

Small Firm Growth, Access to Capital Markets and Financial Structure: Review of Issues and an Empirical Investigation

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ABSTRACT. This article investigates the financial structure of small firms with an emphasis on growth and access to capital markets. Neo-classical economic, life cycle, pecking order and agency theory perspectives are reviewed in order to formulate testable propositions concerning levels of long-term, short-term and total debt, and liquidity. Up-to-date financial data were collected from the U.K. Private+ database for a large sample comprising of both listed and unlisted small firms. Regression results indicate significant relationships between financial structure and profitability, asset structure, size, age and stock market flotation but not growth except when rapid and combined with lack of stock market flotation. Analysis of stock market flotation as an interactive dummy reveals major differences between listed and unlisted small firms. The results indicate that the variety of financial structures observed in practice may reflect rational trade-offs of various costs on the part of small firm owner-managers but that the over-reliance on internally available funds and the importance of collateral, in the case of unlisted small firms, are likely to be major constraints on economic growth.

1. Introduction

Financial structure has proved to be a perennial puzzle in finance (Myers, 1984). The original M

and M propositions (Modigliani and Miller, 1958, 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 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 the increase in risk. This left a net tax advantage with the conclusion that firms should use as much debt as possible. In practice firms do not follow this policy. The lack of the maximum use of debt is particularly apparent in small firms, with survey results (e.g. Ray and Hutchinson, 1983) showing that many small firms do not use any debt. A response to this has been that this reflects shortcomings on the part of small firm owner-managers but in recent years there have been attempts to provide explanations of their behaviour which do not rely on assumptions of irrationality on their part (Gibson, 1992).

The question of the extent to which financial structure is related to size raises the broader issue of the relationship between financial structure and stage of development of the firm which in turn introduces other factors, such as age, growth rate and access to the capital market. The purpose of this article is to examine factors which are likely to affect the financial structure of small firms, and, by making use of the increasingly comprehensive and sophisticated databases now available, empirically test these relationships. This will add to the results of other recent work which has been done on this topic such as that by Hall and Hutchinson (1993) which looked at newly quoted small firms and that by Van der Wijst and Thurik (1993) which analysed the determinants of small firm debt ratios

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The emphasis given, in this study, is on small firm growth and access to capital markets which should be of interest to those involved with the more dynamic small firms which can be expected to play an increasing role in economic development.

The next section of this paper reviews the literature on the changing perspectives provided by economic, pecking order and agency theories, on stage of development and small firms' financial structure. This is followed by an explanation of the method used for the empirical study which covers sample selection and data, choice of variables and statistical analysis. This, in turn, is followed by the presentation of the results and, finally, in the conclusions section, the implications are discussed.

2. Stage of development and small firms' financial structure

2.1. *Changing attitudes to small firms' financial structure*

The M and M propositions did not make reference to size or stage of development being factors in determining financial structure and, therefore, by implication they should not affect financial structure. This is consistent with concepts of market efficiency since otherwise there would be obvious arbitrage opportunities arising from trading in the shares of firms of different sizes. The lack of concern for size and stage of development is consistent with work by economists on the relationship between size and growth which tended to confirm Gibrat's law of proportionate effect (Gibrat, 1931) namely that size and growth are not related. This theoretical lack of concern about firm size and stage of development existed side by side for many years with an increasing concern, by government commissions, about the existence of a finance gap for small firms.

Whilst it was felt in some quarters that lack of access to the capital market could result in an over-reliance on short-term sources of finance, there were few attempts at providing a theoretical rationale to link stage of development of the small firm with its financial characteristics. More recently, however, with the increasing importance of the small firm sector and the persistent divergence between theory and practice for small firms,

there have emerged more sophisticated explanations (for example, Reid, 1993). There is a growing emphasis on agency theory and the "pecking order" theory of raising finance, to explain the special nature of small firms and the implications for financial structure. The various phases of concern for the relationship between stage of development of the small firm and its financial characteristics are reviewed in more detail in the following paragraphs.

