The Determinants of Capital Structure of Stock Exchange-listed Non-financial Firms in Pakistan

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1. INTRODUCTION

Capital structure refers to the different options used by a firm in financing its assets. Generally, a firm can go for different levels/mixes of debts, equity, or other financial arrangements. It can combine bonds, TFCs, lease financing, bank loans or many other options with equity in an overall attempt to boost the market value of the firm.

In their attempt to maximise the overall value, firms differ with respect to capital structures. This has given birth to different capital structure theories that attempt to explain the variation in capital structures of firms over time or across regions. On the other hand, empirical evidence is also not sometime consistent in substantiating a particular capital structure theory.

This paper attempts to answer the question of what determines the capital structure of Pakistani listed firms other than those in financial sector. According to the authors' knowledge, it is the first thorough study to be conducted in Pakistan with regard to determinants of capital structure of listed non-financial firms. Though Booth, *et al.* (2001) have worked on the determinants of capital structure of 10 developing countries including Pakistan; however, their study analyses data only for the firms that were included in the KSE-100 Index from 1980 to 1987.

The paper is organised as follows. Section 1 introduces the paper. In the next section, some of the theoretical literature concerning the determinants and effects of leverage is reviewed. In Section 3 we describe our data and we justify the choice of the variables used in our analysis. In Section 4 we estimate the model used in our analysis. The Fifth Section presents the results and conclusion.

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2. THEORIES OF CAPITAL STRUCTURE

2.1. Miller and Modigliani Theory of Irrelevance

In their seminal paper, Modigliani and Miller (1958) showed that the value of the firm is independent of the capital structure it takes on (MM irrelevance). They argue that there would be arbitrage opportunities in the perfect capital market if the value of the firm depends on its capital structure. Furthermore, investor can neutralise any capital structure decision of the firms if both investor and firms can borrow at the same rate of interest. Though this theory is based on many unrealistic assumptions, yet it provides the basics theoretical background for further research.

2.2. The Trade-off Theory

The trade-off theory says that a firm's adjustment toward an optimal leverage is influenced by three factors namely taxes, costs of financial distress and agency costs.

(a) *Taxes*

Interest, being a tax deductible expense, decreases the tax liability and increases the after tax cash flows. Firms in their attempt to increase cash flows and market value will embark on higher level of debt if the tax rate is higher. Thus tax rate and leverage have positive relationship.

(b) *Bankruptcy Costs*

The possibility of default on debts increases with the increase in level of debt beyond the optimal point. Should the firm default on repayment of loan; the control of the firm will be shifted from shareholders to bondholders who will try to repossess their investment through the process of bankruptcy. Because of the possible financial distress caused by the higher level of leverage, a firm may face two types of bankruptcy costs. They are direct costs and indirect costs. Direct costs include the administrative costs of the bankruptcy process. If the firm is large in size, these costs constitute only small percentage for the firm. However, for a small firm, these fixed costs constitute higher percentage and are considered active variable in deciding the level of debt. The indirect costs arise because of change in investment policies of the firm encase the firm foresees possible financial distress. To avoid possible bankruptcy, firm will cut down expenditures on research and development, training and education of employees, advertisement etc. Furthermore, customers begin to doubt the firm's ability to maintain the same level of quality in goods and services. This doubt appears in the form of drop in sales and eventually results in drop of the market share price of the firm.

This implies that the potential benefits from employing leverage are shadowed by the potential costs of bankruptcy.

2.3. Agency Theory

Jensen and Meckling (1976) identify the possible conflict between shareholders and managers interests because of the manager's share of less than 100 percent in the firm. Furthermore, acting as agents to shareholders, managers try to appropriate wealth away from bondholders to shareholders by taking more debt and investing in risky projects. The managers' given role has many implications for the capital structure of a firm. To be more specific, the following summary points are presented.

(a) *The Free Cash Flow Hypothesis*

Free cash flow refers to cash flow available after funding all projects with positive cash flows. Managers having less than 100 percent stake in business may try to use the free cash flows sub-optimally or use them to their own advantage rather than to increase value of the firm. Jensen (1986) suggests that this problem can be somehow controlled by increasing the stake of managers in the business or by increasing debt in the capital structure, thereby reducing the amount of "free" cash available to managers [Jensen (1986); Stultz (1990)]. Here the reduction in cash flow because of debt financing is considered to be the benefit of debt financing.

