
**FUNCTIONAL FIXATION : AN INVESTIGATION OF
THE INFLUENCE OF EARNINGS PER SHARE ON
COMPANY FINANCING DECISIONS**

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ABSTRACT

In this thesis the various arguments that have been put forward for the determinants of a company's capital structure are examined critically. However, none of these succeeds convincingly in reflecting actual practice. Furthermore, it is argued that the common practice of concentrating on Earnings Per Share (EPS) as a key indicator of a company's performance also impacts on the capital issue choice, and that there is functional fixation on EPS, particularly short-term EPS. Therefore the effect on a company's EPS of a particular method of finance turns out to be an important influence on a company's financing decisions.

A questionnaire sent to finance directors of companies elicits their views on their perceptions of the important influences on the choice of financing, and the responses are analysed using multivariate techniques. The results are encouraging as far as the present research question is concerned. An innovative approach of reconstructing company's financial statements to investigate the impact on various financial data if an alternative financing method had been chosen provides further evidence of a fixation on EPS. Limited dependent variable analysis is carried out to determine the variables which appear to influence the debt-equity choice. A by-product of the research question is an analysis of 'elasticity' measures of gearing, i.e. degrees of financial and operating leverage; and the usefulness and consistency of the bases of measurement used for these.

This thesis seeks to determine the extent to which financial choice is explained by, or at least consistent with, the maximisation of Earnings Per Share. In so doing, it seeks to provide a vital link between finance research and related financial accounting issues.

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MEMORANDUM

1. Some aspects of the tax implications of the method of issue are dealt with in:

Davidson I.R. & C.A. Mallin (1989) 'Ex-Effects: An Empirical Reassessment of the Clientele Effect Using UK Data', Accounting and Business Research Vol 19, No. 75 Summer 1989 pp.227-236

and

Mallin C.A. (1992) 'Stock Dividends - the Implications for the Private and Corporate Sectors', Stock Exchange Quarterly, Winter Edition 1992, pp. 21-24

2. Certain aspects relating to rights issues are considered in:

Davidson I.R. & C.A. Mallin (1992) 'Rights Issues: A Theoretical and Empirical Analysis', Warwick Business School Working Paper.

The remaining material is the work of the author and is unpublished.

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CHAPTER 1 : INTRODUCTION

1-1 Finance Issue Puzzle

There is a plethora of literature published in the finance journals over the last few decades that deals with various aspects of the financing of corporations. The financing issue can be broadly subdivided into, on the one hand, the essentially static question of the determinants of optimal capital structure (if any); and on the other, the essentially dynamic question of how changes in this structure should best be achieved, primarily by means of various types of finance issues, although repurchase of issued securities is a feasible but less common alternative.

It is not too difficult to envisage situations in which, where idealised competitive conditions do not hold, persuasive models from the existing literature may result in apparently perverse conflicts of static and dynamic 'optimal behaviour'. For example, the Ross (1977) analysis of capital structure points to equilibrium levels of debt based on signalling arguments, whereas the Heinkel and Schwartz (1986) analysis of finance issues, again based on

signalling arguments (but this time applied to the method of finance chosen) may conceivably suggest a method of (equity) finance that moves the company away from the static Ross equilibrium debt level. The inability to find a consensus viewpoint based on normative partial equilibrium models has led to the 'financing problem' being regarded as a long-standing 'puzzle'.

On the positive level, the problem is potentially more tractable. It is not too difficult to ask practitioners what they do in practice, and to attempt to generalise this into a behavioural theory. This essentially empirical approach can involve either survey work (eg. Donaldson (1961) for an early example) or statistical/econometric analysis. Both approaches have difficulties. Survey work based on questionnaires may capture the intentions of the respondents (or more perversely, their view of what they believe to be best practice), but it may not adequately represent their actual behaviour. Conversely, statistical work may reveal little about either intentions or the decision processes in a particular instance. A combination of approaches would therefore appear to be the optimal way forward, and that is the procedure adopted in this thesis.

1-2 Influence of Earnings Per Share (EPS)

The importance that is attached to EPS in the literature, is explored more fully in Chapter 2, although a brief overview at this point highlights the many studies that have commented on the importance of earnings. For example, Ball and Brown (1968) focused tightly on the bottom line; Lev (1989) stated 'earnings, the "bottom line", are widely believed to be the premier information item provided in the financial statements' page 155; and Tweedie and Whittington (1990) refer to 'the apparently excessive weight given by financial analysts to "bottom line" earnings figures and gearing ratios' page 97.

This perception appears to be widely held. In the Coopers Deloitte 'Shareholder Value Analysis Survey (1991)', the Investment Management Group was quoted as stating 'the traditional method of assessing a company was earnings per share growth, which was subject to tremendous "camouflage"', page 12.

This view is also reflected in the pronouncements of the Accounting Standards Board (ASB). The ASB has recently introduced Financial Reporting

Standard 3 'Reporting Financial Performance', in which the ASB seeks to remove the emphasis that has previously been placed on EPS and states 'It is not possible to distil the performance of a complex organisation into a single measure. Undue significance, therefore, should not be placed on any one such measure which may purport to achieve this aim' (para 52).

Although FRS 3 includes several key changes to the way companies' results are reported, it may not succeed in removing the emphasis given to EPS. The Institute for Investment Management and Research has already set up a committee to consider the principles under which 'maintainable EPS' could be calculated (maintainable earnings being the earnings attributable to the ongoing business). 'Maintainable EPS' would then be a key performance indicator which analysts would use to assess company performance. The idea of 'maintainable EPS' has its roots in such concepts as permanent income, or the Hicks' No.2 concept of income maintenance. However, in invoking these elemental income concepts, it should be borne in mind that it is the company dividend that provides the means of consumption and not the company's earnings.

The traditional functional fixation hypothesis (as posited by Ball (1972); Watts (1982); Watts and Zimmerman (1986)) is the view that individual investors interpret accounting information without regard for the rules used to arrive at the information. It maintains that investors can be misled by firms' accounting methods and choices. Given the investors' perceived preoccupation with short-term EPS as an indicator of company performance, it seems highly probable that the effect on EPS will be a key consideration in the debt-equity choice, i.e. there is functional fixation on short-term EPS.

1-3 The Research Question

The primary focus of this thesis is to address the question of the extent to which financing decisions can be explained on the basis of behaviour conditioned by financial reporting practices - in particular those relating to earnings per share calculation. Therefore the key point at issue is whether or not the debt-equity choice appears to be a function of financial reporting practice.

Such a view is echoed by Higson (1990) in the context of takeovers. He maintains "the evidence

is consistent with the hypothesis that accounting considerations affect the choice of means of payment in combinations" and "Though companies do appear to seek advantage through accounting means, the intriguing question.....is whether such advantage actually exists. It is hoped that future research can address the impact of the accounting choice on the firm's market capitalisation."

Although he points to the need for future research, Higson's analysis was concerned with mergers and acquisitions and the effects of SSAP 22 (Accounting for Goodwill) and SSAP 23 (Accounting for Acquisitions and Mergers), and did not attempt to deal with the financing choice, but confined itself to an historical analysis of the information.

In investigating particular financing decisions, it should be noted that data for the alternatives to the method chosen in any particular instance are not always readily available. For example, if a firm chooses to issue equity, the terms and conditions of alternative methods of finance at that particular time are not published in any form that allows easy assimilation and comparison. One particular contribution made in

this thesis is in the detailed reconstruction of the decision alternatives that were available to the firm's managers/directors at the time any particular issue was made. Thus the terms and conditions of alternative financing methods are investigated using contemporary published information.

The results of these investigations are then assembled with the intention of enabling valid comparisons of alternate financing methods to be investigated, with particular reference to the impact on EPS. Considerable care was needed to allow for the accounting treatment of different finance methods, the effects on taxation charges and the impact of prevailing economic conditions (particularly with respect to interest rates).

Research into the financing behaviour of corporations has traditionally concentrated on the normative aspects of finding an optimal set of rules to determine the preferred method of finance. Less emphasis has been placed on the influences of prevailing economic activity and policies of financial intermediaries which may, at a given time, force corporations into financing methods which, under more competitive conditions, the corporation may not regard as

optimal.

1-4 Organisation of the Thesis

There is a considerable literature looking at financing decisions both from the point of view of the relevant advantages of debt and equity issues and the equilibrium considerations of capital structure choice. This literature is reviewed in the context of the current research question in Chapter 2.

In Chapter 3 a survey of the attitudes of finance directors of companies which have made capital issues over the period 1985-1990 is conducted. The objective of Chapter 3 is to ascertain the factors which finance directors consider to be important in their capital issue decisions. In Chapter 4 an extensive analysis of the questionnaire responses is undertaken using factor and discriminant analysis. This provided more motivation for detailed study into the possibility of a fixation on EPS, by showing that financial information, and particularly short-run EPS, is important to capital issue decisions.

In Chapter 5, EBIT-EPS analysis is examined and the framework extended to incorporate

"elasticity" type risk measures. This analysis forms the basis of empirical work in Chapters 5, 7, and 8. The degree of financial leverage (DFL) and the degree of operating leverage (DOL), both potentially important explanatory variables in the debt/equity choice decision, are estimated using regression methods following procedures suggested by Mandelker and Rhee (1984).

In Chapter 6 reconstructions of the decision alternatives of a number of companies are made in order to investigate the hypothesis that financing decisions are made in a way which gives the highest short-run EPS. This involved assessing the impact of a hypothetical issue on the income statement of the firm. The impact is analysed in terms of the effect on EPS in Chapter 6.

In Chapter 7 the impact of the reconstruction in terms of capital and income gearing measures and also dividend cover is analysed. In addition, profiles of companies which had made particular types of issue, i.e. equity or debt, are examined in terms of their tax and cash flow ratios.

In addition, in Chapter 8 a probit model is formulated in order to find the independent

variables which have most influence on the dichotomous debt-equity choice. The independent variables used in the analysis include capital and income gearing ratios, interest cover, and dividend cover (for the year of issue and the year prior); estimates of DFL and DOL obtained by using time series regression, as well as those obtained on the basis of actual data and averaging; the industry sector, age and beta of the firm; and dummy variables for the type of capital issue, and whether the actual issue or the reconstruction gives the higher EPS for a particular company.

The final Chapter, Chapter 9, discusses the position reached, and the extent to which the study has been successful in showing that there is functional fixation on short-term EPS.

CHAPTER 2 : THE THEORY AND PRACTICE OF FINANCING DECISIONS

2-1 Introduction

The understanding of most subjects proceeds incrementally, with new ideas being debated at the frontiers of a core of generally accepted knowledge. Finance has less secure foundations: whereas the tools of analysis have broad acceptance, there is still no apparent consensus on the acceptability or dominance of the various theoretical paradigms. Even recent literature still contains a considerable amount of work on 'core' level theorising, and most empirical results can be made to sound plausible in the light of one or other theoretical paradigm. Even if this fails, anomalous results are sometimes rationalised in terms of ad hoc theories such as 'money illusion', 'debt capacity' or even the 'pecking order' hypothesis.

The absence of a dominant theoretical perspective could have one of two positive consequences. Either the types of financing decisions made are fairly randomly distributed between the alternatives (i.e. on the basis that the decision

outcomes are equivalent, or that any preference is justifiable); or some simple ground rules emerge for what is considered to be 'good practice'. In this chapter, the various viewpoints from the literature are discussed with the purpose of deciding which of these alternatives is the more likely consequence of the current state of analysis.

The main theoretical perspectives will be examined under the headings of fundamental analysis, taxation, asymmetric information (dealing mainly with agency theory), signalling, and functional fixation.

2-2 Fundamental analysis

2-2-1 Introduction

Fundamentalists believe in the existence of underlying value determining factors, and that careful examination of available financial data about a company will provide valuable information. By implication, where financial decisions are not indeterminate, there are 'optimal' (value maximising) courses of action for management to take.

The late 1950s and early 1960s were notable for the discursive paradigms expounded by, for example, Durand (1952), and for the pioneering analytical work of Modigliani and Miller (1958, 1963 and 1966).

In their famous 1958 paper, Modigliani and Miller (MM) put forward the view that the financial structure of a company is irrelevant on the basis of their analysis showing that the market value of a firm is independent of its debt/equity ratio. The arguments are essentially partial equilibrium in nature, in that for firms of equivalent risk class (i.e. equal business risk) the market value could not be altered by changes in capital structure since this would give rise to arbitrage opportunities. Essentially, the argument is that the value of an organisation is dependent on its 'real' assets and liabilities (and hence the earnings these generate), and not on the way these are financed. Thus the overall cost of capital reflects the return on these assets and for firms with similar business risk would be equal. MM's 1963 paper introduced the effect of the tax advantage of debt on the capital structure decision, with the implication that a company financed almost totally by debt had the best structure. This is because the tax

advantage of debt does affect the net cash flows generated, at least up to the point of tax exhaustion, although Miller (1977) suggests that the tax advantage may be considerably reduced because of equilibrium price considerations applied to debt finance.

In a recent review of their work published on the thirtieth anniversary of their seminal work, Miller (1988) makes two interesting points.

Firstly, he states 'the view that capital structure is literally irrelevant or that "nothing matters" in corporate finance, though still sometimes attributed to us, is far from what we ever actually said about the real world applications of our theoretical propositions', (page 100). Miller then went on to say '...Proposition II showed that when Proposition I held, the cost of equity capital was a linear increasing function of the debt/equity ratio. Any gains from using more of what might seem to be cheaper debt capital would be offset by the correspondingly higher cost of the now riskier equity capital. Our propositions implied that the weighted average of these costs of capital to a firm would remain the same no matter what combination of financing sources the firm

actually chose' page 100. Later in the paper Miller states '...our proposition that value was independent of capital structure at the individual firm level was never intended to suggest that the debt/equity ratio was indeterminate', page 102. Perhaps Miller is saying here that the original MM analysis was partial, because there is nothing in this paper which makes the debt/equity ratio determinate.

Secondly, the clearly evident disparity between the conclusions of their 1963 paper and the real world position where firms often had low debt levels, could be partially explained by the well-known costs of debt finance such as restrictive covenants and bankruptcy costs. However, Miller suggests 'for reducing the moral hazards and agency costs in the bondholder-stockholder relation, the undoing-of-leverage-blade in the original MM proof offered a clue: let the capital suppliers hold some of each, either directly or through convertible or exchangeable securities of any of a number of kinds', page 113. This would then enable firms to have high leverage and benefit from the associated tax savings without incurring prohibitive costs (asymmetric information and agency theory are discussed below).

These comments might be interpreted uncharitably as altering the original theory to fit in with observed behaviour over a number of years. Also, given the difficulties that have always existed in testing the Modigliani and Miller propositions empirically, Miller's remarks bring into question whether those propositions, with their perfect market assumptions, ever stood a realistic chance of trying to explain the real world financing decisions and capital structures of firms. Myers (1984), in his presidential address to the American Finance Association, refers to Modigliani and Miller's capital structure theory and states that the 'theories don't seem to explain actual financing behavior' page 575.

Miller (1988) reaffirms Myers' view when he states 'direct statistical calibration of the goodness of fit of the MM value-invariance propositions has not so far been achieved by us or others for a variety of reasons', page 103..

2-2-2 Evaluation of MM Position

Over the years many attempts have been made, both theoretical and empirical, to assess the robustness of the Modigliani and Miller irrelevance theory.

The empirical results of Chatterjee and Scott (1989) appear to reject the irrelevance theory. Chatterjee and Scott derived a theory of capital structure based on three deviations from the perfect market assumptions of Modigliani and Miller (1958), viz (i) a net tax effect, (ii) bankruptcy and bankruptcy costs, and (iii) an unprotected creditor effect. They confirmed the earlier findings of Warner (1977) and Ang et al (1982) that the fixed (explicit) costs of bankruptcy are not statistically significant but find strong explanatory power in the marginal (implicit) costs of bankruptcy - firms with high fixed asset intensity carry heavier debt loads, because of the floor that these assets create for potential bankruptcy costs to be borne by security-holders. This result would also appear to explain the inter-industry differences in debt ratios found by Schwartz and Aronson (1967) and Scott (1972). However, there could be other interpretations of Chatterjee and Scott's results - for example, long-term assets would tend to be financed or 'matched' by long-term finance, or it could be that the cost of assets in capital-intensive businesses means that they have to borrow to finance them.

Chatterjee and Scott's data also suggest a class

of unprotected creditors who provide a positive stimulus to the issuance of long-term debt, and that this stimulus is stronger than the net tax effect.

Titman and Wessels (1988) find that firms with unique or specialised products have relatively low debt ratios. Also smaller firms tend to use significantly more short-term debt than larger firms. This latter finding was consistent with that of Brealey, Hodges and Capron (1976) who found that large companies were more prone to issue debt (although this is not surprising in the U.K. because of institutional reasons). Titman and Wessels' model explains virtually none of the variation in convertible debt ratios across firms and finds no evidence to support theoretical work that predicts that debt ratios are related to a firm's expected growth, non-debt tax shields, volatility or the collateral value of its assets. They do however find some support for the proposition that profitable firms have relatively less debt relative to the market value of their equity.

Some of their results contradict Bradley, Jarrell and Kim (1984) who developed a model that synthesised the 'balancing theory' of capital

structure. Their model incorporated positive personal taxes on equity and bond income, expected costs of financial distress and positive non-debt tax shields. They showed, in a simulation analysis, that optimal firm leverage is related inversely to expected costs of financial distress and to the amount of non-debt tax shields. In the empirical part of their paper, they found that average firm leverage ratios are strongly related to industry classification and firm leverage ratios are related inversely to earnings volatility.

However it may be that some predictions from static capital structure theories may not hold, as these models ignore the firm's optimal restructuring choices in response to changing circumstances over time. For example, high-risk firms might have lower optimal debt ratios but adopt a more active debt management policy, thus counterbalancing the higher risk firm. A capital structure model set in a continuous-time framework might therefore have better explanatory power.

Such a model was developed by Fischer, Heinkel and Zechner (1989). Their model of dynamic optimal capital structure choice in the presence

of recapitalisation costs builds on the traditional tax/bankruptcy cost theory of capital structure relevance. They state that a firm pursuing an optimal financing policy offers a 'fair' risk-adjusted rate of return to its investors. Assuming that leverage is advantageous, the unlevered assets without debt-related tax shields must offer a 'below fair' risk-adjusted rate of return. The difference between the risk-adjusted rate of return on the unlevered assets and the total rate of return on the levered firm is due to the benefits from leverage. A firm choosing the optimal dynamic capital structure policy would seek to maximise this rate of return to leverage. The range over which a company allows its debt to vary is used as a measure of capital structure relevance. The resulting optimal dynamic capital structure policy depends upon the benefit of debt financing (for example, a tax advantage), potential costs of debt financing (for example, bankruptcy costs), underlying asset variability, the riskless interest rate, and the size of the costs of recapitalising. Smaller, riskier, lower-tax, lower-bankruptcy cost firms tend to exhibit wider swings in their debt ratios over time.

A model which obviates the need to invoke

concepts like bankruptcy cost, agency cost, asymmetric information and signalling is the cash flow beta theory of capital structure put forward by Ross (1985). The important feature of this model is that it is based on the interplay of cash flow, uncertainty and taxes. The cash flow beta is the regression coefficient of the firm's cash flows before interest and taxes on an aggregate price level. He finds that for firms of similar cash flow variance, there will be an inverse relationship between financial leverage and cash flow beta.

Empirical support for Ross' cash flow beta theory is provided by Sugrue and Scherr (1989) but this support depends upon the sample period and the leverage specification. This would suggest that equilibrium models of capital structure should be tested using relatively long estimation periods to lessen the effects caused by firm's short-term response to economic conditions.

Whilst many attempts have been made over the years to derive a theory of capital structure, no one theory predominates. A common feature in many of these models, emphasised to a greater or lesser degree, is that the amount of debt that a business will employ is related to the tax

shields and bankruptcy costs.

2-3 Taxation

2-3-1 Introduction

There are certain tax advantages to debt in as much as the interest on debt is an allowable expense for tax purposes.

The seminal work of Modigliani and Miller(1963), in which they introduced the tax advantage of debt into their model of the impact of capital structure on the firm's financing value, has led to much theorising about the role of taxation in determining the financial policy of the firm. According to Modigliani and Miller, any firm could increase its total market value by increasing the amount of debt in its capital structure (presumably up to the limit of tax exhaustion). Miller (1977) finds an equilibrium analysis at the level of the market as a whole and not of the individual firm. Taking into account both corporate and personal taxes, he goes back to the original MM decision, that capital structure decisions by the firm are irrelevant, i.e. changes in capital structure have no effect on the firm's total valuation.