2.2. *Early economic perspectives*

The introduction of the 1948 U.K. Companies Act, with its requirement for financial disclosure, gave rise to a number of studies at Cambridge University which utilised financial data and included company size as a variable. The original analyses were described in a collection of papers edited by Tew and Henderson (1959). Subsequent analyses were conducted by Singh and Whittington (1968) and Whittington (1971). Whilst the Cambridge studies included size as a variable, they were restricted by data availability in that the 1948 disclosure requirements only applied to larger firms. The Cambridge studies, also, did not consider the issue of financial structure. Work by Bates (1971) at Oxford extended previous work by considering both of these aspects. Bates's study raised the possibility that there might be significant differences in financial structure between large and small firms. He found that small firms, compared to large, tended to be more self-financing, had lower liquidity, rarely issued stock, had lower leverage, relied more on bank financing and used more trade credit and directors' loans.

Bates's empirical observations tended to confirm the concern held by government commissions that small firms were indeed different from large in terms of their access to finance. An early reference to this possibility was provided by the MacMillan Report (1931) and gave rise to the term "finance gap" which described the situation where a firm had grown to a size where it had made maximum use of short-term finance but was not yet big enough to approach the capital market for longer-term finance. The issue of the finance gap was returned to by the Bolton (1971) and Wilson (1980) Committees both of which found

evidence of differences between the financial structures of large and small firms which were generally consistent with Bates's findings.

2.3. *Life cycle approach*

Weston and Brigham (1981) provided arguments to explain small firm financial 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. Small firms were seen as starting out using only owners' resources. If they survived the dangers of undercapitalisation 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 which 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 which, in turn, would be due to the small firm not having a stock market quotation. In other words, the small firm at this stage would be facing the classic finance gap. The dynamic small firm 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 small firms which 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.

2.4. *Pecking order framework*

Whilst the Weston and Brigham analysis does provide an explanation which incorporates the concept of a finance gap, it suffers from the limitations of "life cycle" approaches in that it implies a serial progression and inevitability which is not necessarily the case in practice. An alternative explanation is provided by the pecking order framework (POF) proposed by Myers (1984). The POF suggests that firms finance their needs in a hierarchical fashion, first using internally available funds, followed by debt, and finally

external equity. This preference reflects the relative costs of the various sources of finance. This approach is particularly relevant to small firms since the cost to them of external equity may be even higher than for large firms for a number of reasons. Not only is a stock market flotation expensive to arrange but initial public offerings are subject to underpricing which seems to be particularly severe for smaller firms (Buckland and Davis, 1990). Having obtained a stock market flotation small firms are likely to find themselves the victims of the "small firm effect" which results in their having a higher cost of equity, for a given level of risk, than larger firms (Banz, 1981; Reinganum, 1981). Finally, stock market flotation, with its requirement for wider share ownership, may open the door to loss of control by the original owner-managers and the possibility of takeover. In these circumstances avoiding the use of external equity may be a rational response by small firms.

2.5. *Agency theory*

The use of external finance by small firms is also amenable to a transaction cost/contracting/agency theory analysis following on from the work of Coase (1937), and Jensen and Meckling (1976). The fixed cost element of transactions inevitably puts small firms at a disadvantage in raising external finance. Agency theory provides valuable insights into small firm finance since it focusses on the key issue of the extent of the interrelationship between ownership and management. Agency problems in the form of information asymmetry, moral hazard and adverse selection are likely to arise in contractual arrangements between small firms and external providers of capital. These problems may be more severe, and the costs of dealing with them, by means of monitoring and bonding, greater, for small firms. Monitoring could be more difficult and expensive for small firms because they may not be required to disclose much, if any, information and, therefore, will incur significant costs in providing such information to outsiders for the first time. Moral hazard and adverse selection problems may well be greater for small firms because of their closely held nature. Bonding methods such as incentive schemes could be more difficult to implement for such firms. The

existence of these problems for small firms may explain the greater use of collateral in lending to small firms as a way of dealing with agency problems.

A major problem with agency theory is that it is difficult to test empirically (Walker, 1989) since information concerning contractual arrangements is not available in financial statements. Effort has, therefore, gone into identifying proxy measures for agency costs. Crutchley and Hansen (1989) examined the financial structure of 603 industrial firms for the 1981–85 period. They specifically looked at the impact that five firm-specific characteristics which proxied for agency costs had on financial structure. They found that greater earnings volatility was associated with lower leverage, that larger firms use more leverage than small and that lower diversification cost induces lower debt ratios. Taken together, the findings supported a conclusion that managers make financial policy trade-offs to control agency costs in an efficient manner. Chung (1993) analysed firms' data to investigate the empirical relationship between firms' asset characteristics and financial leverage based on hypotheses derived from agency theory. His study found that firms with higher asset diversification and larger fixed asset ratios tended to use more long-term debt and that firms with greater growth opportunities and higher operating risk tended to use less short and long-term debt. Van der Wijst and Thurik (1993) analysed retail panel data from the former West Germany consisting of average financial data of 27 shoptypes covering 25 years in order to identify the determinants of small firm debt ratios. They found that whilst the theoretical determinants did indeed appear relevant, the influences encountered in the analysis were far less straightforward than the hypothesised effects in the theory. Specifically, influences on total debt were found to be the net effect of opposite influences on long and short-term debt.