(b) *Overinvestment and Underinvestment Problems*

The bondholder expropriation hypothesis says that shareholders try to gain advantage at the cost of bondholders. If investment yields high returns, the extra or additional benefits go to shareholders and if the firm fails, the bondholders also sustain the loss. So bondholders share extra risks for no reward. Being agents to shareholders, management tries to invest even in projects that may not have good chances of viability. This phenomenon is termed as "overinvestment problem". The losses sustained by shareholders because of this incentive are termed as "asset substitution effect".

On the other hand, the underinvestment problem refers to the tendency of managers to avoid safe net present value projects in which value of equity may decrease a little, however, increase in value of debt maybe high. This happens because management, being primarily responsible to shareholders, does not concern itself with the overall increase in value of the firm rather it tries to increase the value of equity only [Myers and Majluf (1984)].

Jenson and Meckling (1976) propose that optimal capital structure is reached by trading off the agency costs of debt against the benefits of debt.

2.4. Information Costs and Signalling Effects

Another approach to explain the capital structure of firms is the differences in the level of information, which the outsiders have about the investment opportunities and income distribution of the firm. Information asymmetry may result in two different outcomes for capital structure.

The first effect on capital structure because of information is called signalling with proportion of debt. Ross (1977) says that managers have better knowledge of the income distribution of the firm. When they issue debt, it may generate positive signals to the outside world about the firm's income distribution suggesting that the firm has stable income and is able to pay the periodic instalments and interest payments. In this regard, higher debt may show higher confidence of managers in the firm's smooth income distribution and adequacy of the income. Thus firms in their efforts to increase investors' confidence and thus increase the value of equity will use higher debt in the capital structure.

Another possible effect of information is upon the mispricing of new securities. Myers and Majluf (1984) say that investors generally perceive that managers use private information to issue risky securities when they are overpriced. This perception of investors leads to the underpricing of new equity issue. Sometimes this underpricing is very severe and cause substantial loss to the existing shareholders. Because of this, firms will avoid issuing equity for financing new project; rather they will first fulfil their needs of financing from internally generated funds then issue debt if further financing is required and finally issue equity as a last resort. This has been termed as "Pecking Order Theory". Krasker (1986) says the same that equity prices fall when new issue of stock is given. Because of this phenomenon firms are inclined to finance new projects from internally generated funds or debt.

3. DATA AND MEASUREMENT OF VARIABLES

3.1. Source of Data

The study is based on the data taken from the State Bank of Pakistan publication "Balance Sheet Analysis of Joint Stock Companies Listed on The Karachi Stock Exchange Volume-II 1996-2001". This publication provides useful information on key accounts of the financial statements of all listed firms of KSE for six year period.

3.2. The Sample

Initially we decided to include all listed firms in our analysis for the period 1997-2001. As the capital structure of the firms in financial sector is quite different from firms in non-financial sector, we excluded all firms in financial sector like banks, insurance companies, and investment companies. We also excluded those firms from our analysis for which complete data was not available for the period 1997-2001. To avoid outlier in the data that can possibly distort the analysis, we excluded all firms that had values at least three standard deviation from the average value of the total firms. Finally we were left with the sample of 445 firms in non-

financial sector industries listed on Karachi Stock Exchange from 1997 to 2001. In this way we have total of 2225 firm-years.

3.3. Dependent and Independent Variables

After discussing the various theories of capital structure, now we discuss the potential dependent and independent variables for our study. We take the debt to total assets ratios as a proxy for leverage (dependent variable). For independent variables, though there can be many, however, following Rajan and Zingales (1995) we take only four main independent variables namely, tangibility, profitability, growth and size of the firm.

Measure of Leverage (LG)

Several research studies have used both market and book value based measures of leverage [Titman and Wessels (1988); Rajan and Zingales (1995)]. The former measure divides book value of debt by book value of debt plus market value of equity and the later measure divides the book value of debt by book value of debt plus book value of equity. We use the book value measure of leverage. This can be justified with the argument that optimal level of leverage is determined by the trade-off between the benefits and costs of debt financing. The main benefit of leverage is the cash savings generated because of the debt-tax shield. This tax shield benefits are not changed by market value of the debt once it is issued [Banerjee, *et al.* (2000)]. This is why market value of debt becomes irrelevant. On the other hand, the primary cost of borrowing is the increased chances of bankruptcy. If a firm falls in financial distress and goes into bankruptcy, then the relevant value of the debt is the book value of debt. Finally, book value measure provides relative ease and accuracy with which it can be calculated.

