.978*

Constant = 0.054333, Std error = 0.007699, T statistic = 7.057*

Adjusted R Square = 0.12238, F = 36.2825*

* = significant at 0.05 level of confidence

Table 5 shows the results for STD. Growth again does not seem to be significantly related to debt, in this case short-term debt for either floated or unfloated SMEs. Profit is significantly negatively related to LTD for floated SMEs. Asset structure is significantly negatively related to STD for



floated SMEs but significantly positively related for unfloated SMEs. Size is significantly negatively related for both groups as is Age.

Table 5 Floated and unfloated SMEs: STD

	Floated	Unfloated
GROWTH	-3.67174E-07	3.52645E-07
Std error	5.0910E-07	5.3120E-07
T statistic	-.721	.664
PROFIT	-.159700	-.066882
Std. error	.026084	.047832
T statistic	-6.123*	-1.3998
ASSET STRUCTURE	-.493852	.210391
Std. error	.054623	.055381
T statistic	-9.041*	3.799*
SIZE	-1.09098E-06	-5.65898E-06
Std error	1.2908E-07	1.1499E-06
T statistic	-8.542*	-4.921*
AGE	-1.89408E-04	-.001476
Std error	9.1520E-05	2.5747E-04
T statistic	-2.070	-5.732*

Constant = 0.685996, Std error = 0.010622, T statistic = 64.585*

Adjusted R Square = 0.15748, F = 48.63353*

* = significant at 0.05 level of confidence

(iv) *Micro, small and medium-sized SMEs*

Table 6 Micro, small and medium-sized SMEs: LTD

Variable	1-10 employees	11-100 employees	101-200 employees
GROWTH	8.78999E-05	2.02156E-05	5.16155E-04
Std error	7.3151E-04	4.4608E-04	1.3389E-04
T statistic	0.120	0.508	3.855*
PROFIT	-0.027374	-0.114352	-0.161776
Std. error	0.012607	0.014945	0.036221
T statistic	-2.171*	-7.652*	-4.466*
ASSET STRUCT.	0.192135	0.274665	0.258541
Std. error	0.018822	0.007331	0.011456
T statistic	10.208*	37.467*	22.568*
SIZE	8.86489E-06	2.12017E-06	3.08105E-06
Std error	7.4250E-07	2.1748E-07	3.8764E-07
T statistic	11.938*	9.749*	7.948*
AGE	-2.28114E-04	-6.90546E-04	-0.001035
Std error	2.3721E-04	8.9014E-05	1.2925E-04
T statistic	-0.962	-7.758	-8.008*



Constant = 0.028783, Std error = 0.003608, T statistic = 7.976*

Adjusted R Square = 0.16537, F = 139.42957*

* = significant at 0.05 level of confidence

Table 7 Micro, small and medium-sized SMEs: STD

Variable	1-10 employees	11-100 employees	101-200 employees
GROWTH RATE	0.001703	1.77455E-04	-1.60789E-04
Std error	0.002622	2.0025E-04	4.8233E-04
T statistic	0.650	0.886	-0.333
PROFIT	-0.134436	-0.479899	-0.556441
Std. error	0.045370	0.053831	0.130451
T statistic	-2.963*	-8.915*	-4.266*
ASSET STRUCT.	-0.122767	-0.310771	-0.293303
Std. error	0.066603	0.026377	0.041259
T statistic	-1.843	-11.782*	-7.111*
SIZE	-2.01905E-05	-2.11062E-06	-3.94388E-06
Std error	2.6733E-06	7.8345E-07	1.3964E-06
T statistic	-7.553*	-2.694	-2.821*
AGE	-1.88539E-04	-0.001878	-0.001722
Std error	8.5127E-04	3.2048E-04	4.6556E-04
T statistic	-0.221	-5.859	-3.699*

Constant = 0.674958, Std error = 0.012983, T statistic = 51.988*

Adjusted R Square = 0.03898, F = 29.38699*

* = significant at 0.05 level of confidence.

From Table 6 it can be seen that growth is positively, significantly related to LTD only for medium-sized SMEs. Profit, asset structure and size have consistent, statistically significant relationships with LTD for all size categories. For age the negative relationship with LTD is not significant for micro SMEs.

Table 7 shows that growth is not significantly related to STD for any of the size categories. The other determinants show statistically significant relationships for all categories for profit and for two out of the three categories for asset structure, size and age.

6. Summary and conclusions

The results of the studies reported in this paper suggest that growth is not a very important determinant of SME borrowing either short-term or long-term. Profit, asset structure, size and age appear to be much more important. Growth seems to play a part in determining long-term and short-term debt in the Business Services industry and short-term debt in the Manufacturing, Construction and Distribution industries. Growth is also related to long-term debt for medium-sized SMEs. Other than these cases, growth is not statistically significantly related to SME debt even allowing for industry, access to stock market and size category effects. The implications of this are that SMEs may well limit their growth to the finance they have available internally. This



is consistent with the “modified” or severe pecking order theory for SMEs but is a major constraint on economic development.