Recent empirical research on financial structure has, therefore, been reinforced by a growing acceptance of the difference between large and small firms (Ang, 1991, 1992) and the emergence of theories, particularly agency theory, to explain them. The focus of this paper is on the dynamic small firm which is experiencing growth and the method for the empirical study, described below,

has been designed to test the relevant aspects of the theories discussed in this section as they relate to stage of development of the small firm.

3. Method

Use was made of the "U.K. Private+" database which provides detailed information, including financial statement data, on both public and private companies. All companies which satisfied the definitional and data requirements for the research were selected resulting in a sample of 3480 small firms (172 listed, 3308 unlisted) with five years data (required to calculate the growth rate variable discussed below) up to and including 1993. The criterion for inclusion in the sample was that firms satisfied the EC definition (Storey, 1994) of smallness i.e. employed less than 100 people. The following data items were required to be available:

NO. EMPLOYEES (NE)
 YEAR OF INCORPORATION (YI)
 SALES TURNOVER (TO)
 PRE-TAX PROFITS (PTP)
 FIXED ASSETS (FA)
 CURRENT ASSETS (CA)
 TOTAL ASSETS (TA)
 CURRENT LIABILITIES (CL)
 LONG-TERM LOANS (LTL)
 OTHER LONG-TERM LIABILITIES (OLTL)

The main components of financial structure were used as the dependent variables namely long-term and short-term debt, which were then aggregated into total debt, and a measure of liquidity was included in order to take into consideration the relationship between short-term debt and short-term assets. Liquidity is often given considerable weight by potential lenders despite the theoretical view that it should be a matter of indifference in a perfect market where bankruptcy is a costless reallocation of resources! These variables (all as percentages) were calculated as follows:

- Long-term debt (LTD) = $LTL + OLTL/TA$
- Short-term debt (STD) = CL/TA
- Total debt (TD) = $CL + LTL + OLTL/TA$
- Liquidity (LIQ) = $CA - CL/TA$

The independent variables were chosen to test the various theories of financial structure discussed

above. The POF suggests that use of external funds is very much related to profitability and so this is included as an independent variable with the hypothesis being that, since small firms in particular will make use of internally generated funds as a first resort, those which make use of external funds will be those with a lower level of profit. The corollary of this for liquidity is that firms with higher profits will have more internal funds available and will, therefore, need to borrow less in the way of short-term funds thereby improving liquidity. It can also be hypothesised from the POF, given the importance of retained funds, that older firms will make less use of external finance and have higher liquidity.

The stage of development theory suggests that growth and access to the stock market affect capital structure and they are, therefore, also included as independent variables. In this scenario an hypothesis is that growth will increase the need for external finance and, because of their easier availability, the external sources used are likely to be short-term, thereby reducing liquidity. Access to the stock market is hypothesised to result in the availability of long-term debt as the finance gap closes with consequent improvement in liquidity. The combination of rapid growth and lack of access to the stock market are hypothesised to force small firms to make excessive use of short-term funds thereby increase their overall debt levels and reduce their liquidity.

Agency theory suggests that information asymmetry and moral hazard will be greatest for the smallest firms because of the lack of financial disclosure and their owner-managed nature. This leads to the hypothesis that lenders will be unwilling to lend long-term to such firms particularly because of the danger of asset substitution. Consequently, the smallest firms will have to rely on short-term finance to the detriment of their liquidity. Alternatively, in order to induce lenders to provide long-term funds in the face of agency problems, the small firm could provide collateral. This would be a suitable approach for small firms with a high proportion of fixed assets and so asset structure is included as an independent variable.

The default position in neo-classical economics, of course, is that none of the above variables is related to capital structure because this would create arbitrage opportunities and, as these were

taken advantage of, any differences due to these factors would disappear.