Another consideration in deciding the appropriate measure of leverage is to take total debt or only long term debt as a percentage of total assets. Though capital structure theories consider long term debt as a proxy for financial leverage, we use the measure of total debt because in Pakistan firms have mostly short-term financing as the average firm size is small which makes access to capital market difficult in terms of cost and technical difficulties. The main sources of debt in Pakistan have been commercial banks, which do not encourage long term loans, with almost no reliance on market based debt until mid 1994 when government moved to remove most of the constraints among which one action was to amend company law to permit corporate entities to raise debt directly from the market in the form of TFCs (Term Finance Certificates). So corporate bond market has limited history and is in the process of development. This explains why firms on average in Pakistan have more short term financing than long term financing. Booth, *et al.* (2001) also pointed in their study on determinants of capital structure in developing countries including

Pakistan that the use of short term financing is higher than long term financing in developing countries.

Independent Variables

1. *Tangibility of Assets (TG)*

A firm with large amount of fixed asset can borrow at relatively lower rate of interest by providing the security of these assets to creditors. Having the incentive of getting debt at lower interest rate, a firm with higher percentage of fixed asset is expected to borrow more as compared to a firm whose cost of borrowing is higher because of having less fixed assets. Thus we expect a positive relationship between tangibility of assets and leverage. We measure tangibility of asset (TG) as a ratio of fixed assets divided by total assets. We take total gross amount of fixed assets as the numerator. Using total gross amount of fixed assets rather than net depreciated value of assets makes sense as (i) different firms may possibly use different deprecation methods which may create unevenness in the data (ii) a firm can pledge an asset having a market value even if it has been fully depreciated. Calculating tangibility this way, the ratio was above one in some cases suggesting that total gross fixed assets were more than total assets. Our first hypothesis is:

> Hypothesis 1: A firm with higher percentage of fixed assets will have a higher debt ratio.

2. *Size (SZ)*

There are two conflicting viewpoints about the relationship of size to leverage of a firm. First, large firms do not consider the direct bankruptcy costs as an active variable in deciding the level of leverage as these costs are fixed by constitution and constitute a smaller proportion of the total firm's value. And also, larger firms being more diversified have lesser chances of bankruptcy [Titman and Wessels (1988)]. Following this, one may expect a positive relationship between size and leverage of a firm.

Second, contrary to first view, Rajan and Zingales (1995) argue that there is less asymmetrical information about the larger firms. This reduces the chances of undervaluation of the new equity issue and thus encourages the large firms to use equity financing. This means that there is negative relationship between size and leverage of a firm. Following Rajan and Zingales (1995), we expect a negative relationship between size and leverage of the firm.

We measure size (SZ) of the firm by the taking the natural log of the sales as this measure smoothens the variation in the figure over the periods of time.

> Hypothesis 2: There is a negative relationship between size and leverage of the firm.

3. *Growths (GT)*

Empirically, there is much controversy about the relationship between growth rate and level of leverage. According to pecking order theory hypothesis, a firm will use first internally generated funds which may not be sufficient for a growing firm. And next options for the growing firms is to use debt financing which implies that a growing firm will have a high leverage [Drobetz and Fix (2003)].

On the other hand, agency costs for growing firms are expected to be higher as these firms have more flexibility with regard to future investments. The reason is that bondholders fear that such firms may go for risky projects in future as they have more choice of selection between risky and safe investment opportunities. Deeming their investments at risk in future, bondholders will impose higher costs at lending to growing firms. Growing firms, thus, facing higher cost of debt will use less debt and more equity. Congruent with this, Titman and Wessels (1988); Barclay, *et al*. (1995) and Rajan and Zingales (1995) all find a negative relationship between growth opportunities and leverage.

Initially we expect that firms with higher growth opportunities will have higher level of leverage. Different research studies have used different measures of growth; like market to book value of equity, research expenditure to total sales measure and annual percentage increase in total assets [Titman and Wessels (1988)]. Given the structure of data we measure growth (GT) as a percentage increase in total assets, as the data was taken from the State Bank of Pakistan publication which does not contain information on annual stock prices and research expenditure of the listed firms.