References

- Adedeji, A. (1998), "Does the Pecking Order Hypothesis Explain the Dividend Payout Ratios of Firms in the UK?", *Journal of Business Finance and Accounting*, Vol. 25, pp. 1127-55.
- Ang, J.S. (1991), "Small Business Uniqueness and the Theory of Financial Management", *Journal of Small Business Finance*, Vol. 1, pp. 1-13.
- Balakrishnan, S. and Fox, I. (1993) "Asset Specificity, Firm Heterogeneity and Capital Structure," *Strategic Management Journal*, Vol. 14, pp. 3-16.
- Bates, J., (1971), *The Financing of Small Business*, London: Sweet and Maxwell.
- Bennet, M. and R. Donnelly (1993), "The Determinants of Capital Structure: Some UK Evidence", *British Accounting Review*, Vol. 25, pp. 43-59.
- Bolton Committee (1971), *Report of the Committee of Inquiry on Small Firms*, Cmnd4811, London: HMSO.
- Cosh, A. and Hughes, A.(1994), "Size, Financial Structure and Profitability," in A. Hughes, and D.J. Storey, D.J, (eds) *Finance and the Small Firm*, London: Routledge, pp. 18-63.
- Davidson, W. N. and Dutia, D. (1991), "Debt, Liquidity and Profitability Problems in Small Firms", *Entrepreneurship: Theory and Practice*, Vol. 16, pp. 53-64.
- Donaldson, G. (1961), *Corporate Debt Capacity: a Study of Corporate Debt Policy and the Determination of Corporate Debt Capacity*. Boston Division of Research, Harvard Graduate School of Business Administration.
- Harris, M. and Raviv, A. (1991), "The Theory of Capital Structure," *Journal of Finance*, 46 (1), 297-355.
- Holmes, S. and P. Kent (1991), "An Empirical Analysis of the Financial Structure of Small and Large Australian Manufacturing Enterprises", *Journal of Small Business Finance*, Vol. 1, pp. 141-54.
- Jensen, M. and W. Meckling (1976), "Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure", *Journal of Financial Economics*, Vol. 3, pp. 305-60.
- Jordan, J., J. Lowe and P. Taylor (1998), "Strategy and Financial Policy in UK Small Firms", *Journal of Business Finance and Accounting*, Vol. 25, pp. 1-27.
- Miller, M. (1995), "Do the M&M Propositions Apply to Banks?," *Journal of Banking and Finance*, Vol. 19, pp. 483-489.
- Modigliani, F. and M. Miller (1958), "The Cost of Capital, Corporation Finance and the Theory of Investment", *American Economic Review*, Vol. 48, pp. 61-97.
- Modigliani, F. and M. Miller (1963), "Corporate Income Taxes and the Cost of Capital: a Correction", *American Economic Review*, Vol. 53, pp. 433-43.
- Myers, S.C. (1977), "Determinants of Corporate Borrowing", *Journal of Financial Economics*. Vol. 5, pp. 147-76.
- Myers, S.C. (1984), "The Capital Structure Puzzle", *Journal of Finance*, Vol. 39, pp. 575-92.
- Myers, S. and N.S. Majluf (1984), "Corporate Financing and Investment Decisions When Firms Have Information that Investors Do Not Have", *Journal of Financial Economics*, Vol. 13, pp. 187-221.



- Ray, G.H. and Hutchinson, P.J. (1983), *The Financing and Financial Control of Small Enterprise Development*, Aldershot: Gower.
- Ross, G.C. (1977), "The Determinants of Financial Structure: the Incentive Signalling Approach", *Bell Journal of Economics and Management Science* (Spring), pp. 23-40.
- Shyam-Sunder, L. and S.C. Myers (1999), "Testing Static Tradeoff Against Pecking Order Models of Capital Structure", *Journal of Financial Economics*, Vol. 51, pp.219-44.
- Storey, D., Keasey, K., Watson, R. and Wynarczyk, P. (1987), *The performance of small firms: profits, jobs and failures*, Routledge, London.
- Van der Wijst, N. and R. Thurik (1993), "Determinants of Small Firm Debt Ratios: An Analysis of Retail Panel Data", *Small Business Economics*, Vol. 5, pp. 55-65.
- Walsh, E.J. and J. Ryan (1997), "Agency and Tax Explanations of Security Issuance Decisions", *Journal of Business Finance and Accounting*, Vol. 24, pp. 943-61.
- Watson, R and N. Wilson (2002), "Small and Medium Size Enterprise Financing: A Note on Some of the Empirical Implications of a Pecking Order", *Journal of Business Finance and Accounting*, Vol. 29, pp. 557-578.
- Weston, J. F. and Brigham, E.F. (1981), *Managerial Finance*, 7th ed., Hinsdale: Dryden Press.
- Wilson Committee (1980), *Report of the Committee to Review the Functioning of the Financial System*, Cmnd 7937, London: HMSO.