A single modelling strategy, ordinary least squares (OLS) regression, is used to test aspects of the theories discussed above by means of employing various independent variables. In future work it is hoped to test the robustness of the results by the use of alternative methods. The independent variables (all as percentages except where otherwise indicated) are calculated as follows:

- Profitability (PROFITA) = PTP/TO
- Growth rate in sales (GROWTH) = $(TO_t - (TO_t - 4))/TO_t - 4$ (it was felt that growth over a period of time would give a better indication of financing needs than that for a single year)
- Asset structure (AS_STRU) = FA/TA
- Size (TOT_AS) = TA absolute values
- Age (AGE) = 1994 - YI years
- Access to stock market (DUM_TY2) = 1/0 for quoted/unquoted
- Composite dummy (DUM_GWT) = 1 for unquoted small firms experiencing rapid growth (i.e. in top quartile for growth rate in sales), = 0 for all others

The data were analysed using a straightforward OLS regression. Whilst this can be viewed as a very robust estimation procedure there may be the possibility of simultaneous feedback between dependent and independent variables. This can be the case where some variables are more controllable by the firm than others, for example in this project, profit and growth as independent variables and the dependent financial structure variables. Subsequent extensions of this study will employ two stage least squares to check for this possibility.

Given the importance of access to capital markets in the financial life cycle of the firm, not only is stock market quotation included as a dummy variable but also as an interactive dummy (indicated in the results presented in Table II by the suffix 1 for quoted firms) in order to assess differences between listed and unlisted small firms in terms of profitability, growth, asset structure, size and age.

4. Results

From Table I it can be seen that the level of long-term debt is most strongly related to asset structure, stock market listing and size. The strength of the association between long-term debt and flotation corroborates the notion of a long-term debt finance gap for unlisted small firms. Contrary to what might be expected in an efficient market, the access to long-term debt is not strongly associated with profitability but is strongly related to collateral. The level of long-term debt is less strongly related to growth and to age, with the association being that the more rapidly growing and younger firms have higher levels of long-term debt, which tends to confirm the POF since such firms are less able to rely on internally generated funds.

For short-term debt it can be seen that there is a negative relationship with profitability for small firms! The implication here is that profitable small firms fund their operations from retained profits

whereas less profitable ones need to borrow. Growth rate does not appear to be related to use of short-term debt except when combined with lack of access to the stock market when rapidly growing unlisted small firms have to make use of all sources of debt to compensate for the inability to issue equity. Smaller firms and younger firms appear to rely more on short-term finance. The greater use of short-term debt by the smallest firms may reflect their lack of success in raising longer-term debt. The use of short-term debt is negatively related to asset structure which reflects the situation where small firms without fixed assets have less collateral and, therefore, need to make more use of short-term finance. Finally, the use of short-term debt is strongly related to whether a firm is listed or not, with unlisted firms making more use of this source. This is consistent with the finance gap argument that small firms are forced to rely more on short-term funds because of the lack of long-term finance.

TABLE I
Regression estimates

Variable	LTD	STD	TD	LIQ
PROFITA	-0.010883	-0.165406	-0.176289	0.103798
Std. error	0.015936	0.021956	0.028068	0.022618
T statistic	-0.683	-7.533*	-6.281*	4.589*
GROWTH	2.06509E-07	-1.89484E-09	2.04614E-07	-1.26065E-08
Std. error	1.0572E-07	1.4566E-07	1.8620E-07	1.5005E-07
T statistic	1.953	-0.013	1.099	-0.084
AS_STRU	0.239616	-0.304578	-0.064961	-0.611839
Std. error	0.014091	0.019415	0.024819	0.020000
T statistic	17.005*	-15.688*	-2.617*	-30.592*
TOT_AS	4.45040E-07	-7.05067E-07	-2.60027E-07	-3.86071E-07
Std. error	9.9583E-08	1.3720E-07	1.7539E-07	1.4134E-07
T statistic	4.469*	-5.139*	-1.483	-2.731*
DUM_TY2	0.098699	-0.158529	-0.059830	-0.016730
Std. error	0.016542	0.022791	0.029136	0.023479
T statistic	5.967*	-6.956*	-2.054*	-0.713
DUM_GWT	0.014307	0.072087	0.086394	-0.061771
Std. error	0.007840	0.010801	0.013808	0.011127
T statistic	1.825	6.674*	6.257*	-5.551*
AGE	-7.41930E-05	-3.16305E-04	-3.90498E-04	2.39794E-04
Std. error	6.2881E-05	8.6636E-05	1.1075E-04	8.9249E-05
T statistic	-1.180	-3.651*	-3.526*	2.687*
CONSTANT	0.026548	0.649011	0.675560	0.295648
Std. error	0.006468	0.008912	0.011393	0.009181
T statistic	4.104*	72.824*	59.297*	32.203*
Adj.R Square	0.11262	0.15032	0.04182	0.26055
F =	51.96078*	72.43250*	17.87074*	144.26386*