Miller's model suggests that in market equilibrium, personal and corporate taxes cancel out.

DeAngelo and Masulis (1980) showed that the net tax advantage to debt would in equilibrium be low but positive, exactly offsetting marginal bankruptcy costs. Brick and Ravid (1985) presented a tax-induced framework to analyze debt maturity problems. They found that an increasing term structure of interest rates, adjusted for default risk, usually results in long-term debt being optimal, whereas a decreasing term structure renders short-term debt optimal. This may explain why long-term debt may be issued even though from agency considerations, short-term debt is often optimal (Barnea, Haugen and Senbet, 1985). The problem is that the term structure can change very quickly.

There have been many empirical studies carried out both in the U.S. and the U.K. since Miller's 1977 paper. The results have been inconclusive and often contradictory. Myers (1984) stated 'I know of no study clearly demonstrating that a firm's tax status has predictable, material effects on its debt policy.', page 588.

2-3-2 U.K. Tax Studies

In his book 'Public Policy and the Corporation', King (1977) tried to investigate the relationship between the values of various tax incentive variables (eg. tax relief for debt interest) and the actual pattern of corporate financing in the U.K. over the period 1947-1971. He reported that 'a reasonable picture of the determinants of the debt-equity ratio of U.K. industrial and commercial companies can be obtained from a simple model relating the target debt-equity ratio to the tax incentives to the use of debt finance, and to the amount of takeover activity going on in the economy', page 226. King's model is given by:

$$d_t = \alpha_0 + \alpha_1 V_B + \alpha_2 V_C + \alpha_3 d_{t-1}$$

where

d_t = debt-equity ratio

$$V_B = [\theta(1-\tau) - (1-m)]$$

$$V_C = [(1-m) - (1-z)(1-\tau)]$$

- m = marginal rate of income tax on
unearned income
- z = accrued capital gains rate of
taxation
- t = corporation tax rate

King concluded that other factors such as uncertainty and bankruptcy costs, which the above model does not take account of, also play a role in the firm's choice of financing policy.

Subsequently Rutterford (1986) investigated the effects of corporate and personal taxation on company capital structure. She developed a model of the effects on firm value of an increase in corporate gearing, under the assumptions of perfect capital markets but allowing for both investor and corporate taxes. The model was defined as:

$$\frac{\Delta S_0^0 *}{\Delta B_0} = \frac{(1-t_{pd}) \beta_d}{\beta_u (1-t_g)} - \frac{(1-t_g) \beta_u}{(1-t_{pb})}$$

and:

$$\frac{(\Delta S_0^0 *)}{\Delta B_0} = 1 - \frac{(1-t_g) \beta_d}{(1-t_{pb})}$$

where S_0 = ex-dividend value of all the shares
in the firm

B_0 = amount of debt

t_{pd} = personal tax rate on dividend income

t_g = tax rate on gains

B_u = the net of corporate tax profits
where profits are undistributed

B_d = the net of corporate tax profits
where profits are distributed

These equations gave the change in the value of shareholders' equity for each additional unit of debt raised at time 0. The values of the right hand side are the "tax advantage of debt" under any tax system. Rutterford derived these values for the U.K. tax system 1930 to 1980 using one or other of the above equations according to the optimal dividend policy of each particular tax system.

She claimed that the model allows for the interaction of optimal dividend policy and optimal debt policy of the firm. This, of course, brings into question the basis on which 'optimality' is defined. It turns out that 'optimal' covers a range of possible alternative policies depending on the period in time as

different tax regimes impacted on what was 'optimal'.

Rutterford stated 'the results of the tests provide little evidence, after allowing for measurement differences, in support of a significant role for taxes in company choice of debt-equity ratios', page 2 and 'the role of corporate and personal taxes as major determinants of U.K. company capital structure is found to be generally not significant', page 548.

Lasfer (1987) develops a model of optimal debt capacity; under this model the firm's debt to equity ratio is hypothesised as being determined by the asset base, the corporation tax rate and risk. His model can be expressed algebraically as:

$$OD_t = \beta_0 + \beta_1 A_t + \beta_2 OD_{t-1} + \beta_3 Tax_t + \beta_4 Risk_t + e_t$$

where:

OD_t = the firm's outstanding debt at time t

A_t = the firm's net assets at time t

Lasfer tries to model the effective marginal corporation tax rates and not use a proxy - thus alleviating one criticism that could be made of Rutterford (1986), as unlike her, Lasfer

estimates the effective marginal corporation tax rate for each company in his sample (88 firms), thus identifying the companies that are tax-exhausted.

Lasfer also seeks to analyse the effects of personal income taxation on dividend distribution, viewing the decision on whether to distribute or not, as a function of the marginal personal income tax rates of the firm's shareholders. His evidence in this area is rather patchy. The results of Davidson and Mallin (1989) show some evidence for a weak tax based clientele effect that appears to operate for firms with high annual dividend yields, but overall they suggest that ex-dividend value changes may have little implication for long-term tax-induced effects on security prices. The direct evidence of Lewellen et al (1978) is also only very weakly supportive of any clientele effect.

Lasfer concludes 'companies do not appear to select their debt levels randomly but rather take account of their tax position, level of risk, assets base and the market expectations reflected

in Tobin's q .¹ Companies that are tax exhausted are found to have significantly lower debt ratios than those in a tax paying position', page 19. His results therefore support the view that a target debt-capital ratio is a function of the tax exhaustion position, the required rate of return by shareholders and the level of interest rates. It appears that a company that is tax-exhausted and therefore cannot take advantage of the tax shields prefers to finance its investment projects using new issues or retained earnings.

Lasfer's results may be subject to certain econometric considerations and interpretational differences. For example, serial correlation in the error term of his partial adjustment model, simultaneous equation bias and spurious correlation.

Ashton (1989) argued that under the present U.K. tax system, the theoretical advantage afforded by debt should be estimated at no more than 13% of the debt's market value. In a later paper (1991), Ashton extends and corrects his earlier

¹Tobin's q is defined as the ratio of market value of equity to the replacement cost of net assets. For the former Lasfer used the product of the average price of equity for the corresponding year by the number of shares adjusted for new issues, whilst for the replacement cost of net assets he used fixed assets, stock and work-in-progress.

paper, dealing now with the case of non-constant earning streams. He makes the crucial assumption that dividends are irrelevant for tax purposes (a rather strong assumption), as if they were not the tax advantage to debt would depend on the pattern of financing through time. He also assumes the existence of quite simple relationships between weighted averages of marginal personal tax rates. He sums up 'we can fairly confidently conclude that under the current U.K. Imputation Tax System, any tax advantage to debt finance is likely to be small. As such, the role played by taxation in shaping the financial policy of the firm is likely to be minor rather than major', page 480.

However, Dempsey (1991) draws attention to the market spread between borrowing and lending which constitutes a 'cost' for corporate borrowing and finds that, in the context of the present U.K. tax system, this 'cost' of borrowing is sufficient to nullify entirely the perceived tax benefits of corporate borrowing. He concludes that at present corporate borrowing could imply a net disadvantage for the valuation of a company's equity by about 6% or 7% of the debt's market value.

2-3-3 U.S. Tax Studies

Studies that have been carried out on U.S. data and in the context of the U.S. tax system, which differs significantly from the U.K. system, have tended to find that there is a substantial advantage to using debt finance. The value added to a company by debt has been estimated as high as 35% to 50% of the debt's market value according to Dempsey (1991), page 221.

Feldstein (1989) recommended replacing the current corporate income tax with a cash flow corporate income tax in order to reduce the incentive for the excess use of corporate debt. This could be achieved by dispensing with the deductibility of interest expenses and allowing an immediate write-off of all investment in plant and equipment.

MacKie-Mason (1990) pointed out that the desirability of debt finance at the margin increases with the firm's effective marginal tax rate on deductible interest. He found 'clear and substantial tax effects', page 1488. He thought most tax shields would have a negligible effect on the marginal tax rate for most firms, so he studied the incremental financing choices made by

firm managers. The actual decisions, made at the margin, would provide more powerful tests than the studies of debt/asset ratios because the ratios reflect the outcomes of many decisions made over a number of years. Secondly, tax shields affect the value of incremental debt insofar as they lower the effective marginal tax rate on interest deductions, and it is only for firms that are already close to tax exhaustion for whom tax shields have a large marginal effect. His results supported this view as they showed that a firm with high tax shields, already exhausted (with loss carryforwards) or with a high probability of facing a zero marginal tax rate, is less likely to finance with debt.

In summary there is no real consensus arising from the tax studies carried out in the U.K. and the U.S. on the advantages of debt. However it would appear that tax exhausted companies are less inclined to issue debt.

2-4 Agency Theory

2-4-1 Agency Costs

Agency theory is concerned with costs that arise due to conflicts of interest. Jensen and

Meckling (1976) identify three main costs : monitoring costs, bonding costs and residual loss.

Monitoring costs might include restrictive covenants on debt finance, and the higher the level of debt, the more restrictive these covenants may be. This can lead to residual loss because the company may be constrained in its activities and so may not meet its competitive ideal. Monitoring costs are also apparent in rights issues, as Smith (1977) showed - although rights issues involve significantly lower costs than underwritten offerings, underwriters were involved in over 90% of the offerings. Smith's explanation is that the use of underwriters reduced overall monitoring costs.

Bonding costs are incurred when the agent agrees not to engage in certain activities which could be to the detriment of the principals (for example, an agent may agree not to deal with one of the firm's competitors). Bonding costs act as a signal that the agent is bona fide.

Residual loss is a measure of the extent to which the firm does not behave in a way that is optimal for the principal. This type of behaviour

relates a priori to the extent of separation and control (because of conflicts that arise between managers and shareholders, where managers hold less than 100% of the residual claim), but it is possible that highly restrictive debt covenants could, also, lead to suboptimal behaviour.

These costs arise in the corporate context because of conflicts between shareholders and managers where managers hold less than 100% of the residual claim to the firm's equity. In this situation managers may act in a manner that is suboptimal to the shareholders, as rather than investing more time and effort into profit enhancement activities, they may prefer to transfer firm resources to themselves in the form of perquisites, such as company cars, luxurious offices, etc. However the larger the manager's share of equity, the less prone he is to act in this way. By financing investment by debt and holding the manager's share of equity constant, the loss between the managers and shareholders can be mitigated.

There is also a conflict that may arise between equityholders and debtholders because the debt contract gives equityholders an incentive to invest suboptimally. For example, the lower the

proportion of equity, the higher is the inducement for ordinary shareholders/managers acting on their behalf, to invest in risky projects, reducing the value of debt. However if the debtholders correctly predict at the time of issue of the debt that this suboptimal behaviour may occur, then the equityholders will receive less for the debt than they otherwise would. So, the cost of the incentive to invest in value-decreasing projects created by debt is borne by the equityholders who issue the debt. This is known as the 'asset substitution effect' and is an agency cost of debt financing.

In addition there is the moral hazard problem which may arise when one contracts to act in a particular way, but if there is no check on it, it is possible to renege. This is distinct from the problem of adverse selection, an example of which is the insurance industry where the people who choose to insure may well be those that are at particular risk. Adverse selection is ex-ante information asymmetry, whereas moral hazard is ex-post information asymmetry. They can occur when the actions of the agent are unobservable.

2-4-2 Conflict Between Managers and Investors

Jensen and Meckling (1976) argue that an optimal capital structure can be obtained by trading off the agency cost of debt against the benefit of debt. Fama (1980) also argued that managerial incentive problems (i.e. those usually attributed to the separation of security ownership and control of the firm) could be resolved given a competitive market for management (a very 'Chicago' oriented approach). Agrawal and Mandelker (1987) found that there was a positive relationship between the security holdings of managers and the changes in firm variance and in financial leverage. It would seem that executive holdings of common stock and options in the firm have a role in reducing managerial incentive problems, i.e. if managers have an equity stake in the business they are less likely to indulge in behaviour which may harm the returns on equity.

Kim and Sorensen (1986) find that firms with higher insider ownership have greater debt ratios than firms with lower insider ownership. This finding is ambiguous. It may be explained by agency costs since high insider ownership firms may issue debt in order to remain as high insider ownership firms because of the costs of outside

equity. Alternatively, more debt may be issued by high insider ownership firms because the agency costs of outside debt decline with ownership concentration. Their other findings show that high-growth firms use less debt rather than more debt, high-operating risk firms use more debt rather than less debt, and firm size appears to be uncorrelated to the level of debt.

An interesting variation is provided by Hirshleifer and Thakor (1989) who considered a situation where managers have an incentive to pursue relatively safe projects out of a concern for their reputation. Faced with a choice of two projects, each with only two outcomes, success or failure, managers would choose the safer project if it had a higher probability of success. This reduces the agency cost of debt, so if managers are susceptible to a reputation effect, the firm would be expected to have more debt than otherwise.

Harris and Raviv (1990) provide a theory of capital structure based on the effect of debt on investors' information about the firm and on their ability to oversee management. They contend that managers do not always behave in the best interests of their investors and so need to

be disciplined. Debt serves as a disciplining device as default allows creditors the option to force the firm into liquidation. Also debt generates information that can be used by investors to evaluate major operating decisions including liquidation. The optimal amount of debt is determined by trading off the value of information and opportunities for disciplining management against the probability of incurring investigation costs.

Stulz (1990) also concentrated on the conflict between equityholders and managers, and his optimal capital structure is determined by trading off the benefit of debt in preventing investment in value decreasing projects against the cost of debt in preventing investment in value increasing projects. As in Jensen (1986), firms with an abundance of good investment opportunities can be expected to have low debt levels relative to firms in mature, slow-growth, cash-rich industries. Stulz argues that managers will be reluctant to implement the optimal debt levels but are more likely to do so the greater is the threat of takeover.

There is also some evidence that the presence of outside third parties moderates agency-related

costs of debt and equity.

Slovin, Sushka, and Hudson (1990) demonstrate that the market reaction to announcements of seasoned stock offerings varies with the presence of outside agents (accounting firms, commercial banks and underwriters) who monitor the firm. The presence of substantial bank debt in a firm's capital structure and the use of a high-reputation investment banker would appear to mitigate the negative effect of equity issuance. In an earlier paper, Moyer, Chatfield and Sisneros (1989) found some support for the role of analyst monitoring as an efficient device for controlling agency-related costs of debt and equity.

2-4-3 Conflict between Equityholders & Debtholders

One aspect of agency theory which has received considerable attention is the conflict between equityholders and debtholders.

Green and Talmor (1986) explicitly examined the incentive for asset substitution by solving endogenously for the optimal risk policy. Their results supported the notion that more debt

increases shareholders' incentives to take risk. Conversely, Gavish and Kalay (1983) found that stockholders' incentive to increase the investment's risk is not an increasing function of the leverage ratio, i.e. the increase in shareholder wealth does not depend monotonically on the leverage ratio.

Diamond (1989) posited a model concerned with a firm's reputation for choosing projects that assure debt repayment. The longer a firm's history of repaying its debt, the better its reputation and the lower its borrowing cost (reflected, for example, in Standard and Poor/Moody's AAA bond rating). An older, more established firm would find it optimal to choose the safe project (and not engage in asset substitution) to avoid losing a valuable reputation. Firms with long track records will therefore tend to have lower default rates and lower costs of debt than firms with brief histories.

Brennan and Dunlop (1991) were concerned with the adverse selection problem of a firm that must sell new equity in order to finance an investment project, when there is also a managerial agency problem of over-investment. They show that it

may be efficient for a firm to issue a class of shares that are partly paid or assessable. Their findings show that management does not maximise the interest of one class of investors (stockholders) at the expense of the others (bondholders). This is in accordance with Haugen and Senbet (1981) and (1988) who suggested that the risk incentive problem may be solved through complex financing contracting (for example, the inclusion of call or conversion provisions in debt). However, Narayanan (1987) argued that convertible debt does not solve the perquisite consumption problem, and that callable debt might also not mitigate that particular problem as management is retaining a call option.

The rapid growth of finance which is strictly neither debt nor equity in the traditional sense, may prove to have been instrumental in reducing the usual perceived conflicts between managers and shareholders on the one hand, and shareholders and debtholders on the other.

Brick and Ravid (1985) argued that in the presence of a rising term structure of interest rates, long-term debt, with appropriate call and convertible features, may play a role in maximising the tax benefits of debt and

simultaneously resolving agency conflicts which arise due to informational asymmetry and moral hazard. Such arguments are in line with the analysis developed by Hirshleifer (1971) who argued that the various features of different financial liabilities contribute to market completeness and can lead to higher overall valuation. It can be seen, for example, that different types of secured position will have an effect on the value of debt, given bankruptcy costs.

2-4-4 Economic Consequences

Research from the economic consequences viewpoint also has agency implications. For example, Holthausen and Leftwich (1983) looked at the effect of contracting and monitoring costs on accounting choice. This economic consequence approach predicts that particular accounting methods are chosen because they affect firms' cash flows. Empirical tests of economic consequences reveal systematic associations between accounting technique choices and firm size, a proxy for political visibility, and leverage, a proxy for contracting costs. These results are, however, difficult to interpret as there is little evidence for these proxies.

Malmquist (1990) and Mian and Smith (1990) both take an efficient contracting view of the world. Malmquist's work is based on the premise that accounting methods are chosen to enhance the efficiency of contracting and monitoring arrangements. Mian and Smith conjecture that the more interdependent the subsidiary's activities are, the more likely the financial statements will be presented on a consolidated basis. The strength of the two papers is in their attempt to structure a set of tests which assume that accounting methods are chosen to increase the efficiency of contracts in monitoring the conflicts of interest among agents in the firm.

Recent work by Mangos (1991) advances a theoretical framework which incorporates the contractual links which exist between managers and shareholders, and managers and debtholders, but also incorporates the political visibility factors that he feels are associated with accounting choice. Mangos and Lehman (1991) state that contracting costs should be overtly integrated with political costs instead of treating them as a hidden agenda.

To conclude the review of the literature in this section a pertinent comment is that it is

difficult to formulate testable hypotheses in agency theory, even though it has a theoretical strand, in addition to a discursive one. This is, in essence, a problem of the data as ideally cross-sectional data are needed, relating to firms which are highly similar except with respect to their ownership structure. Walker (1989) examines the empirical testability of agency theory from a falsificationist perspective and also argues that agency models involving pre-decision information are practically devoid of empirical content.

It would seem then that agency theory is not capable of providing an empirically testable explanation of capital structure.

2-5 Pecking Order Hypothesis

Myers and Majluf (1984) put forward the concept of a modified pecking order theory whereby firms would finance investment by internal funds as first preference, then by debt and, as final choice, equity. The theory is essentially ad hoc but can be viewed as building on the empirical work of Donaldson (1961) who had studied the financing practices of a sample of large corporations and found that management favoured

internal sources of finance but if external funds were sought, debt was favoured over equity.

This pecking order is partly attributed to the effects of asymmetric information - as when equity is issued there is often a fall in the share price as the market would appear to think that if the company is issuing equity, management must believe that the shares are over-valued. This has been supported by several studies, including those by Korwar (1983), Asquith and Mullins (1986) and Mikkelson and Partch (1986). Debt often has the drawbacks of restrictive covenants and other monitoring costs, but is generally still preferable to equity because of associated tax advantages and lower issue costs. Funding from internal sources does not carry any of the afore-mentioned costs.

Although Baskin (1989), Krasker (1986) and Narayanan (1988) found empirical evidence of the pecking order hypothesis, Brennan and Kraus (1987), Noe (1988) and Constantinides and Grundy (1989) dispute the pecking order result in models similar to that of Myers and Majluf. Also other theoretical signalling models, such as Ross (1977), Leland and Pyle (1977) and Heinkel (1982) do not obtain a pecking order result. Myers

himself (1984) had summed up the modified pecking order theory by stating that it 'depends on sticky dividends, but does not explain why they are sticky. Second, it leaves us with at best a fuzzy understanding of when and why firms issue common equity' page 590. On balance, it would seem that the Myers and Majluf pecking order model is at best only a partial explanation.

2-6 Signalling Theory

2-6-1 Introduction

Signalling theory is based on information asymmetry and the existence of a well behaved signalling cost function which forms the basis for an equilibrium model of signalling behaviour.

The foundations of signalling theory were formalised by Akerlof (1970) and Spence (1974), the latter concentrating mainly on the use of education as a signal in the labour market.

In his 'market for lemons' article, Akerlof (1970) suggested that firms could give guarantees etc. as signals of quality. There are many markets in which buyers use some market statistic to judge the quality of prospective purchases.