Hypothesis 3: Firms with a higher growth rate will have higher leverage.

4. *Profitability (PF)*

Given the pecking order hypothesis firms tend to use internally generated funds first and than resort to external financing. This implies that profitable firms will have less amount of leverage [Myers and Majluf (1984)]. We expect a negative relationship between profitability and leverage.

We measure profitability (PF) as the ratio of net income before taxes divided by total assets. Previous studies have used earning before interest and taxes (EBIT) divided by total assets, as a measure of profitability as it is independent of leverage effects. However we use the said measure as the data taken from the State Bank of Pakistan publication does not permit us to calculate (EBIT).

Hypothesis 4: Firms with higher profitability with have lesser leverage.

Table 1 summarises the discussion on the determinants of capital structure and their measures and the expected relationship with leverage as par our hypotheses.

Table 1

Potential Determinants of Capital Structure, Their Measures, and
Expected Relationship with Leverage

Determinant	Measure (Proxy)	Expected Effect on Leverage (Hypothesis)
Tangibility	Total Gross Fixed Assets/ Total Assets	Positive
Size	Log of Sale	Negative
Growth	Annual Percentage Change in Total Assets	Positive
Profitability	EBT/Total Assets	Negative

Table 2 presents the mean, median, maximum, minimum and standard deviation for the variables discussed above.

Table 2

Five-years Summary of Descriptive Statistics

	Leverage	Tangibility	Profitability	Size	Growth
Mean	0.65	0.84	0.03	2.74	0.07
Median	0.63	0.84	0.03	2.74	0.02
Maximum	1.64[1]	2.71[2]	0.54	5.23	1.83
Minimum	0.04	0.05	(0.65)	(0.30)	(0.89)
Stan. Deviation	0.27	0.37	0.12	0.73	0.23

To check for the possible multicollinearity among the independent variables, we calculate the Pearson's co-efficient of correlations for the independent variables. Table 3 presents the results.

Table 3

Estimated Correlations between Independent Variables

	Tang	Profit	Size	Growth
Tang	1			
Profit	–0.27191	1		
Size	–0.23392	0.295909	1	
Growth	–0.15216	0.083498	0.128503	1

[1]Theoretically, total debt/total assets ratio should be less than one or one at maximum. However, we find many firms especially in textile industry with negative equity that explains why this ratio is above one.
[2]Theoretically speaking, fixed assets/total assets too should be lower than one. However, we use gross fixed assets/total assets ratio as a measure of tangibility. Tangibility ratio of above one tells that the firm has sufficient number of depreciated yet indisposed-off assets so that the gross value of all these assets is fairly higher than the total present depreciated value of all assets.

As we can see from the above table, the multicollinearity problem is not too severe among the selected independent variables. However, the table sheds light on some interesting correlations. First, tangibility is negatively correlated with the other three variables. It is interesting to observe that large firms have lesser-fixed assets as a percentage of total assets. One explanation may be that large firms do carry more fixed assets in absolute rupee terms; however, they constitute lesser percentage of total assets as the overall firm's size is too large. On the other hand, small firms may employ fewer amounts of fixed assets in absolute terms; however, the overall percentage is higher because fixed assets are needed and added in chunks.

The second observation is the positive correlation between profitability and size suggesting that large firms are more profitable. Third, the positive correlation between size and growth shows that large firms grow more. One explanation may be that large firms can afford to spend more on research and development and thus are able to add new product lines with which growth opportunities increase.

4. SPECIFICATION OF THE MODEL

The study uses panel data regression analysis. The panel data analysis facilitates analysis of cross-sectional and time series data. We use the pooled regression type of panel data analysis. The pooled regression also called the constant coefficients model is one where both intercepts and slopes are constant. The cross section company data and time series data are pooled together in a single column assuming that there is no significant cross section or temporal effects.