* Significant at 0.05 level of confidence.

Whilst the adjusted R Square for the regression for total debt is low, this is due to the effects of some of the variables being in the opposite direction for short-term and long-term debt (as found by Van der Wijst and Thurik, 1993) and thus tending to cancel out for total debt. This is particularly the case for asset structure, size and stock market flotation where the signs are reversed for short-term and long-term debt. Profitability also appears to be negatively related to total debt as well as to short-term and long-term debt although this is not significant for long-term debt. The two variables which are consistently related to debt are age and the combined rapid growth rate with lack of listing dummy. Short-term, long-term and total debt levels fall with age and rise with rapid growth combined with lack of access to the capital market.

From Table I it can also be seen that liquidity is a function of profitability with a significant positive relationship between the two. This is consistent with the finding that the use of short-term debt is negatively related to profitability. Whilst once more there is no strong relationship between liquidity and growth, the combination of growth and lack of access to the stock market for longer-term finance does result in lower liquidity. However, access to the capital market itself does not appear to affect liquidity levels significantly. Asset structure is strongly negatively related to liquidity and this reflects the situation where a high level of fixed assets results in a lower proportion of current assets which, other things being equal, will result in a lower level of net working capital. Age is positively, and size negatively, associated with liquidity which suggests a relationship between stage of development and liquidity such that smaller, younger firms have lower liquidity due to their lack of retained earnings and inability to raise long-term finance.

Table II presents the results for the analysis of stock market flotation as an interactive dummy (suffix 1 for listed firms). From this it can be seen that there is little difference between listed and unlisted small firms' use of long-term debt in terms of growth rate, asset structure, and total assets with the signs and significance levels being similar for the two groups. However, the level of long-term debt for quoted small firms is much more related to profitability than it is for unquoted small firms. Whilst not significant at the 5 percent

level, there is clearly a positive relationship between profit and long-term debt for listed small firms whereas for unlisted small firms the relationship is strongly negative! This suggests that the small unquoted firms which are getting these funds are the ones with lower profits taking advantage of their collateral. Also, once floated, the relationship between long-term debt and age changes. Prior to flotation, younger small firms appear to rely more on long-term debt, presumably because they have not had time to accumulate their own reserves. After flotation, however, debt levels appear to be positively associated with age.

The interactive dummy analysis for short-term debt shows a change in sign for the asset structure for listed and unlisted small firms. This suggests that even in raising short-term finance, unlisted small firms may be more often required to provide collateral than listed small firms. Again, age is more strongly related to financing, in this case short-term, for unlisted as opposed to listed, small firms but with the sign being negative for both. This indicates that, as far as short-term debt is concerned, the POF applies to both listed and unlisted small firms but especially the latter.

The interactive dummy analysis for total debt shows that asset structure is positively related to debt, and, therefore, collateral, for unlisted small firms but is negatively related to debt for listed small firms. This could reflect a reduction in agency costs with flotation as the small firm is more subject to external scrutiny and is less under the control of one, or a few, individual(s). Age is significantly negatively related to total debt for unlisted firms reflecting the ability of older firms to accumulate their own resources and avoid borrowing.

Finally, from Table II, it can be seen that the interactive dummies for liquidity show differences between listed and unlisted firms for total assets and age. For unlisted small firms, liquidity is positively related to both age and size but the reverse is true for listed small firms. This suggests that for unlisted small firms liquidity is a function of retained profit whereas for listed small firms this relationship does not hold so strongly since they have other sources of finance available.