There is an incentive for sellers to market poor quality merchandise, since the returns for good quality accrue mainly to the whole group whose statistic is affected rather than to the individual seller. Akerlof cited the second-hand car market as an example - the bad ones, 'lemons', still get sold as it is very difficult to differentiate between the good cars and the bad ones. Akerlof suggests that the sellers of good cars could give guarantees on them, to try to counteract the effects of quality uncertainty on the purchaser. Other ways of counteracting the effects of quality uncertainty might be through brand names, or licensing practices.

Spence (1974) wrote of the concept of a signal being the observable attribute upon which the employer makes judgements about individual productivity, for example, education. The signal is read, interpreted in the light of past experience and reacted to accordingly. An equilibrium is reached when the employer's beliefs concerning the relation between the signal and the productivity are confirmed by his experience in the market.

A signal is characterised by the following:

- (i) it is discretionary

(ii) it has a cost

(iii) the costs increase with the amount of the signal

(iv) the costs at the margin are negatively correlated with the value determining factor being signalled

(v) experience must confirm the signal (i.e. there is reinforcement of the signal)

In relation to point (ii) above, generally signalling must have a cost, but in certain circumstances it is argued by some authors, for example, Heinkel (1982), that signalling can be costless. Subsequently, Franke (1987) cited two conditions for costless signalling - the outsider rationality condition and the no-arbitrage condition. However, the concept of costless signalling is not intuitively appealing and does not lend itself to empirical proof.

Riley (1975) and (1979) argued that sellers of high quality products have an incentive to engage in some distinguishing activity which operates as a signal to potential buyers. He showed that there is a unique reactive informational equilibrium and argued that stability can be achieved by building into the equilibrium concept, a recognition of possible reactions by

other agents. The transfer of information via markets can be explained as a non-cooperative equilibrium phenomenon. In essence, Riley's contribution is basically to formulate mathematically the nature of equilibrium response but his framework is essentially that adopted by Spence.

There have been two approaches to the signalling implications of financial structure. The work of Ross (1977) and Leland and Pyle (1977) concentrated on the theory that the choice of a firm's capital structure signals to outside investors the information of insiders. The work of Myers and Majluf (1984) and Myers (1984) viewed capital structure as being designed to mitigate inefficiencies in the firm's investment decisions that are caused by the information asymmetry. These are discussed below.

2-6-2 Ross Interpretation of Signalling

Ross (1977) stated that the choice of a managerial incentive schedule and of a financial structure signals information to the market, so the value of a firm will rise with leverage since increasing leverage increases the market's perception of value. However, increasing debt

levels increase bankruptcy costs, and furthermore the better management is, the lower the expected bankruptcy costs per unit of debt at any given debt level. Thus better companies would, in equilibrium, finance themselves with more debt.

Ross (1977) argued that leverage was positively correlated with firm value, whilst Leland and Pyle (1977) argued that leverage was positively correlated with the extent of the managerial equity ownership. Ross' findings were supported theoretically by Noe (1988), Narayanan (1988) and Poitevin (1989), and empirically by Lys and Sivaramakrishnan (1988), Cornett and Travlos (1989) and Dann et al (1989). Conversely, Leland and Pyle's analysis was supported empirically by Kim and Sorensen (1986), Agrawal and Mandelker (1987) and Amihud et al (1990), but was not supported by Friend and Hasbrouck (1988) and Friend and Lang (1988). The empirical evidence would therefore seem to be inconclusive.

2-6-3 Myers & Majluf Interpretation of Signalling

A further aspect of the Myers and Majluf (1984) paper mentioned previously is the assumption of asymmetric information between shareholders and management. The method of raising finance acts

as a signal of the firm's value. There is a 'pecking order', whereby firms' preferences for the method of finance are inversely related to the securities' price sensitivity to firm performance.

The empirical studies of Chaplinsky and Niehaus (1990) and Ahimud et al (1990) supported this theory, whilst Korajczyk et al (1990) did not. Recent work by Bayless and Diltz (1991) extended and elaborated on Myers and Majluf (1984) to produce a set of specific predictions for the impact of asymmetric information on the entire security offering process (i.e. for the choice of security, the timing of the issue and subsequent market reaction). Their findings provide support for Myers and Majluf, showing that equity issues tend to occur following increases in a firm's stock price, while debt issues are observed for firms with relatively large amounts of financial slack or when issue size is large relative to firm size.

Williams (1988) provided some support for Myers and Majluf, arguing that in an efficient signalling equilibrium, firms should finance their real investments first from internal funds. However, he found that the second choice of

finance would be from the sale of new stock to outside investors, in contrast to Myers and Majluf, who found that "the firm never issues equity when it has the option to issue debt, regardless of whether the firm is over-or undervalued", page 197.

Blazenko (1987) ,like Myers and Majluf (1984), follows the general assumption that financial signalling is less than fully revealing - neither the signal itself nor the investors' ability to interpret the signal is perfect. Blazenko argues that if firm performance affects managers' wealth or reputation, preferences of managers dominate firms' financing decisions. When managers know more about asset quality than do investors, and if managers are sufficiently risk averse, they signal high quality projects with debt. Conversely, when information about asset investment is symmetric, managers finance exclusively with equity.

John (1987) also lends support to the theory that debt can be a favourable signal. He found that although increasing risky debt also increases agency costs, the signalling effect leads to a favourable re-evaluation of the firm by the market.

An equity issue is viewed as a negative signal, as it is felt that equity is only issued when the price is high. Asquith and Mullins (1986) looked at signalling with dividends, stock repurchases and equity issues. They found that over 80% of their sample experienced a price decline on announcement of the equity issue, and that the size of the price decline was directly proportional to the size of the equity issue. Similarly, Mikkelson and Partch (1986) found that an offer of common stock or convertible debt is a signal that stock is over-valued.

Hess and Bhagat (1986) also found that the share price drops on announcement of a new issue of common-stock, the fall being associated either with the size of the issue relative to the number of shares previously outstanding or to bad news about shareholder returns being signalled by the announcement.

This perceived negative view of equity issues is also apparent in the findings of White and Lusztig (1980) who noted a drop in share price on announcement of a rights issue, although they had acute small sample problems. It would seem that on average investors believe that there is negative information associated with a rights

offering. Davidson and Mallin (1992) noted that the reason for the rights issue affects the amount of the price drop on announcement of the issue. Also in relation to rights issues, Heinkel and Schwartz (1986) found that the choice of method of rights issue (underwritten, uninsured or insured) could act as a signal revealing the quality of the firm. However, this analysis is partial in that debt issues were not considered.

Tinic (1988) argued that the underpricing of initial public offers serves as an efficient form of insurance against potential legal liabilities of issuers and their agents. However it is worth noting that some of the results are also consistent with models of underpricing based on asymmetric information.

Subsequently Krinsky and Rotenberg (1989) looked at the relationship between entrepreneurial ownership retention and the initial value of unseasoned common shares. They found that the entrepreneurial signal is not found to possess statistical significance.

A recent study by Schadler and Moore (1992) confirmed that firms' decisions to issue equity

result in significant adverse price reactions; whilst a decision to issue straight non-mortgage debt results in no significant stock price reaction. They posit that the predictability (from an investor's point of view) of a particular type of issue may result in differential price reactions. Their model uses seven variables which they perceive proxy for the information set used by investors to form their probabilities of security type. Their explanatory variables fell into three categories:

- (i) those relying on the existence of a target capital structure. These comprised a target long-term debt ratio, and two measures of operating risk - a financial distress measure and fixed asset financing measure,
- (ii) those dependent on existing market conditions. These comprised measures of equity market conditions and debt market conditions,
- (iii) those relating to the actual issuing of securities. These comprised a target short-term debt ratio and a firm size measure.

They find that their model correctly predicts, as being debt or equity, 77.65% of their sample.

They conclude that market participants can also predict the type of issue; and that predictability of issue type is partially responsible for the differential effect on stock price. They state that the discriminatory power might be improved by choosing different variables. Interestingly the probit model developed in Chapter 8 would appear to have slightly better classificatory power.

Harris and Raviv (1985) found that, in equilibrium, a decision to call on convertible debt is perceived by the market as a signal of unfavourable private information. This information-signalling hypothesis is supported by the findings of Ofer and Natarajan (1987) who find that bad news is manifested in that firms calling their convertible bonds experience an unexpected decline in performance in the years following after the call.

Acharya (1988) builds a generalized economic model with two possible discrete signals and uses it to test whether firms signal their true value by forcing or not forcing an outstanding convertible bond. He concludes that the call-announcement signals of the managers are partially anticipated.

An interesting idea is put forward by Stein (1992) who argues that convertible bonds are 'backdoor equity financing', and that companies may find them attractive as a middle ground between the negative informational consequences associated with an equity issue and the potential for costly financial distress associated with a debt issue. A company issuing a convertible with an early call provision can circumvent to some extent the adverse price impact of a common stock offering.

The review of the literature from a signalling perspective would seem to provide a theoretical consensus favouring debt over equity.

The main arguments are:

- (i) debt levels are seen as signals of management ability (Ross, 1977); and
- (ii) the issue of new equity can be construed as a signal that equity is over-priced (Asquith and Mullins, 1986)

A certain amount of empirical evidence is consistent with this view (Mikkelson and Partch, 1986), but such findings may also be rationalised from a fundamental perspective in that equity finance provides a lower tax shield effect.

Attempts to establish the existence of signalling behaviour for other financial variables (for example, dividends) have not been very successful, and indeed, sometimes counter-intuitive (Eades, 1982).

2-7 The Importance of Earnings

2-7-1 Influence of Earnings

Earnings have been perceived as a key indicator of company performance for many years.

It was mentioned in Chapter 1 that Ball and Brown (1968) focused tightly on the bottom line, although there are many other numbers in the financial statements. Brown (1989) reviews Ball and Brown (1968) and the research in that area since then. Regarding the importance of these other items, he states 'one conclusion being that there may not be a whole lot more to be said, once earnings had been accounted for' page 207.

Further support for this view comes from Gonedes (1974), who looked at six ratios, including working capital/total assets, financial leverage, the asset turnover rate, cash flow to debt plus preferred stock, the accounting rate of return,

and EPS. He concluded that the numbers, jointly, were uninformative and that, given EPS, the other six explained little.

Similar findings were obtained by Castagna and Matolcsy (1989) who stated 'given the information content of earnings per share or net profit, the marginal information content of some "supplementary" financial items appear to be zero, and given the information content of some "supplementary" financial items the marginal information content of earnings per share or net profit appears to be non-zero' page 318.

In fact the importance of earnings was also stressed by Lintner (1956) in his classic paper on dividends, when he stated that current net earnings met the condition, better than any other accounting variable, of being of importance to stockholders and the financial community generally, of being reported frequently and receiving wide publicity in the press, and that 'most officers and directors regarded their stockholders as having a proprietary interest in earnings' page 100.

Lev and Ohlson (1982) state 'Accounting data convey useful and timely information to

investors. While this conclusion definitely holds for earnings data, the marginal contribution of the voluminous nonearnings data published in financial reports is still largely unknown' page 250.

Lev (1989) stated 'earnings, the "bottom line", are widely believed to be the premier information item provided in the financial statements' page 155. Kay and Mayer (1986) stated 'the information most commonly used to assess profitability concerns the earnings of a firm or an industry over some finite segment of its life' page 200.

Arnold and Moizer (1984) examined the way that analysts assess companies. They found that initially the analysts look at a one step ahead earnings forecast for next year; then they apply an 'appropriate' P/E ratio. This means that, mutatis mutandis, the higher the EPS, the higher will be the analyst's fundamental valuation. Therefore it provides a good argument for the directors of a company to report the highest EPS figure as that will lead to the highest valuation being imputed by analysts.

Analysts want to make a profit in the short-term

and believe that the price will react to the next earnings announcement. However one fundamental fault with this line of thinking is that earnings are an unreliable predictor of both future earnings and future market value. Rappaport (1986) reports that companies may achieve positive earnings growth rates yet their shareholders realise negative rates of return.

More recently Gniewosz (1990) looked at the use of accounting and other information in the share investment decision process of an institutional investor, and the major factor that was emphasized was earnings per share. Similarly, Reimann (1989) stated 'Perhaps the most commonly accepted gauge of corporate financial performance is that of historical (and projected) growth in earnings per share' page 17.

Marsh (1990), in his report on short-termism, cites a survey by 3i which found '....81 percent [of UK finance directors] believed that EPS was the main basis for the valuation of share prices, and 91 percent felt that the City had been justifiably criticised for being too focussed on short-term earnings', pages 28-29.

Tweedie and Whittington (1990) recognise this

when they mention 'the apparently excessive weight given by financial analysts to "bottom line" earnings figures and gearing ratios' page 97. A similar view is expressed by Holmes and Sugden (1992) "the real trouble with the present regime is the overriding importance placed on earnings per share per se", page 29. .

The impact of this emphasis on earnings per share is very real for companies, as Williams (1991) affirms 'Having experienced the full wrath of the market following a set-back in our earnings per share..... Whether the practitioners within the equity market like it or not, its actions are often perceived as short termist and their effects, however imperceptible and intangible the mechanics of cause and effect may seem within "the City", may be very real', page 35. The short termist view is echoed by Brealey (1991) '....the notion that investors are short termist and that this is damaging British industry has now become a fundamental part of our culture and I suspect that nothing I or other economists can say will shake this view', page 8.

In a more practical paper, Chow, Gritta and Hockstein (1988) made a useful study of the effects of 12 U.S. airlines' financial decisions

on EPS. They found that three of the airlines evidenced significant negative impacts on EPS as a result of their financial policies. As a result of their increased leverage and the increased volatility of earnings, these airlines were unable to compete successfully in the deregulated environment. However, the remaining nine carriers managed the transition by altering their financial policies accordingly - these carriers tended to issue securities in such a way as to maintain a conservative to average capital structure, which served to maximise the apparent return to shareholders (as measured by EPS).

An important point to remember about a firm's earnings is the effect of accounting procedures on them, as Canning (1929) observed 'What is set out as a measure of net income can never be supposed to be a fact in any sense at all except that it is the figure that results when the accountant has finished applying the procedures which he adopts' page 98.

From this review of the perceived influence of earnings, it is clear that earnings are viewed as important by analysts who use them as a key indicator of company performance. Therefore the earnings figure gains prominence with managers of

companies, and with investors; and is often perceived as the 'single measure' of company performance.

2-8 Functional Fixation

To the extent that the receipt of information may not lead to a 'correct' interpretation, it is of relevance to consider arguments of the 'functional fixation' type that appear in the positive accounting and economic consequences literature. The functional fixation hypothesis claims that investors fail to recognize that alternative accounting methods may produce different accounting numbers.

Lev (1989) called for more research on the 'quality' of earnings. This would then shift the focus to an explicit consideration of accounting issues by calling for a systematic examination of the extent to which the specific principles underlying accounting measurements and valuations, as well as managerial manipulations, detract from the usefulness of earnings and other financial variables. Dharan (1989) provided supporting evidence when he examined firms that changed accounting methods and found that, on average, the firms that adopted income-increasing

accounting changes (eg. a switch from accelerated to straight-line depreciation) had a prechange decline in EPS of 23%, while the income-decreasing firms had a prechange increase of 12% in EPS. It would appear from this that accounting change may be used as an income-smoothing device.

Further evidence is provided by Hand (1989) and Hand and Hughes (1990) where they investigate firms undertaking debt-equity swaps 1981-1984 and defeasances 1981-1987. The evidence suggests that managers undertake costly debt-equity swaps and defeasances in "bad times" in order to disguise downturns in reported earnings. Stock market investors respond negatively to these transactions. However, the reason for this negative response is unclear - it could be that investors interpret the attempts to manipulate earnings as a sign of poor operating results ahead, or as a result of reduced corporate leverage and the reduction in the associated tax shields.

Findings like this would tend to run counter to Ball (1972) and Sunder (1973) who found that there was no stock price effect associated with changes in accounting techniques, and with Kaplan

and Roll (1972) who stated 'Earnings manipulation may be fun, but its profitability is doubtful'. Similarly, in a review of studies which had attempted to determine how the stock market interprets alternative accounting policies, Ricks (1982) criticised several studies which had concluded that the market was not fooled by cosmetic accounting differences or changes.

However, it would seem that if there is no stock price change then it would not really explain the everyday pre-occupation of managers and investors with EPS.

Whitley (1988) states that Watts and Zimmerman's positive accounting theory analysis is flawed and relies on theories of scientific method that are incoherent and inapplicable to accounting research. Similarly, Williams (1989) states that experimentally, positive accounting theory is transformed into a tautology as a causal variable is defined in terms of the phenomenon it seeks to explain.

A subsequent work by Hand (1990), in which he details his extended functional fixation view, proposes that when responding to accounting data, sometimes a firm's stock price is set by a sophisticated marginal investor, and sometimes by

an unsophisticated marginal investor - i.e. he proposes and tests a middle ground between the traditional functional fixation view and the efficient markets hypothesis. Using the stock price reaction to the announcement of the accounting gain arising from a debt-equity swap, he concludes that the evidence is inconsistent with the efficient market view, but consistent with the extended functional fixation view.

Tinic (1990) reviewed the work of Hand (1990) and Harris and Ohlson (1990) and was sceptical of both studies, as they used cross-sectional analysis, when time series would have been better. This is a valid criticism as in cross-sectional analyses, it is difficult to distinguish whether the market's reaction to accounting changes is caused by the altered accounting procedures or by the unforeseen changes in the real characteristics of the firms.

Ball and Kothari (1991) also reexamined Hand's (1990) research and conclude that Hand's PR variable (the probability that the marginal investor is unsophisticated) is in effect a proxy for an anomalous size effect at earnings announcements. In reply Hand (1991) states that he believes that their conclusion is premature,

and a potential explanation is that the firm-size correlations are in fact proxying for the impacts of cross-sectionally varying concentrations of sophisticated and unsophisticated investors.

Further support for the notion of functional fixation on EPS is provided in a study of executive and employee share option schemes by Egginton, Forker and Grout (1993). They find that there is functional fixation on EPS as managers choose the share option scheme which gives the higher EPS.

A key argument of this thesis is that profit reporting is behaviour determining. This is contrary to the view that investors can 'see through' accounting numbers. The implication being that it is in the interests of managers to make decisions which maximise EPS on the basis that the markets are functionally fixated. Rick Sopher, Head of Corporate Finance at Stoy Hayward, commented in September 1991, that firms tended to try to maximise EPS, 'which after all is what it's all about'.

2-9-Conclusions

The main conclusion to arise from considerably diverse literature on financing decisions is the absence of any universal consensus on optimal financial structure and the related problem of optimal methods of financing.

It seems that the analysis of the financing decision problem, in common with other areas dealt with in the finance literature, tends to focus, often in isolation, on a single analytical paradigm. As shown from the review of the literature above, a piece of analysis might be based on fundamental analysis or on tax effects, or on signalling theory, agency theory, etc.

The main points in relation to the theoretical perspectives are as follows:

(i) Fundamentalists - there is no real consensus on the 'optimal' course of action for management to follow when choosing between debt and equity. No one theory predominates, and hence no optimal financial structure is defined. When the taxation implications of debt are taken into account, the evidence is inconclusive with some studies arguing that debt is advantageous

whilst others argue that it is not.

(ii) Agency - there are really two aspects, viz: the conflict between equityholders and management; and the conflict between equityholders and debtholders. Debt may be used as a monitoring device, and the optimal capital structure obtained by trading off the agency cost of debt against the benefit of debt.

(iii) 'Pecking order' - this is a surprisingly ad hoc idea, with little economic justification (except perhaps minimisation of issue costs). Proponents of this theory believe that firms should finance investment by retained earnings as first choice, then debt, and lastly equity.

(iv) Signalling - information asymmetry is assumed between management and shareholders. The theoretical consensus would seem to favour debt over equity. The main arguments being that debt levels are seen as signals of management ability (Ross, 1977); and that the issue of new equity can be construed as a signal that equity is overpriced (Asquith and Mullins, 1986).

(v) Functional fixation - on balance there would seem to be evidence of functional fixation on key

accounting data, the overwhelming impression being that this fixation is focussed on earnings. Certainly the influence of earnings and the emphasis on EPS is borne out by the review of the perception of earnings as documented in Sections 2-7 and 2-8.

The extent to which these ideas are supported empirically varies.

(i) Fundamentalists - the empirical evidence is inconclusive, although the amount of debt employed would seem to be related to tax shields and bankruptcy costs, and tax exhausted companies would be less inclined to issue debt.

(ii) Agency - As mentioned earlier it is difficult to formulate testable hypotheses in agency theory, so agency theory is not really capable of providing an empirically sound explanation of capital structure.