The general form of our model is:

$$LG_{it} = \beta_0 + \beta \; X_{it} + \varepsilon \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad (1)$$

$LG_{it} =$ The measure of leverage of a firm i at time t

$\beta_0 =$ The intercept of the equation

$\beta_i =$ The change co-efficient for X_{it} variables

$X_{it} =$ The different independent variables for leverage of a firm i at time t

$i =$ The number of the firms i.e. $i = 1, 2, 3\ldots N$ (in this study $N = 445$ firms)

$t =$ The time period i.e. $t = 1, 2, 3\ldots T$ (in this study $T = 5$ years).

Specifically, when we convert the above general least square equation into our specified variables, the equation will be:

$$LG_{it} = \beta_0 + \beta_1(TG_{it}) + \beta_2(SZ_{it}) + \beta_3(GT_{it}) + \beta_4(PF_{it}) + \varepsilon \; \ldots \qquad \ldots \qquad (2)$$

$LG =$ Leverage
$TG =$ Tangibility of assets
$SZ =$ Size
$GT =$ Growth

PF = Profitability

ε = The error term.

5. RESULTS OF THE ANALYSIS

The Table 4 shows the summary output for the regression analysis. The R^2 shows that only 25 percent of the variations in the dependent variable (*LG*) are explained by the variations in the given four independent variables. The Adjusted R^2 is slightly below the R^2. The F-statistics shows the validity of the model as its 97.53130 value is well above its Prob(F-statistic) value of 0.0000.

Table 4

Summary Output of the Regression Analysis

Independent Variables	Coefficient	Std. Error	*t*-Statistic	*p*-value
Tang (TG)	0.0279	0.0212	1.3158	0.1885
Size (SZ)	0.0180	0.0103	1.7487	0.0806
Growth (GT)	–0.0398	0.0173	–2.2981	0.0217
Profit (PF)	–1.1069	0.0610	–18.1599	0.0000
R-square	0.25580	MS of Regression	5.35758	
Adjusted *R-square*	0.25318	Sum square Regression	21.43032	
Standard Error	0.23438	Sum squared residuals	62.34771	
F-statistic	97.53130	Total sum of square	83.77803	
Prob(*F*-statistic)	0.00000			

Analysing the results for the effects of independent variable on dependent variable, we find that asset tangibility is positively correlated with leverage. However, we do not find much evidence that this relationship is statistically significant. Though the positive sign confirms our hypothesis about tangibility of assets, the statistical insignificance does not support our hypothesis. Thus we reject our hypothesis 1. The results thus do not confirm to the Jensen and Meckling's (1976) and Myers' (1977) version of trade-off theory that debt level should increase with more fixed tangible assets on balance sheet.

Size (SZ) is positively correlated with leverage. This suggests that large firms in Pakistan borrow more and small firms are fearful of more debt. This contradicts to our earlier hypothesis about the size of the firm that large firms will have lower level of leverage. This confirms to the bankruptcy cost theory on leverage that fixed direct costs of bankruptcy constitute a smaller portion of the total value of the firm thus larger firms do not hesitate to take more debt because of fear of bankruptcy. At the same time, the results contradict to the Rajan and Zingales (1995) view of less asymmetric information about large firms suggesting that new equity issue will not be under priced and thus large firms will issue more equity. We find the relationship significant at 10 percent level but not at 5 percent and 1 percent level.

Growth is negatively related to leverage and is significant at 10 percent and 5 percent level. This suggests that growing firms in Pakistan use more of equity and less debt to finance the new investment opportunities. This confirms to our earlier hypothesis about growth opportunities. This also supports the simple version of pecking order theory that suggest growing firms will resort first to the internally generated funds for fulfilling their financing needs. However, this does not support the extended version of pecking order theory that suggests that internally generated funds may not be sufficient for a growing firms and next option for such firm would be to use debt financing.

One explanation for low level of leverage for a growing firm may be that a growing firm is considered to be risky in terms of the new investment opportunities it embarks upon. Deeming their investment at risk in future, creditors impose high cost of lending to such firms. Facing higher costs of debt, growing firms prefer equity financing over debt financing. On the other hand, there may be some reluctance on the part of the growing firms to use debt financing. The reason is that growing firms face relatively higher investment risk as compared to stagnant firms. Investment opportunities will be more risky if the firms expand themselves to more new lines of businesses. To reduce the overall risk, the firms will not assume more financial risk and will use the option of equity financing.

One other explanation may be that firms in Pakistan grow but at lower rate. The internally generated funds are enough to finance the expansion programmes and the firms do not have to resort to external financing.