TABLE II
Regression estimates – interactive dummies

Variable	LTD	STD	TD	LIQ
PROFITA1	0.028857	-0.159700	-0.130843	0.059857
Std. error	0.018907	0.026084	0.032905	0.026369
T statistic	1.526	-6.123*	-3.976*	2.270*
PROFITA	-0.136308	-0.066882	-0.203191	0.178772
Std. error	0.034671	0.047832	0.060341	0.048356
T statistic	-3.931*	-1.3998	-3.367*	3.697*
GROWTH1	1.89276E-07	-3.67174E-07	-1.77898E-07	-7.90480E-08
Std. error	3.6903E-07	5.0910E-07	6.4224E-07	5.1468E-07
T statistic	0.513	-0.721	-0.277	-0.154
GROWTH	2.85734E-08	3.52645E-07	3.81218E-07	7.51149E-08
Std. error	3.8505E-07	5.3120E-07	6.7012E-07	5.3702E-07
T statistic	0.074	0.664	0.569	0.140
AS_STRU1	0.139901	-0.493852	-0.353951	-0.339632
Std. error	0.039595	0.054623	0.068909	0.055222
T statistic	3.533*	-9.041*	-5.137*	-6.150*
AS_STRU	0.114233	0.210391	0.324624	-0.297552
Std. error	0.040144	0.055381	0.069864	0.055988
T statistic	2.846*	3.799*	4.646*	-5.315*
TOT_AS1	5.83495E-07	-1.09098E-06	-5.07484E-07	-3.52095E-07
Std. error	9.3563E-08	1.2908E-07	1.6283E-07	1.3049E-07
T statistic	6.236*	-8.542*	-3.117*	-2.698*
TOT_AS	1.96042E-06	-5.65898E-06	-3.69856E-06	5.37100E-06
Std. error	8.3351E-07	1.1499E-06	1.4506E-06	1.1625E-06
T statistic	2.352*	-4.921*	-2.550*	4.620*
DUM_GWT	6.81690E-04	0.077288	0.077970	-0.051941
Std. error	0.007842	0.010818	0.013647	0.010937
T statistic	0.087	7.144*	5.713*	-4.749*
AGE1	1.43440E-04	-1.89408E-04	-4.59688E-05	-8.67476E-05
Std. error	6.6339E-05	9.1520E-05	1.1545E-04	9.2523E-05
T statistic	2.162*	-2.070*	-0.398	-0.938
AGE	-0.001302	-0.001476	-0.002778	0.002296
Std. error	1.8663E-04	2.5747E-04	3.2481E-04	2.6029E-04
T statistic	-6.978*	-5.732*	-8.554*	8.820*
CONSTANT	0.054333	0.685996	0.740329	0.231937
Std. error	0.007699	0.010622	0.013399	0.010738
T statistic	7.057*	64.585*	55.251*	21.600*
Adj.R Square	0.12238	0.15748	0.07476	0.29386
F =	36.28250*	48.63353*	21.02233*	108.27270*

* Significant at 0.05 level of confidence.

5. Conclusions

From the results presented in the previous section, it can be seen that profitability, asset structure, size (total assets), age and access to the capital market do affect the financial structure of small firms. Whilst growth does not significantly affect financial structure itself, the combination of rapid growth and lack of access to the capital market does. There also appear to be major differences

between listed and unlisted small firms for all aspects of financial structure.

The results, therefore, indicate that the M and M propositions on financial structure do not seem to apply to small firms. Access to the capital market itself appears to be a major factor determining the capital structure of small firms. Once a flotation has been achieved, long-term debt becomes available, collateral becomes less important and liquidity is no longer determined by age

and profitability. The POF emerges as a good explanation of small unlisted firms' capital structure with a heavy reliance on internally generated funds being the key feature. Agency theory also provides explanations which stand up to empirical testing. The use of collateral, especially for unlisted small firms, is widespread and is consistent with its being used as a way of dealing with agency problems in lending to small firms.

Small firm owner-managers appear to be faced with a choice between going it alone, borrowing against collateral where this is available, or incurring the high costs of stock market flotation. The variety of financial structures observed in practice is likely to reflect rational trade-offs of these considerations by small firm owner-managers. What is of concern, from the point of view of economic development, is that unlisted dynamic small firms may be curtailing their growth to match their financial resources. The long-term finance that is available to unlisted small firms is provided on the basis of collateral rather than profitability. These less than optimal outcomes suggest a need to continue to find ways of reducing barriers to entry to the stock market for small firms and the need for financial institutions to develop innovative solutions to agency problems, which arise in dealing with small firms, rather than relying on collateral.