(iii) 'Pecking order' - the empirical evidence is contradictory, and, as mentioned above, the theory itself ad hoc.

(iv) Signalling - whilst a certain amount of empirical evidence is consistent with the

arguments mentioned in (iv) above, the findings may also be rationalised from a fundamental perspective in that equity provides a lower tax shield effect.

(v) Functional fixation - on balance the empirical evidence is in support of a functional fixation on earnings, particularly short-term EPS.

Whilst an emphasis on EPS is not justified on theoretical grounds, it may be justified on narrow financial reporting criteria. The emphasis on EPS can be evidenced in the financial statements of companies, an area which UBS Phillips and Drew (1991) and Smith (1992) drew attention to in their controversial publications. Indeed it is what David Tweedie (1992), Chairman of the Accounting Standards Board, and others have seen as the abuse of earnings per share which has led to the radical change in the format of the profit and loss account outlined in FRS3.

At a simple level (simple because it does not consider risk) the EBIT-EPS relationship can be examined. The EBIT-EPS relationship ignores most of the theoretical constructs discussed above but does concentrate on a measure - EPS - that

appears to have particular importance for investors. This is examined in Chapter 5.

The review of the literature found an emphasis on EPS by analysts and other parties. Therefore the next Chapter seeks to elicit the views of finance directors to determine which factors they perceive as being important in the type of capital issue that they make.

CHAPTER 3 : SURVEY OF FINANCE DIRECTORS

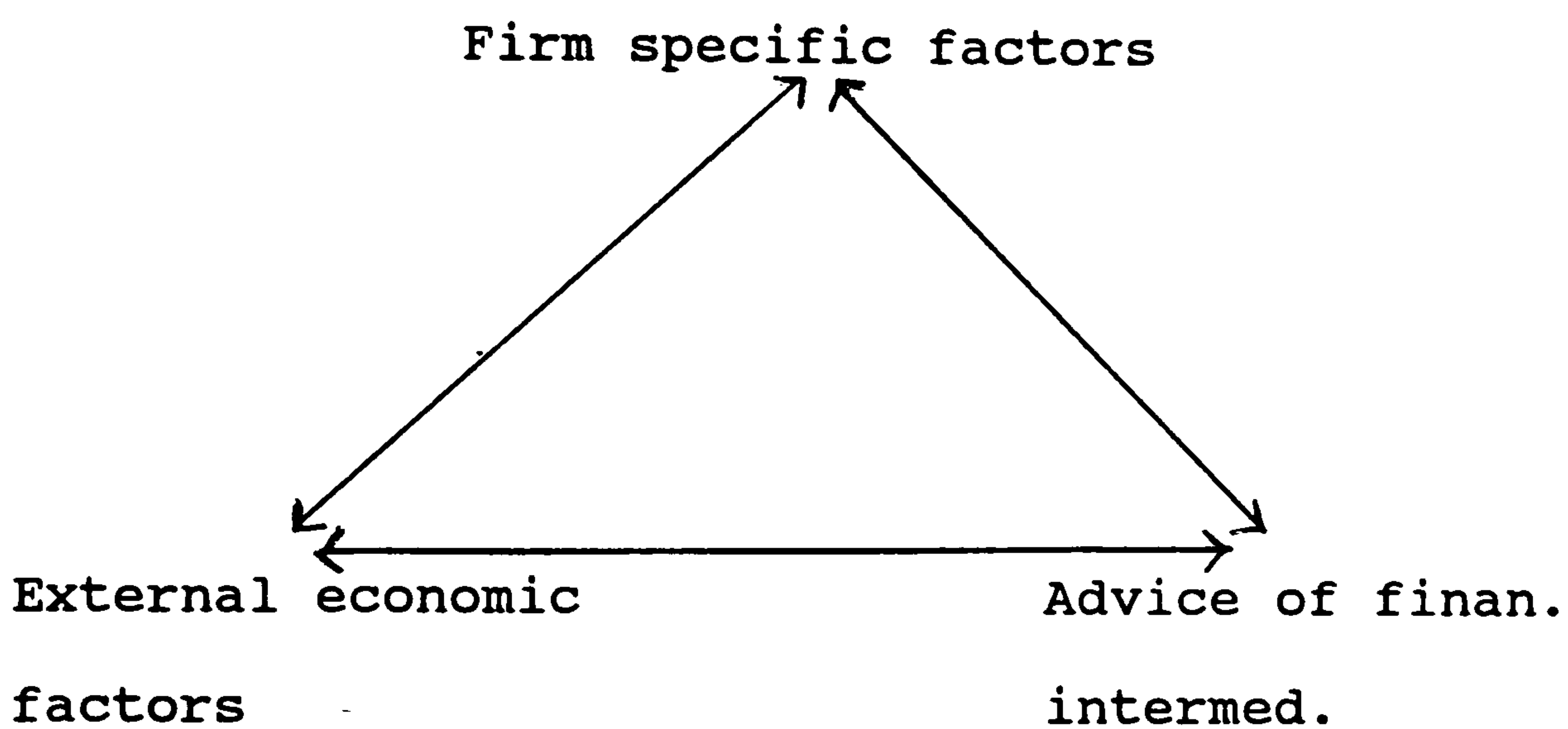
3-1 Introduction

An important prelude to the detailed empirical work on financial data was a field study to elicit the views of company finance directors. In addition to providing useful survey information on different financing patterns, this study provided a check to see if there were aspects of financing decisions which were of particular concern in practice. The qualitative data which were obtained also formed a valuable background for evaluation of the 'harder' factual data on frequency, amount and type of finance issues. For example, the generally supportive responses concerning the value for money of financial intermediaries was particularly interesting in the light of recent unfavourable criticism in the press, and did not appear to be a factor adversely affecting the issue frequency.

In forming the research questionnaire, the basic framework being modelled was effectively a triangular one encompassing three important sets of influences. The three apexes could be viewed as (i) firm specific factors, such as EPS, dividends, and firm's share price; (ii) external

economic factors, such as interest rates, stock market prices as a whole, and the state of the economy generally; and (iii) the influence and advice of financial intermediaries. This is illustrated below:

Fig. 3.1 : Framework of Influences Affecting Capital Issue Choice



The responses in relation to these factors are analysed in Sections 3-4 and 3-5.

3-2 Methodology and Sample Selection

3-2-1 Sample Selection

The finance directors of a sample of companies which had made capital issues in the five years 1986-1990 were sent a questionnaire on capital issues (a copy of the questionnaire is shown in

Appendix 3.1).

The period 1986-1990 was chosen as the information is more readily accessible on both the databases used (Extel and Datastream), and from the point of view of the finance directors surveyed, to go even further back than 1986 would not have been viable in many cases. Also it is useful to have at least one year after the date of the issue to follow up the subsequent financial history of the company.

The sample for the capital issues questionnaire consists of companies chosen from the Extel Index of Prospectuses and from the Datastream Rights Issues Service, for the five years from January 1986-December 1990.

Both of these sources were required as the Extel Index of Prospectuses does not include rights issues as, in contrast to public issues, these do not require a full prospectus. The rights issues were therefore obtained from Datastream, but this source was not viable for all the types of issue as whilst it has its own capital changes programme, this could not be targetted selectively enough to encompass the issues that were of interest.

TABLE 3.1 CAPITAL ISSUES 1986-1990

	Rights ¹	Prospectuses ²	Total
1986	163	699	862
1987	196	656	852
1988	146	596	742
1989	122	420	542
1990	123	440	563
	---	----	----
	750	2811	3561
	---	----	----

¹Source: Datastream Rights Issues Service

²Source: Extel Index of Prospectuses

The totals for rights issues and for prospectus issues are shown in Table 3.1. From the yearly totals, it can be seen that approximately 20% of the issues each year are rights issues. Therefore, the sample of companies for the questionnaire was chosen from the two sources in the same proportion, i.e. 80% from the Index of Prospectuses, 20% from the Rights Issues Service.

It is somewhat surprising that the proportion of rights issues is not higher than 20% given the pre-emptive rights of shareholders in U.K. company law (s.89 Companies Act 1985). This section gives the existing shareholders of a company the right to have the first opportunity to subscribe for any further equity which is issued for cash. The supposed advantages of pre-emptive rights are that they protect shareholders against involuntary dilution of their stake in the company and allow companies to raise cash in difficult markets. However, a significant disadvantage is the 'value for money' aspect of underwriting. Marsh (1980) concluded that British issuers were paying underwriters about twice the true cost of insurance, and this still seems to be the case today, with companies typically paying underwriters' fees of 1.25% plus a further 0.75% to its merchant bank and

broker. The shares are also generally offered at a discount of 15%-20% on the market price. Davidson and Mallin (1992) confirmed these findings in a study of rights issues over the period 1984-1991.

One apparent disadvantage of rights issues is that there is a limited group, i.e. existing shareholders, from whom additional funds can be raised. This argument was put forward forcefully in 1989 in the Government initiative on wider share ownership but in fact the proposal to modify pre-emptive rights was never implemented.

The prospectus figures also include issues of bonds, notes and warrants, as well as issues of shares (both ordinary and preference). The reasons cited above may help to explain the difference in overall terms between the number of full prospectus and rights issues.

The companies to be surveyed were chosen on a pseudo random basis ('1 in k' random sample [k=10, with a randomly selected starting point]). Once a particular company's name had been selected, it was necessary to obtain the company's address and other details. For most companies, this was obtained from Datastream, but

several proved to be elusive in this respect, and details for most of these were found from Kelly's Directory of Company Information, Kompas, or Dunn and Bradstreet's Company Information Service.

Finally a total of 342 companies were sent the questionnaire on capital issues (Appendix 3.2 shows the sample of companies to which the questionnaire was sent).

3-3 Questionnaire Design

The questionnaire was designed to minimise bias through leading or value-laden questions.

Questions were of four types:

- (i) dichotomous 'yes' 'no' answers,
- (ii) non-parametric Likert scale,
- (iii) parametric numeric (for example, the amount of an issue) or
- (iv) descriptive ¹.

The questions focussed not just on the capital issues themselves but on qualitative factors such

¹Various marketing texts were referenced including A.Parasuraman 'Marketing Research' (1986) Addison Wesley, and R.Worcester & J.Downham (Eds) 'Consumer Market Research Handbook' (1986) McGraw Hill.

as the influence of stock market prices on the timing and amount of the issues made.

The first group of questions in the questionnaire (Section A) were concerned with general background information about the company - its age, turnover and industry sector.

Section B of the questionnaire aimed to elicit information about the perceptions of the finance directors concerning financial intermediaries - how they rated their advice and what sort of value for money they thought it represented.

Section C requested information about the most recent capital issue of the company - the type of issue, the total amount of the issue in terms of both the nominal amount and the actual amount raised, the nominal value and issue price per share or per bond issued, coupon rate and redemption date (if applicable), the total costs and, where available, a break-down of the costs. The respondents were then asked to state how important they thought a number of factors were in choosing their particular method of raising capital by ranking the factors on a scale, ranging from 1 (not at all important) to 5 (very important).

The respondents were also asked whether they had raised finance significantly through increasing bank borrowing; the primary purpose of the issue; and their merchant bankers/advisors for the issue.

Section D asked for similar information to that in Section C, but relating to all capital issues in the last five years (but not the most recent issue which would already have been dealt with in Section C).

The respondents were then asked to score a number of factors with regard to their perceived importance in relation to making capital issues or acquisitions.

Finally, respondents were asked to cite any significant differences in the reasons that they might have given for choosing a particular method of raising finance and those given by the financial intermediary involved.

Section E was available for respondents to make any comments about their company's capital issues, or any financial advice they had received in this connection. In the event, most companies did not choose to make any further comments on

these areas.

3-4 Analysis of Responses

3-4-1 General

The replies to the questionnaire were analysed using SPSS (Statistical Package for the Social Sciences). The version used being the latest revision for the mainframe computer SPSS-X, release 3.0. The system file written for the analysis of the questionnaire is shown in Appendix 3.3.

3-4-2 Detail of Respondents

62 companies returned a completed questionnaire. Of the remaining companies, 31 finance directors replied but did not complete the questionnaire. Reasons given (numbers in brackets) were:

- (i) they were too busy to do so (12)
- (ii) it was company policy not to do so (12)
- (iii) the information requested was felt to be of a confidential nature or (6)
- (iv) the company was in the hands of the receiver (1)

A follow-up letter was sent (see Appendix 3.4)

and, as a result, another 13 completed questionnaires were received and another 13 companies replied stating that they did not wish to complete the questionnaire. The reasons for not replying fell into the categories outlined above (in relation to [i] 4 replies, [ii] 5 replies, [iii] 3 replies; and [iv] 1 reply). A total of 117 replies was therefore received.

On analysing the responses it was found that there were a large number of rights issues - the inference from this being that many companies which had issued debt in the period 1986-1991, and were chosen from the index of prospectuses as having issued debt, had subsequently made a rights issue and so their most recent issue is an equity issue and not a debt issue.

A further selection of companies was therefore made - Datastream was used to obtain details of all outstanding debentures at the start of 1992, and from this list 59 companies were chosen which had not featured in the original sample and the capital issues questionnaire was sent to them.

12 completed questionnaires were returned and another 11 were returned stating that the companies concerned were unable to help for the

reasons stated above. The breakdown of these figures was in relation to [1] 4 replies, [2] 6 replies, [3] 1 reply, and [4] 0 replies). A follow-up letter was sent, 2 further completed questionnaires were received, whilst a further 6 companies replied stating that they were unable to complete the questionnaire for reasons stated above (the breakdown of these figures was in relation to [1] 2 replies and [2] 4 replies).

The analysis of the replies showed that replies had been received from 33 manufacturing companies, 22 service companies (including financial, media and leisure companies), 13 retail and distribution companies, and 21 property companies.

The composition of the sample in terms of the number of companies in each industry sector was compared to the proportions of companies in the various industry sectors in the Financial Times, Table 3.2 highlights this information. As a formality a chi-square test was carried out to test to see if the sample categorisation was out of line with the population. The chi-square statistic was: $\chi^2 = 19.555$, whilst the critical value of χ^2 at the five per cent level for 3 degrees of freedom was 7.81473. Thus the sample

TABLE 3.2 INDUSTRY SECTORS IN FINANCIAL TIMES AND IN SAMPLE

Sector	Total per F.T.	Sample (Actual)	Sample (Expected)
Manufacturing	1,354	33	47
Service (including Finance)	686	22	24
Retail & Distribution	233	13	8
Property & Construction	287	21	10
	2,560	89	89

χ^2 statistic = 19.555
Degrees of freedom = 3
 α = 0.05
Critical value of χ^2 = 7.81473

Note: There were 7 USM companies: 2 in manufacturing, 1 in service and 4 in retail and distribution, 7 in total, included in the total sample of 89.

is not quite representative of the distribution of industrial sectors in the F.T., but this does not appear to have any material bearing on the conclusions reached.

3-4-3 Financial Intermediaries

The first part of the questionnaire dealt with the finance directors attitudes towards financial intermediaries. The results of this part of the questionnaire are dealt with in Table 3.3. This shows that, contrary to what one might expect, the finance directors' opinions of financial intermediaries are generally supportive. The advice received tends to be viewed overwhelmingly as 'neutral' or 'good'. However, in relation to the fees charged for this advice, the responses are not quite so favourable (Table 3.4). The merchant bankers are viewed in the main as 'expensive', the brokers as 'neutral', accountants as 'expensive' or 'neutral', and the other advisors (mainly solicitors) as generally 'expensive'.

3-4-4- Financial Instruments Used For Capital Issues

Analysis of the capital issues details given by

TABLE 3.3 ATTITUDES TOWARDS FINANCIAL INTERMEDIARIES

		Very Poor	Poor	Neutral	Good	Very Good
Advice received from:						
(i)	Merchant Banker	-	6	29	33	12
(ii)	Broker	2	8	33	31	10
(iii)	Accountant	-	9	38	26	9
(iv)	Other advisors	-	3	4	4	2

TABLE 3.4: ATTITUDES TOWARDS FINANCIAL INTERMEDIARIES

		Extremely Expensive	Expensive	Neutral	Reasonable	Very Reasonable
Service provided in relation to the fees charged by:						
(i)	Merchant Banker	17	30	23	9	1
(ii)	Broker	7	18	38	19	2
(iii)	Accountant	9	30	25	15	3
(iv)	Other advisors	2	7	3	-	-

TABLE 3.5 FINANCIAL INSTRUMENT USED FOR CAPITAL ISSUES

Type of issue	No. of Issues				
	Most recent issue	2nd Most Recent	3rd Most Recent	4th Most Recent	5th Most Recent
Ordinary Shares - new issue	29 (33%)	13 (35%)	6 (32%)	3 (33%)	3 (38%)
Ordinary Shares - rights issue	34 (38%)	9 (24%)	4 (21%)	1 (11%)	- (-)
Preference Shares	8 (9%)	4 (11%)	3 (15%)	- (-)	- (-)
Debt Issues	18 (20%)	11 (30%)	6 (32%)	5 (56%)	5 (62%)
	89 (100%)	37 (100%)	19 (100%)	9 (100%)	8 (100%)

the respondents is shown in Table 3.5. It can be seen that for the most recent issue, new issues of ordinary shares accounted for 33% of the total issues, rights issues of ordinary shares for 38%, issues of preference shares 9%, and debt issues 20%. Debt includes both secured and unsecured debt, Eurobonds, senior and guaranteed notes and bonds.

Details supplied by respondents in relation to the financial instrument used for earlier issues do tend to tail off quite rapidly in the replies. However, it is interesting to note the decline in debt issues as the more recent issues approach, and the increase in rights issues. New issues of ordinary shares tend to account for broadly the same proportion of total issues over time, whilst there would appear to have been an increase, in overall terms, of preference share issues.

3-4-5 Reasons for Capital Issues

The primary purpose of the capital issue was divided into categories, viz:

- (i) to fund an acquisition
- (ii) to fund an internal expansion
- (iii) capital restructuring
- (iv) other

The primary purposes of the capital issues are analysed in Table 3.6.

The most frequently cited reason for the most recent capital issue was capital restructuring (38%), followed by funding an acquisition (32%) and to fund internal expansion (28%). Two respondents, accounting for the remaining 2%, cited other reasons (both issues were related to a flotation). Given the high proportion of rights issues (38%), the findings corroborate Davidson and Mallin (1992) who found for 1990 that the majority of rights issues were made for the purposes of capital restructuring.

A reasonable prior assumption in the present recessionary climate would be that capital restructuring would be cited as a reason by companies which had issued equity (to pay off excessive past borrowings). As is discussed more fully in Section 3-5-10, this view is oversimplistic and capital restructuring was actually cited as the most important reason for issue by the majority of debt issuers.

Examining the earlier issues (which occurred over the period 1986-1990), funding an acquisition is the most frequently cited reason, followed by

TABLE 3.6 PRIMARY PURPOSE OF CAPITAL ISSUES

	To fund an acquisition	To fund an internal expansion	Capital Restructuring	Other
Most recent issue	28 (32%)	25 (28%)	34 (38%)	2 (2%)
2nd most recent	12 (38%)	7 (22%)	11 (34%)	2 (6%)
3rd most recent	7 (44%)	2 (12%)	6 (38%)	1 (6%)
4th most recent	4 (45%)	1 (11%)	3 (33%)	1 (11%)
5th most recent	3 (38%)	1 (12%)	3 (38%)	1 (12%)

capital restructuring, and lastly funding an internal expansion.

3-4-6 Factors Affecting the Method of Finance

The questionnaire included sections on factors which might be perceived as being important to the choice of finance in the capital issue decision.