Of all the independent variables chosen for this study, profitability has turn out to be the most statistically significant determinant of capital structure in the context of Pakistan. Profitability is negatively correlated with income. This suggests that profitable firms in Pakistan use more of equity and less debt. This supports the pecking order theory and also approves our earlier hypothesis about profitability.

6. CONCLUSION

In this paper, we use pooled regression model of panel data analysis to measure the determinants of capital structure in listed Pakistani non-financial firms

for five-year period. We use total debt ratio divided by total assets as a proxy for leverage. We use four independent variables to measure their effect on leverage.

The results show that assets tangibility is positively correlated with debt; however, this relationship is not statistically significant. We may conclude that asset structure does not matter in determination of capital structure of Pakistani firms. This is in contrast to the previous empirical studies by Titman and Wessels (1988); Rajan and Zingales (1995) and Fama and French (2000) say that tangibility should be an important determinant of leverage.

Size measured by taking log of sales is positively correlated with leverage. This suggests that large firms will employ more debt. The implication is that large firms consider themselves to have less chances of falling into financial distress and have more capacity to absorb shocks. One may also infer that fixed direct bankruptcy costs are smaller for large firms as a percentage of their total value; that is why they do not fear bankruptcy that much as the smaller firms do. Facing lower bankruptcy costs, large firms take more debt.

Growth measured by the annual percentage change in total assets is negatively correlated with leverage that supports the simple version of pecking order theory that growing firms finance their investment opportunities first by their internally generated funds. However this does not support the extended version of pecking order theory.

Strong relationship was found between profitability and leverage. Profitability as measured by net profit before taxes divided by total assets is negatively correlated with leverage that supports the pecking order theory.

REFERENCES

Banerjee, S., A. Heshmati, and C. Wihlborg (2000) The Dynamics of Capital Structure. *SSE/EFI Working Paper Series in Economics and Finance* 333, 1–20.

Barclay, M. J., C. W. Smith, and R. L. Watts (1995) The Determinants of Corporate Leverage and Dividend Policies. *Journal of Applied Corporate Finance* 7:4.

Booth, L., V. Aivazian, A. Demirguc-Kunt, and V. Maksmivoc (2001) Capital Structures in Developing Countries. *Journal of Finance* 56, 87–130.

Drobetz, W., and R. Fix (2003) What are the Determinants of the Capital Structure? Some Evidence for Switzerland. University of Basel. WWZ/Department of Finance. (Working Paper No. 4/03.)

Fama, E. F., and K. R. French (2000) Testing Tradeoff and Pecking Order Predictions about Dividends and Debt. University of Chicago. (CRSP Working Paper 506.)

Jensen, M. (1986) Agency Costs of Free Cash Flow, Corporate Finance and Takeovers. *American Economic Review* 76:2, 323–329.

Jensen, Michael C., and William H. Meckling (1976) Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure. *Journal of Financial Economics* 3, 305–360.

Krasker, W. (1986) Stock Price Movements in Response to Stock Issues under Asymmetric Information. *Journal of Finance* 41, 93–105.

Modigliani, F., and M. H. Miller (1958) The Cost of Capital, Corporation Finance and the Theory of Investment. *American Economic Review* 48, 261– 297.

Myers, S. C. (1977) Determinants of Corporate Borrowing. *Journal of Financial Economics* 5, 147–175.

Myers, S., and N. Majluf (1984) Corporate Financing and Investment Decisions When Firms Have Information Investors Do Not Have. *Journal of Financial Economics* 13, 187–222.

Rajan, R., and L. Zingales (1995) What Do We Know about Capital Structure? Some Evidence from International Data. *Journal of Finance* 50, 1421–1460.

Ross, S. A. (1977) The Determination of Financial Structure: The Incentive Signalling Approach. *Bell Journal of Economics* 23–40.

State Bank of Pakistan (2001) *Balance Sheet Analysis of Joint Stock Companies Listed on the Karachi Stock Exchange*. Volume II. Karachi.

Stultz, R. (1990) Managerial Discretion and Optimal Financing Policies. *Journal of Financial Economics* 26, 3–27.

Titman, S., and R. Wessels (1988) The Determinants of Capital Structure Choice. *Journal of Finance* 43, 1–19.