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References

- Ang, J. S., 1991, 'Small Business Uniqueness and the Theory of Financial Management', *Journal of Small Business Finance* 1(1), 1-13.
- Ang, J. S., 1992, 'On the Theory of Finance for Privately Held Firms', *Journal of Small Business Finance* 1(3), 185-203.
- Banz, R., 1981, 'The Relationship Between Return and Market Value of Common Stocks', *Journal of Financial Economics* 9, 3-18.
- Bates, J., 1971, *The Financing of Small Business*, London: Sweet and Maxwell.
- Bolton Committee, 1971, *Report of the Committee of Inquiry on Small Firms*, Cmnd 4811, London: HMSO.
- Buckland, R. and E. W. Davis, 1990, 'The Pricing of New Issues on the Unlisted Securities Market: The Influence of Firm Size in the Context of the Information Content of New Issue Prospectuses', *British Accounting Review* 22, 207-222.
- Chung, K. H., 1993, 'Asset Characteristics and Corporate Debt Policy: An Empirical Investigation', *Journal of Business Finance and Accounting* 20(1), 83-98.
- Coase, R. H., 1937, 'The Nature of the Firm', *Economica* 9, 386-405.
- Crutchley, C. E. and R. S. Hansen, 1989, 'A Test of the Agency Theory of Managerial Ownership, Corporate Leverage and Corporate Control', *Financial Management* 18(4), 36-46.
- Gibrat, R., 1931, *Les Inegalites Economiques*, Paris: Sirey.
- Gibson, B., 1992, 'Financial Information for Decision-Making: An Alternative Small Firm Perspective', *Journal of Small Business Finance* 1(3), 221-232.
- Hall, G. C. and P. J. Hutchinson, 1993, 'A Probit Analysis of the Changes in the Financial Characteristics of Newly Quoted Small Firms, 1970-73 and 1980-83', *Small Business Economics* 5, 207-214.
- Jensen, M. and W. Meckling, 1976, 'Theory of the Firm: Managerial Behaviour, Agency Costs and Capital Structure', *Journal of Financial Economics* 3, 305-360.
- MacMillan Committee, 1931, *Report of the Committee on Finance and Industry*, Cmnd 3897, London: HMSO.
- Modigliani, F. and M. Miller, 1963, 'Taxes and the Cost of Capital: A Correction', *American Economic Review* 53(3), 433-443.
- Modigliani, F. and M. Miller, 1958, 'The Cost of Capital, Corporation Finance and the Theory of Investment', *American Economic Review* 48, 261-297.
- Myers S. C., 1984, 'The Capital Structure Puzzle', *Journal of Finance* 34(3), 575-592.
- Ray, G. H. and P. J. Hutchinson, 1983, *The Financing and Financial Control of Small Enterprise Development*, Aldershot: Gower.
- Reid, G. C., 1993, *Small Business Enterprise: An Economic Analysis*, London/New York: Routledge.
- Reinganum, M. R., 1981, 'Misspecification of Capital Asset Pricing: Empirical Anomalies Based on Earnings' Yields and Market Values', *Journal of Financial Economics* 9, 19-46.
- Singh, A. and G. Whittington, 1968, *Growth, Profitability and Valuation*, Cambridge: Cambridge University Press.
- Storey, D. J., 1994, *Understanding the Small Firm Sector*, London: Routledge.
- Tew, B. and R. F. Henderson, 1959, *Studies in Company Finance*, Cambridge: Cambridge University Press.
- Van der Wijst, N. and R. Thurik, 1993, 'Determinants of Small Firm Debt Ratios: An Analysis of Retail Panel Data', *Small Business Economics* 5, 55-65.
- Walker, M. (1989), 'Agency Theory: A Falsification Perspective', *Accounting, Organisations and Society* 14(5/6), 433-453.
- Weston, J. F. and E. F. Brigham, 1981, *Managerial Finance*, 7th Ed., Hinsdale: Dryden Press.
- Whittington, G., 1971, *The Prediction of Profitability and other Studies of Company Behaviour*, Cambridge: Cambridge University Press.
- Wilson Committee, 1980, *Report of the Committee to Review the Functioning of the Financial System*, Cmnd 7937, London: HMSO.