(A) Factors Affecting the Most Recent Issue

The factors perceived as being the most important in the choice of the particular method chosen for the most recent capital issue can be seen from Table 3.7. The ranking was on a scale of 1 to 5, with 1 being 'Not at all important' through to 5 being 'Very important' (whilst '3' is 'neutral'). The factors fall into the following areas:

(a) Influence of stock prices

The response to 'firm's share price was considered to be high' and 'firm's share price was considered to be low' was mixed. 26% in total ranking the former statement as 'very important' and 23% in total ranking it as 'not at all important'; whilst 23% in total ranked the

TABLE 3.7 FACTORS INFLUENCING METHOD OF FINANCE

Factor	1 = Not at all important	2	3 = Neutral	4	5 = Very Important
1. Firm's share price was considered to be high	12 (23%)	8 (15%)	13 (25%)	6 (11%)	14 (26%)
2. Firm's share price was considered to be low	8 (30%)	3 (12%)	6 (23%)	3 (12%)	6 (23%)
3. Stockmarket prices as a whole were high	16 (28%)	7 (12%)	17 (30%)	11 (19%)	6 (11%)
4. Stockmarket prices as a whole were low	11 (41%)	3 (11%)	7 (26%)	4 (15%)	2 (7%)
5. The level of interest rates was high	15 (28%)	1 (2%)	19 (36%)	12 (23%)	6 (11%)
6. The level of interest rates was low	7 (23%)	4 (12%)	6 (19%)	7 (23%)	7 (23%)
7. Leverage would have been too high	21 (27%)	5 (6%)	8 (10%)	15 (19%)	30 (38%)

TABLE 3.7 (cont'd): FACTORS INFLUENCING METHOD OF FINANCE

Factor	1 = Not at all important	2	3 = Neutral	4	5 = Very important
8. To meet target debt equity ratio	24 (29%)	11 (13%)	16 (19%)	19 (23%)	13 (16%)
9. To signal the firm's strength	14 (17%)	9 (11%)	30 (37%)	20 (24%)	9 (11%)
10. Merchant bank or other advisors recommendation	12 (14%)	10 (12%)	30 (36%)	28 (33%)	4 (5%)
11. Company tax exhausted so unable to use tax relief on debt interest ¹	36 (77%)	4 (8%)	1 (2%)	4 (8%)	2 (5%)
12. Company did not issue equity as did not want to dilute EPS ²	9 (36%)	4 (16%)	5 (20%)	5 (20%)	2 (8%)

Note 1 Finance directors were asked to respond to this question only if the company was tax exhausted.

2 Finance directors were asked to respond to this question only if the company had not issued equity.

latter statement as 'very important' and 30% as 'not at all important'.

The level of stock market prices did not generally seem to be an important influence. 'Stock market prices as a whole were high' was ranked as point 3 on the scale by a total of 30% of respondents and as point 1 'not at all important' by 28%. 'Stock market prices as a whole were low' was ranked on point 3 of the scale by 26% in total and on point 1 by 41%.

If the responses to 'stock market prices being high' and 'stock market prices being low' are added together, then the 'not at all important' category accounts for 32% of total responses; whilst 'neutral' accounts for another 32%.

It would seem that the level of stock market prices is not perceived as an important factor in the capital issue decision. The responses in relation to the influence of the individual firm's share price were, as discussed above, much more mixed.

(b) Influence of interest rates

The influence of interest rates seems to be more

apparent when the interest rate is low, with 46% of respondents scoring 'the level of interest rates being low' as a 4 or 5 (where 5 is 'very important') on the scale. The level of interest rates was high' had more of a mixed response from respondents with 28% ranking it as point 1 'not at all important' but 23% ranking it as point 4 on the scale.

(c) Leverage

'Leverage would have been too high' seemed to be an important factor with 38% of respondents ranking this factor as 'very important' point 5 on the scale. However, 27% of respondents ranked this factor as 'not at all important'.²

'Meeting the target debt-equity ratio' was ranked as 'not at all important' by 29% of respondents. However 23% ranked it as point 4 on the scale, and 16% as point 5 'very important'. There appears to be a mixed reaction to this one, perhaps implying that those companies which issue debt do not tend to view the target debt-equity ratio as being important, or indeed do not have a target debt-equity ratio.

²There may have been an implicit response bias to this question as it really only applies to equity issues.

(d) Signalling aspect

The method of capital issue being seen as a 'signal of the firm's strength' is ranked as point 3 on the scale by a total of 37%, and as point 4 by a total of 24%. However, 17% of respondents scored it as point 1 on the scale. On balance, the type of capital issue does not seem to be perceived as a signal of the firm's strength.

(e) Financial advisors' recommendation

As one might expect 'the merchant bank or other advisors recommendation' is ranked as point 3 on the scale by 36% in total and as point 4 by 33% in total, probably reflecting the fact that having perceived that they have paid a lot for this advice, the respondents feel that they ought to take note of it in their capital issue decisions!

The last two factors mentioned in Table 3.7 were to be answered if certain conditions were met:

(f) Tax Exhaustion

If the company were tax exhausted and so unable

to use tax relief on debt interest, then the finance director's perception of this situation was requested. Replies to this question indicated that 77% of respondents viewed tax exhaustion as 'not at all important'. This would seem counter-intuitive in view of the potentially restrictive set off of debt interest. A probable explanation is that this question was answered by respondents whose companies were not tax exhausted and therefore were not experiencing first-hand the full implications of this situation.

(g) EPS Dilution

If companies did not issue equity, the importance of the factor 'did not want to dilute EPS by issuing more equity' was of interest. 'Non-dilution of EPS' was viewed as 'not at all important' by 36% of the respondents. However 20% did score it as 4, and 8% as 5, indicating that a sizeable subset considered it to be a significant reason for companies to issue debt and not equity.

There was space left at the end of this section for respondents to indicate any other factors which had influenced their capital issue

decision. No further factors were in fact mentioned by the respondents.

From the above analysis it appears that there is a complex interaction of factors with no single factor being dominant. This is borne out by the analysis in Table 3.7b which lists the factors discussed above and indicates how influential each one is perceived to be. The factor perceived to be marginally more influential is the 'leverage' factor with a mean response of 3.35. This is followed by the level of interest rates being low (3.10), the firm share price being high (3.04), the merchant bank or other advisor's recommendation (3.02), and the type of issue as a signal of the firm's strength (3.01). Perceived as being of least influence is the tax exhaustion factor (1.55) but it should be borne in mind that the responses to this factor were thought to be counter-intuitive (see (f) above). None of the factors has a mean score of more than 3.35 (3=neutral). In Chapter 4, the precise statistical interactions are investigated using factor and discriminant analysis.

**TABLE 3.7b : SUMMARY OF PERCEIVED INFLUENCE OF FACTORS
ON MOST RECENT CAPITAL ISSUE**

(5 point scale: 1= not at all important to
5= very important)

	Mean Response	Standard Error	Rank
1. Firm's share price was considered to be high	3.04	0.20	3
2. Firm's share price was considered to be low	2.85	0.30	7
3. Stockmarket prices as a whole were high	2.72	0.18	9
4. Stockmarket prices as a whole were low	2.37	0.26	11
5. The level of interest rates was high	2.87	0.18	6
6. The level of interest rates was low	3.10	0.26	2
7. Leverage would have been too high	3.35	0.19	1
8. To meet target debt- equity ratio	2.83	0.16	8
9. To signal the firm's strength	3.01	0.13	5
10. Merchant bank or other advisors recommendation	3.02	0.12	4
11. Company tax exhausted so unable to use tax relief on debt interest	1.55	0.17	12
12. Company did not issue equity as did not want to dilute EPS	2.48	0.27	10

(B) Factors Affecting Capital Issues & Acquisitions in General

Table 3.8 shows the responses of the respondents to being asked to score certain factors in terms of their importance to capital issues or acquisitions in general. The choice of scores was from 1 'Unimportant' to 5 'Very Important'. The factors are examined under the following headings:

(a) Level of EPS

The most important factor is 'maintaining or increasing earnings per share' with 42% scoring it as 4 on the scale of 1 to 5; and 32% scoring it as 5 'very important'. This factor is also the one with the least number of 1 'unimportant' (2%) and 2 (0%) scores. This would be consistent with the apparent emphasis on EPS by the market.

(b) Dividend Levels

Another factor which is viewed as very important is 'enhancing the capacity to maintain dividend', which was scored 4 by 32% and 5 by 11%. Companies try to maintain their dividend capacity over time, and sustain a constant, or increasing,

TABLE 3.8 IMPORTANCE OF FACTORS TO CAPITAL ISSUE METHOD CHOSEN

Factor	1 = Unimportant	2	3 = Neutral	4	5 = Very Important
1. Maintaining or increasing EPS	2 (2%)	- (-)	20 (24%)	35 (42%)	27 (32%)
2. Enhancing the capacity to maintain dividend	7 (8%)	18 (21%)	23 (28%)	27 (32%)	9 (11%)
3. Prevailing market conditions	2 (2%)	3 (4%)	21 (25%)	34 (40%)	25 (29%)
4. Behaviour of other companies in the industry	20 (24%)	36 (43%)	23 (27%)	5 (6%)	- (-)
5. Advice of financial advisors	5 (6%)	14 (16%)	29 (34%)	34 (40%)	3 (4%)
6. Attitude of shareholders	1 (1%)	4 (5%)	18 (21%)	36 (43%)	25 (30%)
7. Effect on leverage of company	4 (5%)	4 (5%)	19 (22%)	36 (42%)	22 (26%)

payout ratio so that the emphasis on the effect of any capital issue on dividend levels is not surprising.

(c) Prevailing Market Conditions

The finance directors perceive 'prevailing market conditions' as an important factor, with 40% scoring it as 4, and 29% as 5. In the capital issue decision the state of the market, both in terms of share price and interest levels, must be taken into account. This factor scores more highly than the individual factors of firm share price, stock market prices, and interest rates, discussed previously probably because it encompasses the overall effect of all of those individual factors.

(d) Attitude of Shareholders

The factor 'attitude of shareholders' was scored 4 by 43% and 5 by 30%. In general the finance directors of companies will be seeking to make decisions which enhance the company's position and which are consistent with the shareholders' wishes. This predisposition would tend to emphasise EPS, and dividend levels as discussed above.

**TABLE 3.8b : SUMMARY OF PERCEIVED INFLUENCE OF FACTORS
ON CAPITAL ISSUES IN GENERAL**

(5 point scale: 1= unimportant to
5= very important)

	Mean Response	Standard Error	Rank
1. Maintaining or increasing EPS	4.01	0.10	1
2. Enhancing the capacity to maintain dividend	3.15	0.12	6
3. Prevailing market conditions	3.91	0.10	3
4. Behaviour of other companies in the industry	2.15	0.09	7
5. Advice of financial advisors	3.19	0.10	5
6. Attitude of shareholders	3.95	0.10	2
7. Effect on leverage of company	3.80	0.11	4

(e) Effect of Leverage

The scores in relation to 'the effect on leverage' show that this factor is also perceived as being of importance, being scored 4 by 42% in total and 5 by 26%.

(f) Advice of Financial Advisors

Again, the advice of financial advisors is viewed as important with 40% scoring it as 4 and 4% as a 5 'very important'. Probably for the logical monetary reasons mentioned above!

(g) Industry Behaviour

'Behaviour of other companies in the same industry' is generally not considered to be important, with 24% scoring it as a 1 'unimportant' and 43% scoring it as a 2.

From the factors analysed in Table 3.8, the one which scores most highly in terms of importance (i.e. 4's and 5's) and least in terms of unimportance (i.e. 1's and 2's) is 'maintaining or increasing earnings per share'.

Table 3.8b lists the factors discussed above and

indicates how influential each one is perceived to be. The factor perceived to be the most influential is 'maintaining or increasing EPS' with a mean response of 4.01. This is followed by 'attitude of shareholders' (3.95), 'prevailing market conditions' (3.91), and the 'effect on leverage of the company' (3.80). Perceived to be of less influence are 'advice of financial advisors' (3.19), 'enhancing the capacity to maintain dividend' (3.15), and 'behaviour of other companies in the industry' (2.15).

Therefore the analysis above would tend to support the argument that there is functional fixation on short-term earnings per share.

3-5 Cross-Tabulation of Data

Standard cross-tabulation procedures were performed in SPSSX to investigate the relationships between responses to the questions. The crosstabulation tables are shown in Appendix 3.5.

It should be noted that the chi-square statistic's reliability is brought into question for some of these tables as there are a number of crosstabulations where 20% or more of the cells

have an expected frequency of less than 5 (this limitation would also apply if any cell had an expected frequency of less than 1). Chi-square is approximate in these circumstances because it is a continuous distribution (and therefore it can only provide an approximation to a discrete distribution). The reliability decreases the smaller the number of expected items in any particular category, since whole number approximations involve a proportionally greater degree of rounding-off. Nevertheless, the errors involved in the present study are on the whole relatively small given the cell populations.

The relationship between the type of capital issue and various factors is examined below.

3-5-1 Impact of Industry Sector

Appendix 3-5-1 cross-tabulates the type of the most recent issue (new issue of ordinary shares, rights issue of ordinary shares, preference share issue and debt issue) against industry sector (manufacturing, service, retail and distribution, and property and construction).

In each cell there are five values, for example, for the manufacturing sector, reading from the

top line in each cell downwards:

- (i) 9 : the number of issues of new ordinary shares in manufacturing
- (ii) 10.8 : the expected number of issues of new ordinary shares in the manufacturing sector (calculated as the column total for issues of new ordinary shares of 29 multiplied by the row total for total manufacturing capital issues of 33, this then being divided by the total row total of 89 being the total number of capital issues across all sectors)
- (iii) 27.3% : the proportion of issues of new ordinary shares in manufacturing (9) as a percentage of the total capital issues in manufacturing (the row total of 33)
- (iv) 31.0% : the proportion of issues of new ordinary shares in manufacturing (9) as a percentage of the total issues of new ordinary shares across all sectors (29)
- (v) 10.1% : the number of issues of new ordinary shares in manufacturing (9) as a percentage of total issues in all sectors (89)

Outside of the cells, the row total figures against manufacturing on the right of the table indicate that there were a total of 33 capital

issues in the manufacturing sector, representing 37.1% of the total capital issues across all sectors. The column totals on the bottom left indicate that there were 29 issues of new ordinary shares across all sectors and that this represented 32.6% of the total capital issues made across all sectors.

From App. 3-5-1 the following can be deduced.

The manufacturing sector has made more rights issues and debt issues than would have been expected, and fewer issues of preference shares and new issues of ordinary shares.

The property and construction sector has made more preference share issues and debt issues than expected, and fewer issues of new ordinary shares. It has made the expected number of rights issues.

Retail and distribution has made more new issues of ordinary shares than expected (accounting for 53.8% of that sector's total issues), and fewer of the other types of issue.

The service sector has made approximately the same number of the different types of issue as

would have been expected (of which 36.4 % were issues of new ordinary shares and 36.4% rights issues).

For the preference share issues, the property and construction sector accounted for 37.5% of total preference share issues, whilst the manufacturing and service sectors each accounted for 25%, and retail and distribution accounted for 12.5%.

The debt issues were accounted for as follows: manufacturing 44.4%, property and construction 27.8%, service 22.2%, and retail and distribution 5.6%.

In relation to the total number of rights issues across all sectors, manufacturing accounted for the highest proportion (41.2%), followed by the service sector (23.5%), and the property and construction sector (23.5%) and finally retail and distribution (11.8%). Manufacturing companies would therefore seem to have a greater propensity to make rights issues than the other industry sectors.

Rights issues accounted for the majority of recent capital issues for both the manufacturing sector (42.4%) and the property and construction

sector (38.1%); for 36.4% of the service sector's capital issues (being equal with the issue of new ordinary shares as the most popular method for that sector) and for 30.8% of the retail and distribution sector's capital issues (the issue of new ordinary shares accounted for 53.8% of this sector's total new issues).

The industry analysis, showing rights issues as the most frequent type of issue for 3 out of 4 sectors, is in line with the increase in rights issues in recent years.

The above analysis of the type of issue in relation to the industry sector is summarised in Table 3.9.

Detailed analyses of the cross-tabulations in Appendix 3-5-2 to 3-5-24 are discussed below. However Table 3.12, at the end of these analyses, is derived from the cross-tabulations and is a summary of the perceived importance of various factors in relation to the types of issue. Table 3.12 is discussed in more detail in 3-5-15, but it may also be a useful reference point during the more detailed analyses which follow.

TABLE 3.9 : TYPE OF ISSUE & INDUSTRY SECTOR

Industry Sector	Total	Ord.shares -new	Ord.shares -rights	Pref. shares	Debt
Manufacturing	33 (100%)	9 (27.3%)	14 (42.4%)	2 (6.1%)	8 (24.2%)
Service	22 (100%)	8 (36.4%)	8 (36.4%)	2 (9.1%)	4 (18.1%)
Retail & Distribution	13 (100%)	7 (53.8%)	4 (30.8%)	1 (7.7%)	1 (7.7%)
Property & Construction	21 (100%)	5 (23.8%)	8 (38.1%)	3 (14.3%)	5 (23.8%)

3-5-2 Influence of Firm's Share Price

App. 3.5.2 and 3.5.3 analyse the cross-tabulation of the type of the most recent issue by the perceived importance of the share price being considered high (App.3-5-2) or low (App.3-5-3) in the capital issue decision.

In overall terms the evidence is inconclusive as to whether the 'share price being low' and 'share price being high' are considered to be important factors in the choice of capital issue method. The perception does vary amongst the different types of issue, and it is in this context that the importance of share prices is discussed below.

In relation to issues of new ordinary shares, 62.6% of respondents scored the 'share price being high' as either 4 'quite important' (31.3%) or 5 'very important' (31.3%) to choosing their particular method, with another 25% scoring it as a 3. The responses here accounted for 83.3% of all scale 4s and 35.7% of all scale 5s. Also in relation to the issue of new ordinary shares, the responses scoring the importance of 'share price being low' were more diffuse, with 25% scoring it as 1 'not at all important', 25% scoring it as 5

'very important' and 50% scoring it as a 3!

Interestingly, the share price does not seem to be so important in the context of rights issues of ordinary shares - with 28% scoring 'share price being high' as 5, 28% as 3, and 20% as 1. Similarly with the 'share price being low', 40% scored it as 1, whilst only 10% scored it as 5, and 20% as 4. Indeed, the responses to the importance of the share price being high cross-tabulated with the rights issues of ordinary shares accounts for the 41.7% of the total score 1s, 62.5% of total score 2s and 53.8% of total score 3s. This could imply that companies are often 'forced' to make rights issues to repay existing high interest debt and that the share price is not, per se, a deciding factor in the choice of capital issue method.

This is in line with the idea, certainly in 1990 and 1991, that rights issues were used mainly for paying off excessive borrowings. The use of the discount on the rights issue means that terms can always be devised to make a rights issue effective, i.e. shareholders are really over a barrel. This is supported by the findings of Davidson and Mallin (1992).

In the case of preference share issues, opinion was fairly evenly split as to whether 'share price being low' or 'share price being high' was an important factor or not. For debt issues 'share price being high' is scored as 1 'not at all important' by 62.5%, whilst 'share price being low' is scored as 1 by 25%, 2 by 25%, and 5 by 25%. Therefore, on balance the share price being high is viewed as unimportant in debt issues, whilst more weight appears to be given to the share price being low.

This latter finding for debt issues is in line with the view that, when their share price is low, companies would prefer to issue debt rather than equity.

3-5-3 Influence of Stock Market Prices

As might be expected after reviewing the scores of the perceived importance of the firm's share price, the overall view of stock market prices' importance to the method of capital issue chosen does vary depending on the type of capital issue, although overall the stock market prices are not perceived as being that important. The figures are shown in App. 3-5-4 and 3-5-5, and they are discussed below in the context of the particular

type of issue.

In the context of the issue of new ordinary shares, the importance of 'stock market prices as a whole being high' was scored as 4 by 26.3% (accounting for 45.5% of the total score 4s) and as 5 by 21.1% (accounting for 66.7% of total score 5s). So considerably fewer respondents viewed stock market prices being high as important than viewed the firm's share price as being high as important. Indeed 21.1% scored the stock market price being high as 1 (i.e. 'not at all important'). The 'stock market prices as a whole being low' was scored 1 by 60%. As might be expected, it would seem that the respondents are less sensitive to the general level of stock market prices than to their firm's share price in relation to the issue of new ordinary shares.

Similarly for rights issues the overall stock market prices are not viewed as being as important as individual firm's share prices, with 23.1% scoring 'stock market prices as a whole being high' as 1 'not at all important', 15.4% as 2 and 38.5% as 3 (accounting respectively for 37.5%, 57.1% and 58.8% of total responses as 1s, 2s and 3s). The 'stock market prices as a whole being low' response was diffuse, although 45.5%

scored it as 1.

As in Section 3-5-2, when companies are making a rights issue there may be pressures on them to do so, therefore the level of importance that is attached to the general level of stock market prices is not high.

In the case of preference share issues and the importance of stock market prices as a whole, opinion is more or less evenly split across the 1 to 5 scale.

In the case of debt issues, the majority viewed stock market prices as a whole as 1 'not at all important', with 55.6% scoring high stock market prices as 1, and 33.3% scoring low stock market prices as 1. However, 16.7% did score 'stock market prices as a whole being low' as 5 'very important' (accounting for 50% of total score 5s) and 16.75% scored it as 4.

Overall, the evidence provided in sections 3-5-2 and 3-5-3, in relation to the perceived importance of both the individual firm's share price and stock market prices as a whole in the capital issue decision, indicates that low prices are given more importance in relation to issues

of preference shares and debt; whilst high prices are more important in the context of new issues of ordinary shares. These findings support Asquith and Mullins (1986) and Mikkelsen and Partch (1986), who found that the market believes that companies issue equity when their share price is high.

3-5-4 Influence of Interest Rates

The cross-tabulations to the responses to the importance of the level of interest rates in capital issue decisions are shown in App.3-5-6 and 3-5-7.

The 'level of interest rates being high' was not perceived as particularly important to the preference share issues although it was perceived as slightly more important to debt issues.

However, there is an interesting distinction in the scoring of this factor in relation to issues of new ordinary shares and in relation to rights issues of ordinary shares. A score of 5 'very important' was given by 31.6% of respondents in relation to the issue of new ordinary shares - interestingly this accounted for 100% of 5s for this factor across all issue types i.e. there

were no 5 scores from respondents in relation to the other issue types. However, 36.8% of respondents in relation to the issue of new ordinary shares ranked it as 1 'not at all important', so there is some inconsistency of opinion here. A score of 4 was given by 34.6% of respondents in assessing the importance of interest rates being high in relation to rights issues. Again a reasonable percentage (23.1%) ranked it as 1 'not at all important' in relation to rights issues.

By contrast when looking at the perceived importance of 'interest rates being low', this is scored 1 by 42.9% in relation to new issues of ordinary shares and by 44.4% in relation to rights issues of ordinary shares.

The opposite is seen in the responses relating to the importance of low interest rates in relation to debt issues, where 40% score it 4 and 60% as 5 (it is also scored as a 4 by 60% in relation to preference share issues). The 5 scores in relation to debt issues account for 85.7% of the total of 5s, the remaining 14.3% is represented by the 14.3% of the total responses in relation to ordinary shares which ranked it as a 5.

In conclusion, it is not surprising that a low interest rate is perceived as particularly important for debt issues, as debt issues are more attractive when the associated interest is low. On the other hand, a high interest rate is a factor in favour of issues of equity and against debt issues.

Low interest rates are not seen as an important factor for rights issues, whilst high interest rates are. This may be because the high interest rates are forcing the rights issue in the first place (for capital restructuring purposes).

3-5-5 Influence of Prevailing Market Conditions

Respondents were also asked to score the importance of prevailing market conditions to the making of capital issue decisions. It is shown in App. 3-5-8 that prevailing market conditions are scored 4 by the majority of responses in relation to ordinary shares (53.6%) and preference shares (62.5%), as 3 by the majority in relation to rights issues (39.4%), and as 5 by the majority in relation to debt issues (68.8%).

This would seem to indicate that prevailing market conditions are perceived as being of some

importance in the capital issue decision.

3-5-6 Influence of Financial Intermediaries

The analysis of the influence of financial intermediaries is shown in App. 3-5-9 and 3-5-10.

The majority response for each individual type of issue (except debt) is to score 'the advice of financial advisors' as 4; the respondents in relation to debt issues give a majority (43.8%) score of 3 (although 37.5% do score it as 4).

With regard to the 'merchant bank or other advisors' recommendation', the majority of respondents in relation to preference share issues and debt issues score it 4; whilst the majority of respondents in relation to new issues of ordinary shares, and rights issues, score it 3.

Overall the respondents consider the advice received from financial intermediaries to be fairly important to their decision, but it is by no means seen as an over-riding influence.

3-5-7 Influence of Leverage and Target Debt-Equity Ratio

The effect of whether or not 'leverage would have been too high' is examined in relation to the different types of issue in App. 3-5-11.

In relation to the total number of responses within each category of capital issue, this factor is scored 5 'very important' by 42.3% of respondents in relation to new issues of equity, by 38.7% in relation to rights issues and by 50% in relation to preference share issues. It is scored 5 by 21.4% of debt issues (this is higher than would have been expected, and in fact the question really applied to those issuing equity). In relation to the total of score 5s for this factor across all issue type responses, those relating to new issues of ordinary shares account for 36.7%, rights issues 40%, preference share issues 13.3%, and debt issues 10% - so in overall terms, the responses are as might be expected with the fact that leverage would have been too high if more debt had been issued being of importance to equity issues (including preference shares).

App.3-5-12 examines the perceived importance of

the effect on the leverage of the company of different types of capital issue.

The most common scale categorisation of the importance of leverage across all finance issue types was 4. This response (of 4) was observed for 42.9% of responses in relation to new issues of ordinary shares; other responses (of 4) were 36.4% of rights issues, 37.5% of preference share issues, and 56.3% of debt issues. There seems therefore to be a consensus that the effect of the issue on the leverage of the company is perceived as important.

The responses in relation to the effect on leverage from those having made rights issues yielded some particularly interesting figures with 30.3% scoring it 5 (accounting for 45.5% of all score 5s), and scores 1 and 2 each receiving 9.1% (accounting for 75% of all score 1s and all 2s). This is supportive of the fact that rights issues are often made for the purpose of reconstructing the balance sheet.

The effect of a target debt-equity ratio on the type of capital issue would seem to be perceived as more important to those issuing equity (be it new issues of ordinary shares, rights issues of

ordinary shares or preference share issues) and less important to those issuing debt (App.3-5-13). This is possibly because the issue of equity in order to avoid exceeding a target debt-equity ratio may be viewed as more critical than the issue of new debt to help achieve a target debt-equity ratio.

3-5-8 Perception of Signalling Implications

The perception of the type of capital issue as an indication of the firm's strength is examined in App.3-5-14. The responses are well distributed across the 1 to 5 scale, with the majority scoring it 3. This would imply that there is no ready consensus as to the strength of signal that a particular type of capital issue conveys.

3-5-9 Influence of Tax Exhaustion

Respondents were asked to score this particular factor only if the company was tax exhausted and so was unable to utilise the tax relief on debt interest. In App. 3-5-15 it is shown that there were 40 replies to this question, and some doubt could be expressed as to whether all of these responses came from finance directors whose companies were in fact tax exhausted as

subsequent analysis in Chapter 5 shows that this does not seem to have been the case. However, 76.6% in total rated it 1 'not at all important'. Within each type of issue this response was fairly evenly distributed, with 76.9% of all responses relating to issues of new ordinary shares scoring 1, 70% of rights issues, 75% of preference shares, and 90% of debt issues.

At first sight this is a surprising result given arguments along the lines of MM (1963) and Ross (1977), but the earlier comments on the reliability of these data may be apposite.

3-5-10 Influence of Industry Behaviour

As analysed in App. 3-5-16, the importance of the behaviour of other companies in the industry in the choice of capital issue was not seen as that important. No respondents scored it 5, and only 6% overall 4, the majority response scored it 2 (42.9%). The majority of responses for the 1 and 2 scores (indicating that industry behaviour was not perceived as important) were in relation to issues of new ordinary shares or rights issues of ordinary shares.

3-5-11 Influence of Attitude of Shareholders

In App. 3-5-17 it can be seen that, for each issue type, the attitude of the shareholders is perceived as an important influence, with the majority of responses for each issue type scoring 4 or 5. This is particularly marked for the preference shares and debt issues, with 75% of preference share responses and 46.7% of debt issues responses scoring it 4. These scores are in line with expectations.

3-5-12 Influence of Purpose of Issue

It was decided to examine the possible relationship between the type of capital issue and the primary purpose of that capital issue.

From App. 3-5-18 it can be seen that the highest proportion of issues of new ordinary shares (48.3%) are to fund an acquisition, and that new equity issues account for the largest proportion (50%) of all types of issue used for an acquisition.

In contrast, the highest proportion of rights issues (44.1%) are for capital restructuring, and again these issues account for the largest

proportion (44.1%) of all types of issue used for capital restructuring.

Both new issues of ordinary shares and rights issues have, as their next most 'popular' reason for issue that of funding an internal expansion - 28% of new issues of ordinary shares and 32.4% of rights issues.

Regarding preference share issues, 37.5% are used for the purpose of internal expansion and 37.5% for capital restructuring, with 25% being used for funding acquisitions.

Interestingly, for debt the most cited reason for the issue is capital restructuring 55.6% (accounting for 29.4% of all issues made for the purpose of capital restructuring); with funding an acquisition and funding internal expansion each accounting for 22.2%.

Two respondents cited the primary purpose of the issue under the 'other' section. These related to the flotations mentioned in Section 3-4-5.

3-5-13 Impact of Dividends

The importance of 'enhancing the capacity to

maintain dividend levels' on the capital issue choice is shown by App. 3-5-19.

There are no particularly strong opinions at the extreme ends of the scale, with 10.7% across all finance issue types scoring it 5 and 8.3% scoring it 1.

However a substantial number of responses rated it 4. These comprised as follows: in relation to new issues of ordinary shares 32.1%, for rights issues 31.3%, for preference share issues 37.5%, and for debt issues 31.3%.

This factor is much more likely to be scored as 1 or 2 by finance directors of companies making issues of new ordinary shares or rights issues, than by those making issues of preference shares.

Overall the effect of the capital issue on the company's ability to maintain or enhance dividend levels would seem to be more important to those issuing preference shares or debt.

The relationship between the industry sectors and the perceived influence of the capital issue on enhancing dividend levels was examined to see if clearer opinions emerged (App. 3-5-20). Table

TABLE 3.9B : INDUSTRY SECTOR AND ENHANCING THE CAPACITY TO MAINTAIN DIVIDEND

(5 point scale: 1= unimportant to
5= very important)

Industry Sector	Total	Score				
		1	2	3	4	5
Manufacturing	33 (100%)	2 (6.1%)	8 (24.2%)	7 (21.2%)	11 (33.3%)	5 (15.2%)
Service	21 (100%)	1 (4.8%)	4 (19.1%)	7 (33.3%)	7 (33.3%)	2 (9.5%)
Retail & Distribution	11 (100%)	3 (27.3%)	2 (18.2%)	3 (27.3%)	2 (18.2%)	1 (9.0%)
Property & Construction	19 (100%)	1 (5.3%)	4 (21.0%)	6 (31.6%)	7 (36.8%)	1 (5.3%)

3.9B shows that 33.3% of the manufacturing responses scored 'enhancing the capacity to maintain dividend' as 4 (accounting for 40.7% of 4s from all the sectors); 33.3% of service, 36.8% property and construction and 18.2% retail and distribution also scored it as 4. 27.3% of the retail and distribution responses scored it as 1 (accounting for 42.9% of score 1s from all the sectors).

Overall it would appear to be a more important consideration to the manufacturing sector, and of less importance to the retail and distribution sector.

3-5-14 Influence of EPS

(a) EPS Dilution

Respondents were asked to score the importance of not wanting to dilute the EPS by issuing more equity, only if their company had not issued equity.³

³The non-dilution of EPS caused by the issuing of debt instead of equity provides an attractive ex-post rationalisation. This question may therefore be 'leading', and the responses biased.

App. 3-5-21 shows that there were 25 responses in total but 3 of these were from companies where the most recent issue was one of new ordinary shares, and a further 3 from companies where the most recent issue was a rights issue. There were 4 replies from companies where the most recent issue was of preference shares and 15 from debt issues. It would therefore seem that 6 of the replies, those from companies issuing equity, must be discounted.

The 4 responses in relation to preference shares were split 2 scoring it 1, 1 scoring it 2 and 1 scoring it 4. Given the small number of responses in relation to preference share issues, it is difficult to draw conclusions from this.

The responses relating to debt issues and EPS dilution are quite spread across the scale, but scores of 5 and 4 (given by respondents in relation to debt issues) account for 100% and 80% of 5s and 4s respectively across all the finance issue types. The non-dilution of EPS would therefore seem to be important in the context of debt issues.

(b) Maintaining or Increasing EPS

Respondents (all) were asked to score the importance of 'maintaining or increasing earnings per share' to their chosen method of raising finance (App. 3-5-22).

In total 32.1% of respondents scored 'maintaining or increasing EPS' as 5 'very important' and 41.7% scored it 4 (the total of 4s and 5s accounting for 73.8% of responses from all issue types).

In relation to the different types of issue, 43.8% of debt issues scored it 5, and it was also scored 5 by 31.3% of rights issues, 28.6% of new issues of ordinary shares, and 25% of preference share issues.

46.9% of rights issues scored it 4, as did 43.8% of debt issues, 42.9% of new ordinary shares and 12.5% of preference shares. No responses scored it as a 2.

From the large proportion of 5 and 4 scale ratings, it can be seen that overall maintaining or increasing the EPS level is seen as one of the most important factors influencing the capital

issue decision. As mentioned earlier, this seems to be particularly important in the context of debt issues.

An interesting question is whether there would be a different emphasis placed on the importance of maintaining or increasing the EPS level by different industry sectors.

(c) Influence of Industry Sector on EPS

App. 3-5-23 contains the analysis of the perceived importance of 'maintaining or increasing the EPS level' in relation to industry sector. From the manufacturing sector, 48.5% scored it 5 (accounting for 59.3% of the total of 5s from all sectors). From the service sector, 28.6% scored it 5, whilst 21.1% from the property and construction sector scored it 5. In retail and distribution 9.1% scored it 5. All sectors gave a high proportion of 4s (36.4% for manufacturing, 47.6% for service, 36.4% for retail and distribution, and 47.4% from property and construction). This analysis is summarised in Table 3.10.

The impact of a capital issue on maintaining or increasing EPS would therefore seem to be of

TABLE 3.10 : INDUSTRY SECTOR AND MAINTAINING/INCREASING EPSLEVEL

(5 point scale: 1= unimportant to
5= very important)

Industry Sector	Total	Score			
		1	3	4	5
Manufacturing	33 (100%)	2 (6.0%)	3 (9.1%)	12 (36.4%)	16 (48.5%)
• Service	21 (100%)	0 (0.0%)	5 (23.8%)	10 (47.6%)	6 (28.6%)
Retail & Distribution	11 (100%)	0 (0.0%)	6 (54.5%)	4 (36.4%)	1 (9.1%)
Property & Construction	19 (100%)	0 (0.0%)	6 (31.6%)	9 (47.4%)	4 (21.0%)

Note : No sector scored 'maintaining/increasing Epslevel' as '2'.

importance to all sectors, but particularly the manufacturing sector.

(d) Effect of Reason for Issue on EPS

A cross-tabulation of the primary reason for issue and maintaining or increasing EPS (App. 3-5-24) shows that there is more importance (i.e. scale 5) attached to EPS in relation to an issue being made to fund an acquisition (53.6%, accounting for 55.6% of the total of 5s for all reasons) and in relation to an issue being made for capital restructuring (33.3%, accounting for 37% of the total of 5s for all reasons). Funding an internal expansion does not score 'maintaining or increasing EPS' as highly on the 5s (8.3%, accounting for 7.4% of all 5s), however 50% of respondents for this reason for issue (funding an internal expansion) do score it as 4. This analysis is summarised in Table 3.11.

Maintaining or increasing EPS is an important influence for all capital issues, but would seem to be particularly important for funding an acquisition, whilst being of lesser importance, comparatively speaking, for issues used for capital restructuring. This could be explained by the fact that companies making issues to fund

TABLE 3.11: REASON FOR ISSUE AND MAINTAINING/INCREASING EPSLEVEL

(5 point scale: 1= unimportant to
5= very important)

Reason for Issue	Total	Score			
		1	3	4	5
To fund an acquisition	28 (100%)	1 (3.6%)	2 (7.1%)	10 (35.7%)	15 (53.6%)
To fund internal expansion	24 (100%)	0 (0.0%)	10 (41.7%)	12 (50.0%)	2 (8.3%)
Capital restructuring	30 (100%)	1 (3.3%)	8 (26.7%)	11 (36.7%)	10 (33.3%)

Note: The two capital issues made for 'other reasons' were flotations

Note : No sector scored 'maintaining/increasing Epslevel' as '2'.

acquisitions are usually in a stronger position, and are able to make 'positive' decisions (for example, to increase EPS), whereas companies making issues for the purpose of capital restructuring are usually not in such a strong position and may therefore be unable to place the same emphasis on EPS growth (i.e. they may be concerned more with just surviving!).

(e) EPS Level and Dividend Level

Finally any relationship between maintaining or increasing EPS and enhancing the capacity to maintain dividend levels is shown in App. 3-5-25. 88.9% of respondents who scored EPS Level as a 5 also scored dividend level as a 5, and 63% who scored EPS level as a 4 also scored dividend level as a 4. One would expect this relationship given that the level of earnings has a direct impact on the ability of the company to pay dividends, at least in an accounting sense (high EPS does not necessarily mean high liquidity). Companies try to maintain their dividend capacity/capability over time, and earnings must be maintained (or increased) if the company is to be successful in this policy. Therefore the implications of the type of finance issue, and its effect on earnings, must also be considered

TABLE 3.12 : TYPE OF ISSUE & PERCEIVED INFLUENCE OF FACTORS

(5 point scale: 1= unimportant/not at all important to 5= very important)												
Factor	Ord.shares -new			Ord.shares -rights			Pref. shares			Debt		
	Mean Response	Standard Error	Rank	Mean Response	Standard Error	Rank	Mean Response	Standard Error	Rank	Mean Response	Standard Error	Rank
Firm share price high	3.75	0.29	3=	3.00	0.29	9	3.25	0.89	8=	1.60	0.30	18
Firm share price low	3.00	0.71	12	2.50	0.45	14	3.50	0.83	6	2.90	0.54	10
Stock market prices high	3.16	0.33	8	2.65	0.22	13	3.00	0.94	12=	1.89	0.37	17
Stock market prices low	2.00	0.57	17=	2.18	0.36	15	2.80	0.59	15	2.67	0.61	12=
Interest rates high	2.95	0.38	13	2.85	0.22	12	3.00	0.00	12=	2.67	0.51	12=
Interest rates low	2.43	0.53	15	1.78	0.26	18	3.40	0.36	7	4.60	0.15	2
Prevailing market cond.	3.64	0.19	5	3.73	0.16	3	4.13	0.21	2	4.63	0.15	1
Advice of fin. advisors	3.32	0.21	7	3.21	0.12	6	2.88	0.37	14	3.06	0.24	7=
Merchant bank/ other adv. recom.	3.08	0.23	11	2.94	0.18	11	3.13	0.45	10=	3.06	0.24	7=
Leverage would be too high	3.58	0.31	6	3.42	0.29	5	3.75	0.58	4	2.57	0.43	14
Effect on leverage	3.75	0.18	3=	3.70	0.22	4	3.88	0.28	3	4.06	0.16	4
To meet target debt-equity ratio	2.85	0.27	14	3.13	0.25	8	3.25	0.42	8=	2.00	0.34	16
To signal firm's strength	3.12	0.18	9	3.15	0.21	7	2.63	0.53	16	2.75	0.34	11
Company tax- exhausted	1.38	0.23	19	1.80	0.30	17	2.00	0.87	18=	1.10	0.09	19
Behaviour of other co.'s in the ind.	2.07	0.15	16	2.03	0.16	16	2.50	0.31	17	2.38	0.20	15
Attitude of shareholders	3.79	0.21	2	4.03	0.13	2	4.25	0.15	1	3.93	0.22	5
Enhancing capacity to maintain div.	3.11	0.20	10	2.97	0.20	10	3.13	0.33	10=	3.63	0.30	6
Co. did not want to dilute EPS	2.00	0.47	17=	1.00	0.00	19	2.00	0.61	18=	3.00	0.34	9
Maintaining or increasing EPS	3.93	0.17	1	4.09	0.13	1	3.63	0.30	5	4.19	0.25	3

in the context of dividends. This issue is taken up again in Chapter 7.

3-6 Conclusions

The analysis of the cross-tabulations above provides a great deal of information. As mentioned earlier, Table 3.12 summarises the perceived importance of the factors in relation to the types of issue. The mean response, the standard error and the ranking, are shown for every factor for each type of issue.

The factor ranked '1' (out of 19) in relation to issues of new ordinary shares is 'maintaining or increasing EPS'. This factor is also ranked '1' in relation to rights issues. Interestingly, it does not appear to be the most important factor for issues of preference shares and debt. It is ranked '5' in relation to issues of preference shares, and '3' in relation to debt issues. The factor ranked '1' in relation to preference share issues is 'attitude of shareholders' (this factor being ranked '2' in relation to issues of new ordinary shares and rights issues, and '9' in relation to debt issues). The factor ranked '1' in relation to debt issues is 'prevailing market conditions' (ranked '5' in relation to issues of

new shares, '3' in relation to rights issues, and '2' in relation to preference share issues).

A common core of factors can be identified - the three most important factors in relation to each type of issue are discussed below.

The factors perceived to be the most important in relation to issues of new ordinary shares are 'maintaining or increasing Epslevel' (ranked 1), 'attitude of shareholders' (ranked 2), and 'effect on leverage' and 'firm share price high' (jointly ranked 3). The same two factors ('maintaining or increasing Epslevel' and 'attitude of shareholders') are ranked 1 and 2 in relation to rights issues, although 'prevailing market conditions' is ranked 3.

The factors perceived to be the most important in relation to preference shares are 'attitude of shareholders' (ranked 1), prevailing market conditions (ranked 2), and 'effect on leverage' (ranked 3). Whilst in relation to debt issues, 'prevailing market conditions' is ranked 1, 'interest rates low' ranked 2, and 'maintaining or increasing Epslevel' is ranked 3.

'Maintaining or increasing Epslevel', 'attitude

of shareholders', and 'prevailing market conditions' are therefore ranked 1,2, or 3 in each of three out of the four issue types. 'Effect on leverage' is ranked 3 in relation to two types of issue (issues of new ordinary shares and rights issues). Two factors are ranked as 1,2, or 3 by only one type of issue - 'the firm share price being high' is ranked 3 in relation to issues of new ordinary shares; whilst 'interest rates being low' is ranked 3 in relation to issues of debt.

Referring back to the hypothesised 'triangle' of influences affecting capital issue choice, it can be seen that generally the firm specific factors seem to be viewed as being of more importance than the 'wider' factors. All issue types rank a firm specific factor as '1' except for debt issues which rank 'prevailing market conditions' as '1'.

Issues of new ordinary shares, rights issues, and (to a lesser extent) preference shares would therefore seem to be influenced more by firm specific factors than by external economic factors; whilst debt issues appear to be influenced more by external economic considerations than by firm specific ones.

The next Chapter uses multivariate analysis to determine whether the variables above point to the existence of underlying elements affecting capital issue decisions.

CHAPTER 4 : MULTIVARIATE ANALYSIS OF SURVEY

4-1 Introduction

The analysis in Chapter 3 revealed that certain variables were perceived as being more important in the capital issue decision than others.

One useful line of enquiry is to investigate whether or not the responses can be grouped in such a way that they are all indicative of a small number of underlying influences.

The technique used to investigate this is factor analysis which is based on the concept of 'rotation' of the data into orthogonal (i.e. independent) factors, these factors being linear combinations of the data, the weights being determined by a suitable algorithm.

4-2 Factor Analysis

In Chapter 3 (Appendix 3-6), it was shown that there is a significant relationship between some of the variables. It would therefore be expected that these variables would together form one or more factors. Factor analysis can determine the factors underlying the set of variables, and will

show which variables are most closely associated with each factor and weigh those variables most heavily in calculating the factor scores.

Factor analysis also helps in dealing with any multicollinearity problems, as one way of dealing with multicollinearity is to combine the highly correlated variables into a composite variable.

The variables used in the factor analysis were Epslevel, Divlevel, Prevmkt, Indbehav, Advfinad, Attsharh and Leverage. These variables comprise the variables in Question 11 of the Capital Issues Questionnaire. Question 11 listed various items which might be perceived to be important in making capital issues or acquisitions, and asked respondents to score them on a scale ranging from 1 'unimportant' to 5 'important'. The majority of respondents answered this section, depending on the variable there is a range from 83 to 85 out of the total questionnaires returned of 89. As high a number of subjects per variable as possible is desirable. These variables are also representative of the triangular framework of influences discussed in Chapter 3.

The variables Firmshph, Stmktph, Firmshpl, Stmktpl, Highlevg and Targetde were not included

for several reasons, firstly, the number of respondents to these varied widely from 26 to 78; secondly, the high correlations of 0.66, 0.74 and 0.90 were indicative of severe multicollinearity, and the variables would have had to have been dropped from the subsequent discriminant analysis (see Section 4-3 below); thirdly, they are fairly well proxied by other variables mentioned above.

4-2-1 Initial Statistics

Table 4.1 details the initial statistics. The first factor that is extracted is the linear combination of variables which accounts for the largest amount of variance shared by the variables. The second factor consists of the next largest amount of variance which is not related to or explained by the first one, etc. It should be noted that the factors are unrelated or orthogonal to one another.

The communality statistic for each variable is the proportion of the variance in the variable explained by all the factors - it can range from 0 indicating no association, to 1 indicating a perfect association. The communality of each variable in the initial statistics is 1 as the initial analysis has as many factors as there are

TABLE 4.1 : FACTOR ANALYSIS - INITIAL STATISTICS

INITIAL STATISTICS:

VARIABLE	COMMUNALITY	*	FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
EPSLEVEL	1.00000	*	1	2.42441	34.6	34.6
DIVLEVEL	1.00000	*	2	1.15489	16.5	51.1
PREVMKT	1.00000	*	3	.94781	13.5	64.7
INJSEHAV	1.00000	*	4	.60207	11.5	76.1
ADVFINAD	1.00000	*	5	.60053	8.6	84.7
ATTSHARH	1.00000	*	6	.55909	8.1	92.8
LEVERAGE	1.00000	*	7	.50120	7.2	100.0

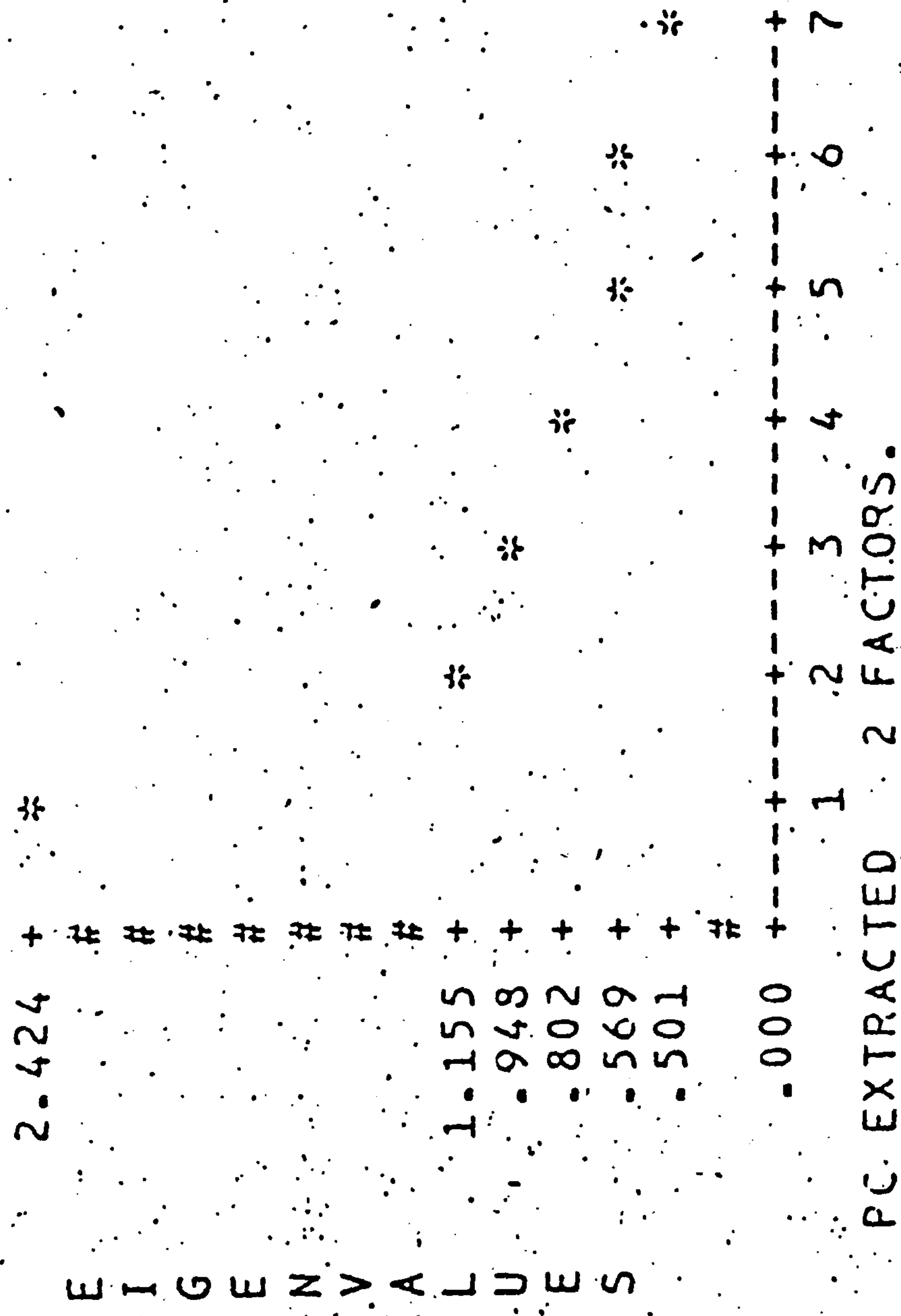
variables.

The statistics to the right of the third column, which lists the factors, apply to the factor number not the variable named on the far left. The eigenvalues (i.e. amount of variance accounted for) therefore refer to the factors, not the variables.

The eigenvalue of 2.42441 in the first row indicates that the amount of variance underlying all the variables associated with factor 1 is 2.42441, representing 34.6% of the total variance. For factor 2 the eigenvalue is 1.15489, which accounts for 16.5% of the total variance; for factor 3 the eigenvalue is 0.94781, which accounts for 13.5% of the total variance, etc.

A scree plot, as proposed by Cattell (1966), based on the initial statistics is shown in Fig. 4.1. The plot shows the descending variance accounted for by the factors initially extracted. There is a break between the steep slope of the initial factors and the gentle one of the later factors. Factors 1 and 2 would be retained as they are the factors which lie before the point at which the eigenvalues seem to level off.

FIG. 4.1 : SCREE PLOT



Also, according to the Kaiser criterion, the factors to be retained in the further analysis are those with eigenvalues of greater than 1, again factors 1 and 2.

4-2-2 Results of First Extraction

Following the initial statistics, the Factor Matrix, Table 4.2, gives more information about the first extraction. The loadings of each variable on each factor are produced, the factor loading being a correlation of a variable with a factor. The factor loading of Epslevel on factor 1 is 0.55965, this means that factor 1 accounts for 31% $(0.55965)^2$ of the variance in Epslevel. Similarly, factor 1 accounts for 52% $(0.72286)^2$ of the variance in Divlevel. Factor 1 also accounts for the majority of the variance in Attsharh and Leverage, being 49% for each. On the other hand, factor 2 accounts for 35% of the variance in Prevmkt, but does not account for more than 35% of the variance for any individual variable. Epslevel has a negative loading with factor 2 of -0.58884 (35%).

4-2-3 Final Statistics

The final statistics are displayed in Table 4.3,

TABLE 4.2 : FACTOR MATRIX

FACTOR MATRIX:	FACTOR 1	FACTOR 2
EPSLEVEL	.55965	-.58884
DIVLEVEL	.72286	-.33351
PREVMKT	.50950	.59275
INDBEHAV	.45083	.34130
ADVFINAD	.37785	.41687
ATTSHARH	.70020	.13321
LEVERAGE	.70197	-.19380

TABLE 4.3 : FACTOR ANALYSIS - FINAL STATISTICS

FINAL STATISTICS:

VARIABLE	COMMUNALITY	#	FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
EPSLEVEL	.65994	#	1	2.42441	34.6	34.6
DIVLEVEL	.63376	#	2	1.15489	16.5	51.1
PREVMKT	.61095	#				
INDBEHAV	.31974	#				
ADVFINAD	.31655	#				
ATTSHARH	.50803	#				
LEVERAGE	.53033	#				

TABLE 4.4 : FACTOR ANALYSIS - ROTATED FACTOR MATRIX

VARIMAX ROTATION 1 FOR EXTRACTION 1 IN ANALYSIS 1 - KAISER NORMALIZATION.

VARIMAX CONVERGED IN 3 ITERATIONS.

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2
EPSLEVEL	.80384	-.11742
DIVLEVEL	.77449	.18419
PREVMKT	.03458	.78087
INDBEHAV	.14375	.54637
ADVFINAD	.03968	.56123
ATTSHARH	.46540	.53725
LEVERAGE	.67177	.28116

and they are based only on factors with an eigenvalue greater than 1. The table shows that 43.55% $(0.65994)^2$ of the variance for Epslevel has been accounted for by factor 1, and 40.16% $(0.63376)^2$ of the variance for Divlevel by factor 2.

However, the first factors extracted from an analysis are those which account for the maximum amount of variance. In using this procedure, the factor may have distorted in order to accommodate some of the variance of variables that are not really part of the factor. In order to correct for this distortion and thereby increase the interpretability of factors, they are rotated to maximise the loadings of some of the variables. These variables can then be used to identify the meaning of the factors.

4-2-4 Varimax Orthogonal Rotation

A varimax orthogonal rotation was used, which produces calculations to maximise the tendency of each variable to load highly on only one factor. This converged in three iterations. The results are shown in Table 4.4.

Each factor is now more clearly identified by a

subset of variables that load high on it but low on other factors. This is the case for all the variables except 'Attsharh' which loads 0.4684 on factor 1 and 0.53725 on factor 2. In trying to ascertain what the factors could represent, the convention was followed of omitting variables correlating less than 0.3 with a factor as they account for less than 9% of the variance.

Epslevel, Divlevel, and Leverage load heavily on Factor 1 ; whilst Prevmt, Indbehav and Advfinad load more heavily on factor 2 (Attsharh, as mentioned above, loads fairly evenly on both factors). The variables' loadings are actually quite well split across the two factors, being generally high on one factor and low on another.

In analysing the factor components it transpired that the factors had quite distinct characteristics. Factor 1 was related to firm specific financial items, viz, the level of earnings per share, the level of dividends, and the leverage of the firm. Factor 2 was related to market influences, viz, prevailing market conditions, behaviour of other companies in the industry, and also the advice of financial advisors. Therefore, Factor 1 could be defined as 'Firm Specific' and Factor 2 as 'Market

Influences'.

This fits in very neatly with the prior hypothesis that the influences underlying capital issue choice can be split into three. The triangular set of influences outlined previously comprised of firm specific effects, external economic effects, and advice of financial intermediaries. There would appear to be one set of factors, the internal firm specific effects, which are related; and a second set of factors, the external influences, which are related. The third apex of the triangle is represented by the financial intermediaries, and the implication is that the advice of the financial intermediaries reflects the external influences (because of its association with factor 2).

The amount of variance that each of the orthogonally rotated factors accounts for can be calculated as follows:

$$\sigma^2 = \sum \frac{a_1 r^2 + a_2 r^2 + \dots + a_n r^2}{N} \times 100$$

where

a_1 = variable 1

a_2 = variable 2, etc

r = correlation for variable

N = number of variables

For factor 1, this is 27.7% and for factor 2 23.4%. The 'Firm Specific' factor therefore accounts for marginally more variance than the 'Market Influences' factor.

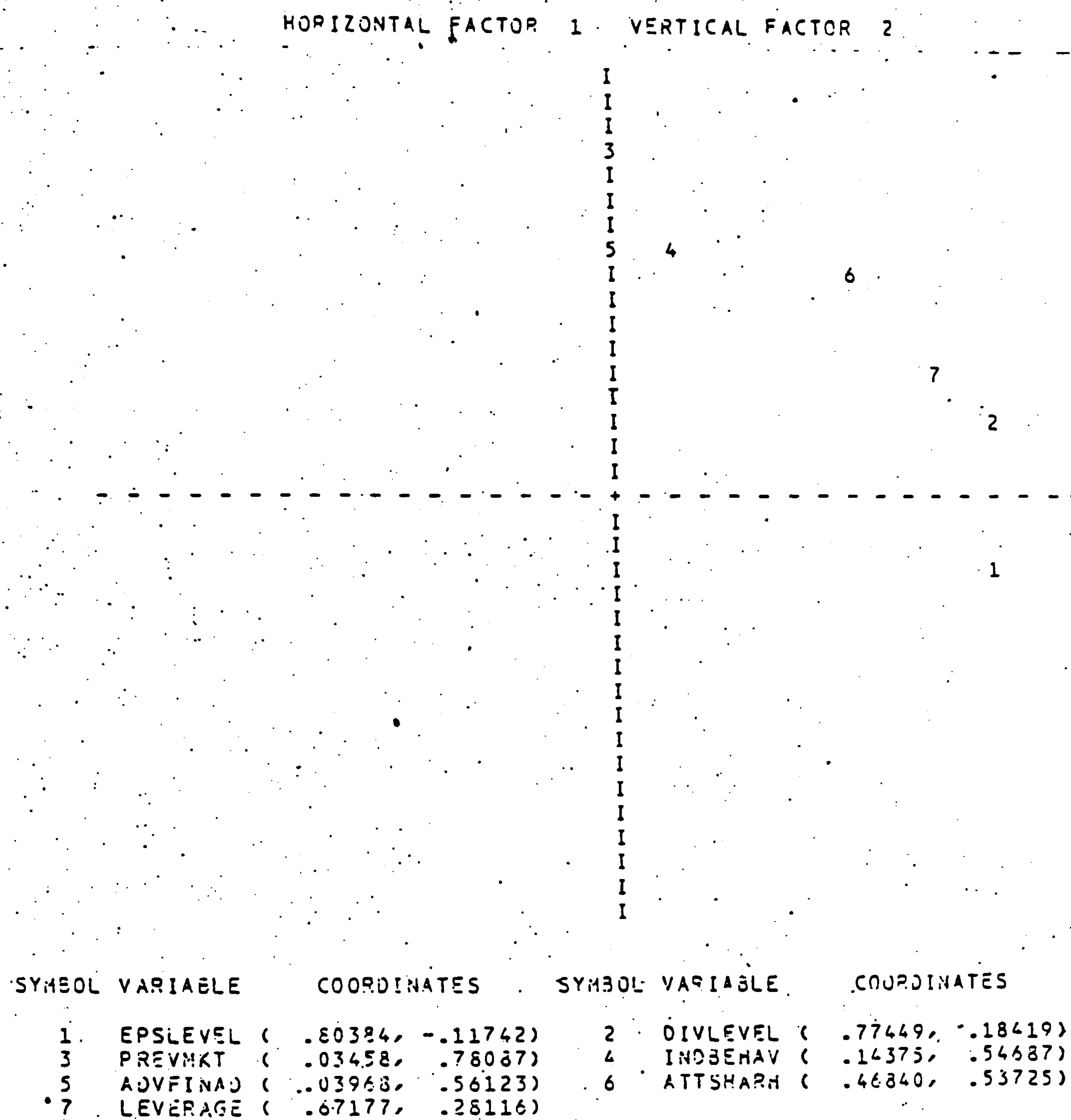
A plot of the variables and the two factors is shown in Fig. 4.2. Factor 1 is on the horizontal and is strongly associated with the variables Epslevel and Divlevel, also Leverage. Factor 2 on the vertical is strongly associated with the variables Prevmt, Advfinad and Indbehav. Attsharh exhibits association with both factors.

4-2-5 Summary of Factor Analysis Results

A crucial point about the above factor analysis is that Factor 1 contains financial variables of the firm, whilst Factor 2 emphasises the background aspects of market information. These factors converged after only three iterations, which is quite quick, and indicates that the data are stable in pointing to that dichotomy.

Factor 1 accounts for most of the variance, albeit just slightly more than Factor 2, and Epslevel is the variable most heavily loaded on

FIG. 4.2 : FACTOR PLOT



Factor 1, with Divlevel loaded the second most heavily. Epslevel is the most heavily loaded of any of the variables on either factor. The analysis is therefore supportive of the commonly held belief that EPS is perceived as an important influence when making a capital issue decision, and it gives justification for further study of EPS.

4-3 Discriminant Analysis

The foregoing analysis identified two factors (each encompassing several variables) which are important for capital issue decisions. Either of these two factors may have more influence on one type of capital issue vis-a-vis another. This question is pursued below by means of discriminant analysis.

Discriminant analysis is a useful technique for looking at the associations between a set of independent variables and a dependent variable (particularly when the dependent variable has a limited number of values). The results can help in deciding into which category of a variable a case is most likely to fall.

4-3-1 Advantage of Discriminant Analysis

It is not possible to use regression-based linear regression techniques, such as logit and probit to investigate the influences on the capital issue choice because such techniques only allow dichotomous classification. Discriminant analysis, on the other hand, enables a number of classifications of the dependent variable. However increasing this number reduces the power of the discriminant function to partition the sample accurately.

For the discriminant analysis undertaken the dependent variable, representing the debt/equity choice, has the four categories: 'Ordinary shares-new issue', 'Ordinary shares-rights issue', 'Preference shares', and 'Debt'.

The following analysis is therefore discriminating between the most commonly used forms of equity: new ordinary shares, rights issues, preference shares; and debt.

4-3-2 Running the Discriminant Analysis

The discriminant analysis was run with a prior probability for each group of 0.25, i.e. it was assumed that each dependent variable was equally

likely, not that the probability was proportional to the group size. When group sizes are unequal, small groups can have a low percentage of correct classifications even though the overall correct classification percentage is high. This problem can be exacerbated if the discriminant analysis is run with the probability for each group being based on prior knowledge of the proportion in each category of the sample, as it may result in the classification of a disproportionately large number of cases into the category that has the highest proportion of the cases. To ensure that prior assumptions were not affecting the results, the discriminant analysis was run with prior probabilities based on the number in each category as well. No differences were apparent - the tables obtained being the same as previously.

4-3-3 Results of Discriminant Analysis

The outcome of the discriminant analysis is shown in Tables 4.5 - 4.9.

Table 4.5 shows a table of classification function coefficients which can be used to classify a target sample. One set of classification coefficients is produced for each group. A case would then be classified into the

TABLE 4.5 : DISCRIMINANT ANALYSIS - CLASSIFICATION FUNCTION COEFFICIENTS

CLASSIFICATION FUNCTION COEFFICIENTS (FISHER'S LINEAR DISCRIMINANT FUNCTIONS)				
RCISTYPE=	1	2	3	4
	Ordinary - new	Ordinary - rights	Pref shares	Debt
EPSLEVEL	4.199103	4.510243	3.584343	4.327298
DIVLEVEL	-0.4005602	-0.6927108	-0.4480282	-0.1967666E-01
PREVMKT	3.062591	3.003914	3.474519	4.565260
INDSEHAV	0.8980444	0.8651200	1.485084	0.9022404
ADVFINAD	2.090270	1.946945	1.313579	1.534173
ATTSHARH	1.436427	2.036165	2.146146	0.9886172
LEVERAGE	0.9752640	0.8018763	1.078903	1.068652
(CONSTANT)	-23.63529	-24.75490	-24.74463	-28.28131

TABLE 4.6 : DISCRIMINANT ANALYSIS - CANONICAL DISCRIMINANT FUNCTIONS

CANONICAL DISCRIMINANT FUNCTIONS									
FCN	EIGENVALUE	PCT OF VARIANCE	CUM PCT	CANONICAL CORR	AFTER FCN	WILKS' LAMBDA	CHISQUARE	DF	SIG
					0	0.6828	29.189	21	0.1095
1#	0.2946	69.77	69.77	0.4771	1	0.8840	9.434	12	0.6655
2#	0.0856	20.26	90.03	0.2307	2	0.9596	3.154	5	0.6762
3#	0.0421	9.97	100.00	0.2010					

MARKS THE 3 CANONICAL DISCRIMINANT FUNCTIONS REMAINING IN THE ANALYSIS.

group which produces the highest classification score. As in this case there are four groups, it would be necessary to compute four linear combinations for each case in the target sample. Epslevel has the highest coefficient for groups 1, 2 and 3, and the second highest for group 4. Classification of a target sample based on the above coefficients has not been pursued in this thesis, all of the questionnaire replies having been used to generate the discriminant analysis itself.

The discriminant analysis technique aims to maximise the between-groups differences on discriminant scores, and to minimise the within-groups differences. Therefore one can see how well the discriminant analysis has worked by comparing the between-groups variance to the within-groups variance. In the discriminant analysis the eigenvalue is the between-groups variance divided by the within-groups variance, so the higher the eigenvalue the better. An eigenvalue of 0 would mean that the discriminant analysis had no discriminating value, whereas an eigenvalue above 0.40 is considered excellent. From Table 4.6, it can be seen that Function 1 has the highest eigenvalue of 0.2946, whilst functions 2 and 3 are 0.0856 and 0.0421

respectively. Function 1 accounts for 69.77% of the variance, whilst functions 2 and 3 account for 20.26% and 9.97% respectively.

The canonical correlation squared (being the ratio of the between-groups variance in scores on the function to the total variance in scores) is a good measure of how well the function discriminates between groups. The scale can range from 0.0 to 1.0, and function 1 scores highest at 0.4771, whilst functions 2 and 3 score 0.2807 and 0.2010 respectively.

A standard diagnostic for discriminant analysis is the Wilks' lambda statistic which indicates how well the discriminant function explains data. The lambda for 'After Function (Fcn) 1' indicates the proportion of the variance accounted for by group differences after the effects of function 1 are removed.

Wilks' lambda is calculated as the within-groups sum of squares divided by the total sum of squares, and can vary between 0 and 1.0 (the lower Wilks' lambda, the better the discriminating power of the model). The Wilks' lambda for when all the functions are in the analysis is 0.6828, indicating that the

differences between groups account for 29% of the variance in the predicting variables. So the lambda of 0.8840 indicates that the proportion of accounted for variance remaining after the effects of function 1 are removed is 0.1160. Similarly, the lambda of 0.9596 indicates that the proportion of accounted for variance remaining after the effects of function 2 are removed is 0.0404. The effects of function 1 are therefore much greater than the effects of functions 2 or 3. When all the functions are in the analysis the significance is 0.1095, when function 1 is dropped from the analysis it is 0.6655, and when function 2 is dropped it is 0.6762.

It is useful to examine the association of the variables with the functions, using the standardized canonical discriminant function coefficients. These are shown in Table 4.7.

The coefficients of the first function are the most important as the first function accounts for the largest amount of variance. The variables with the greatest effect on the type of capital issue are Prevmkt (0.96441), Divlevel (0.45451), Attsharh (-0.49572), and Advfinad (-0.38020). Function 2 is heavily loaded with Attsharh (-

TABLE 4.7 : STANDARDIZED CANONICAL DISCRIMINANT FUNCTION COEFFICIENTS

	FUNC 1	FUNC 2	FUNC 3
EPSLEVEL	-0.12951	0.51994	0.83804
DIVLEVEL	0.45451	0.28390	-0.44239
PREVMKT	0.96441	0.18290	0.31799
INDBEHAV	0.07474	-0.47837	-0.27610
ADVFIND	-0.38020	0.54096	-0.18296
ATTSHARH	-0.49572	-0.84974	0.52942
LEVERAGE	0.17327	-0.03195	-0.36636

TABLE 4.8 : DISCRIMINANT ANALYSIS - STRUCTURE MATRIX

STRUCTURE MATRIX:
POOLED WITHIN-GROUPS CORRELATIONS BETWEEN DISCRIMINATING VARIABLES
AND CANONICAL DISCRIMINANT FUNCTIONS
(VARIABLES ORDERED BY SIZE OF CORRELATION WITHIN FUNCTION)

	FUNC 1	FUNC 2	FUNC 3
PREVMKT	0.76565*	-0.10290	0.33383
DIVLEVEL	0.32061*	0.15853	-0.08545
LEVERAGE	0.20523*	-0.00868	-0.06648
ATTSHARH	0.00933	-0.48499*	0.45188
ADVFIND	-0.17333	0.35595*	-0.12172
INDBEHAV	0.23728	-0.35096*	-0.17929
EPSLEVEL	0.01946	0.38741	0.62131*

TABLE 4.9 : DISCRIMINANT ANALYSIS - GROUP CENTROIDS

CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP MEANS (GROUP CENTROIDS)

GROUP	FUNC 1	FUNC 2	FUNC 3
1	-0.22249	0.18112	-0.23555
2	-0.37265	-0.03920	0.20638
3	0.33287	-0.81437	-0.18293
4	1.04599	0.17985	0.09698

0.84974), Epslevel (0.51994), Advfinad (0.54096), and Indbehav (-0.47887). Function 3 is also heavily loaded by Epslevel (0.83804), with Attsharh (0.52942) and Divlevel (-0.44239) also loading on it.

In the structure matrix, shown in Table 4.8 the pooled within-groups correlations between the discriminating variables and the canonical discriminant functions show that Prevmkt, Divlevel and Leverage are correlated the most within function 1; Attsharh, Advfinad and Indbehav within function 2; and Epslevel within function 3. Correlations for variables below 0.2 with functions are considered to have only a weak association, and their effects tend to be regarded as unstable.

Finally, the canonical discriminant functions are evaluated at group means (group centroids), and are shown in Table 4.9.

Group centroids are the means of each group on each function. The predicted group membership, i.e. which of the dependent variable's four values the analysis allocates each case to, is the one whose centroid is closest to the case's discriminant function score.

4-3-4 Summary of Discriminant Analysis Results

The classification results are shown in Table 4.10. The percentage of grouped cases correctly classified is 48.19%, i.e. of the 83 cases used in the discriminant analysis, 40 were correctly classified. Whilst not as high as one might have hoped, this is considerably better than a chance classification which would be 25%.

The analysis is most successful in classifying capital issues from group 3, the preference shares group, where 75% were correctly classified; and capital issues from group 4, the debt issue group, where 66.7% were correctly classified. It was least successful in analysing issues from group 1, the new issues of ordinary shares, where 39.3% were correctly analysed. 28.6% of group 1 were misclassified as group 2, (rights issues of ordinary shares), which is understandable as the group 1 issues would presumably resemble the group 2 issues very closely (although the implication here is that 28.6% of group 1 issues resemble group 2 issues more than group 1 issues!).

These results would suggest a greater diversity amongst issues in group 1 in terms of the

TABLE 4.10 : DISCRIMINANT ANALYSIS - CLASSIFICATION RESULTS

CLASSIFICATION RESULTS -				
ACTUAL GROUP	NO. OF CASES	PREDICTED GROUP MEMBERSHIP		
		1	2	3
GROUP				4
1	28	11	8	5
Ordinary - new		39.3%	28.6%	17.9%
GROUP 2	32	6	13	6
Ordinary - rights		18.7%	40.6%	18.7%
GROUP 3	8	1	1	0
Pref shares		12.5%	12.5%	0.0%
GROUP 4	15	0	1	10
Debt		0.0%	6.7%	66.7%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 48.19%

CLASSIFICATION PROCESSING SUMMARY

89 CASES WERE PROCESSED.
0 CASES WERE EXCLUDED FOR MISSING OR OUT-OF-RANGE GROUP CODES.
6 CASES HAD AT LEAST ONE MISSING DISCRIMINATING VARIABLE..
33 CASES WERE USED FOR PRINTED OUTPUT.

discriminating variables (i.e. there is more divergence amongst group 1 issues). Incidentally, 40.6% of group 2 issues were correctly classified as such. The results do show the majority of issues for each group being correctly classified, although the analysis is most successful in analysing issues from groups 3 and 4. Some further analysis of the classification has been carried out and is mentioned below after the various classification plots for the analysis detailed above have been discussed.

4-3-5 Classification Plots

Classification plots are useful for examining the relationship of groups to each other and graphically depicting misclassification. The axes of the scatterplots are the discriminant scores calculated from the first two discriminant functions extracted during the analysis.

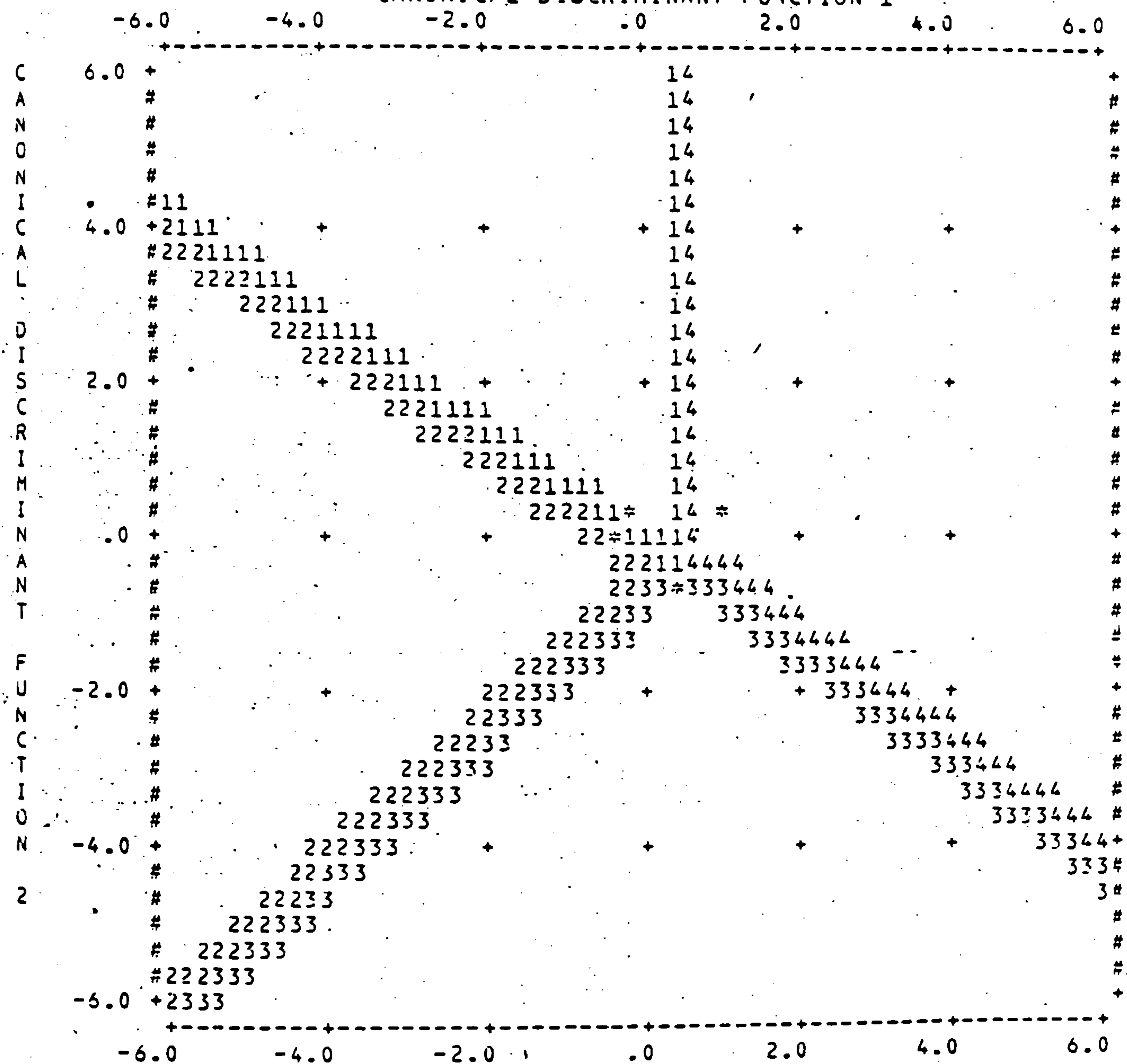
A territorial map, outlining the general territory for each group, is shown in Fig.4.3. The territorial map can be compared with the all-groups plot, shown in Fig. 4.4, and the misclassified cases identified as these are the cases not falling within the outline boundaries

FIG. 4.3 : DISCRIMINANT ANALYSIS - TERRITORIAL MAP

SYMBOLS USED IN TERRITORIAL MAP
SYMBOL GROUP LABEL

1	1 Ordinary - new
2	2 Ordinary - rights
3	3 Pref shares
4	4 Debt
#	GROUP CENTROIDS

TERRITORIAL MAP * INDICATES A GROUP CENTROID
(ASSUMING ALL FUNCTIONS BUT THE FIRST TWO ARE ZERO)
CANONICAL DISCRIMINANT FUNCTION 1



on the territorial map (this is done most easily by making a transparency of the scatterplot and placing it over the territorial map). In each plot, the new issues of ordinary shares are represented by the symbol '1', rights issues of ordinary shares are represented by '2', preference share issues by '3', and debt issues by '4'.

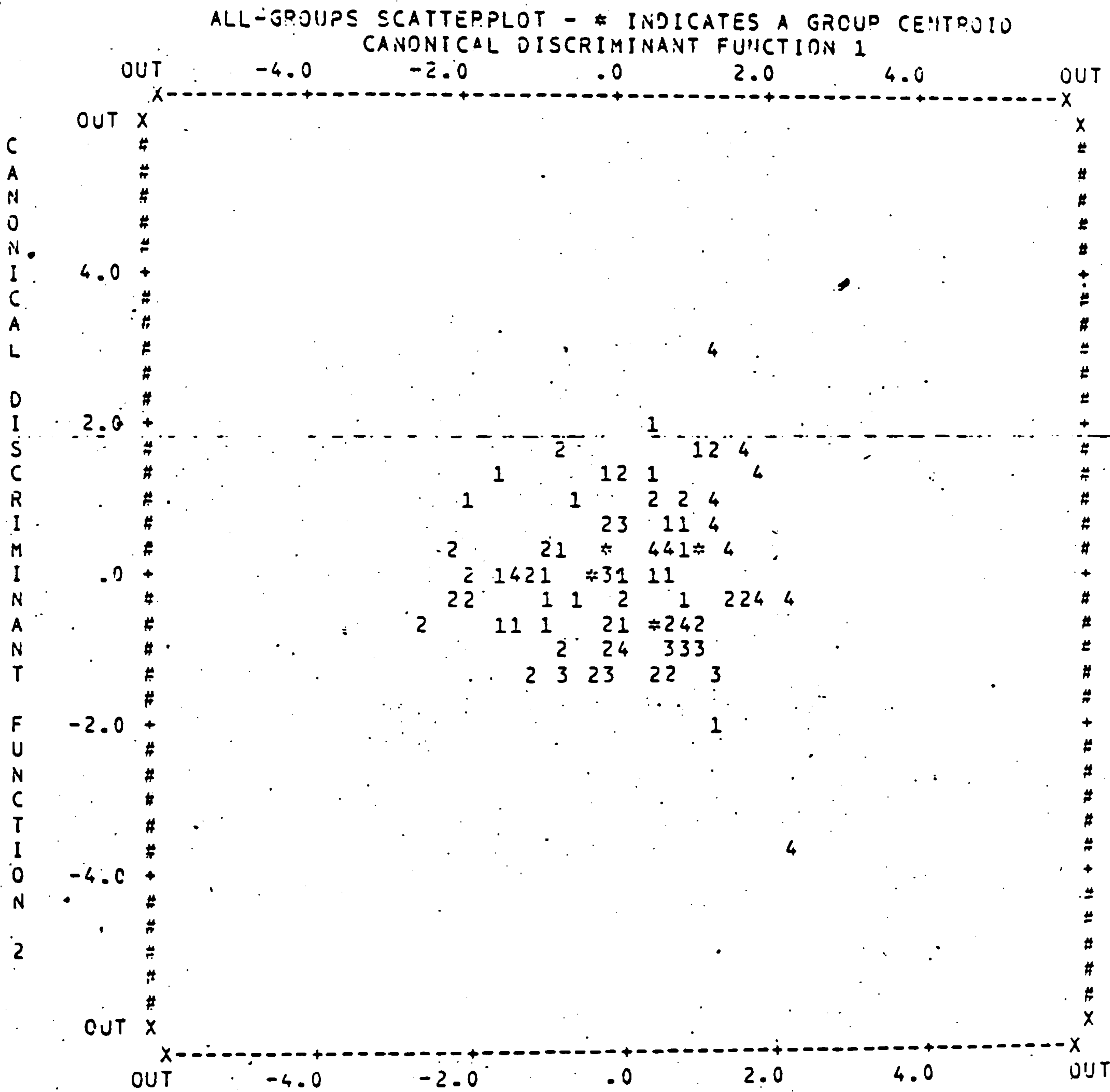
Separate-groups scatterplots show a scatterplot for each individual group. These are shown for new issues of ordinary shares (Fig. 4.5), rights issues of ordinary shares (Fig. 4.6), preference share issues (Fig. 4.7) and debt issues (Fig. 4.8).

It was mentioned above that some further analysis of the classification results was done to investigate whether the discriminating variables would be better at classifying equity or debt. This involved running the discriminant with groups 1 and 2 only, and then with groups 3 and 4 only. In each case only one canonical discriminant function was produced. For groups 1 and 2, the percent of groups correctly classified was 55%; whilst for groups 3 and 4, the percent of groups correctly classified was 69.57%.

FIG. 4.4 : ALL GROUPS SCATTERPLOT

SYMBOLS USED IN PLOTS
SYMBOL GROUP LABEL

1	1	Ordinary - new
2	2	Ordinary - rights
3	3	Pref shares
4	4	Debt
*		GROUP CENTROIDS



**FIG. 4.5 : DISCRIMINANT ANALYSIS - SEPARATE GROUPS PLOT :
NEW ISSUES OF ORDINARY SHARES**

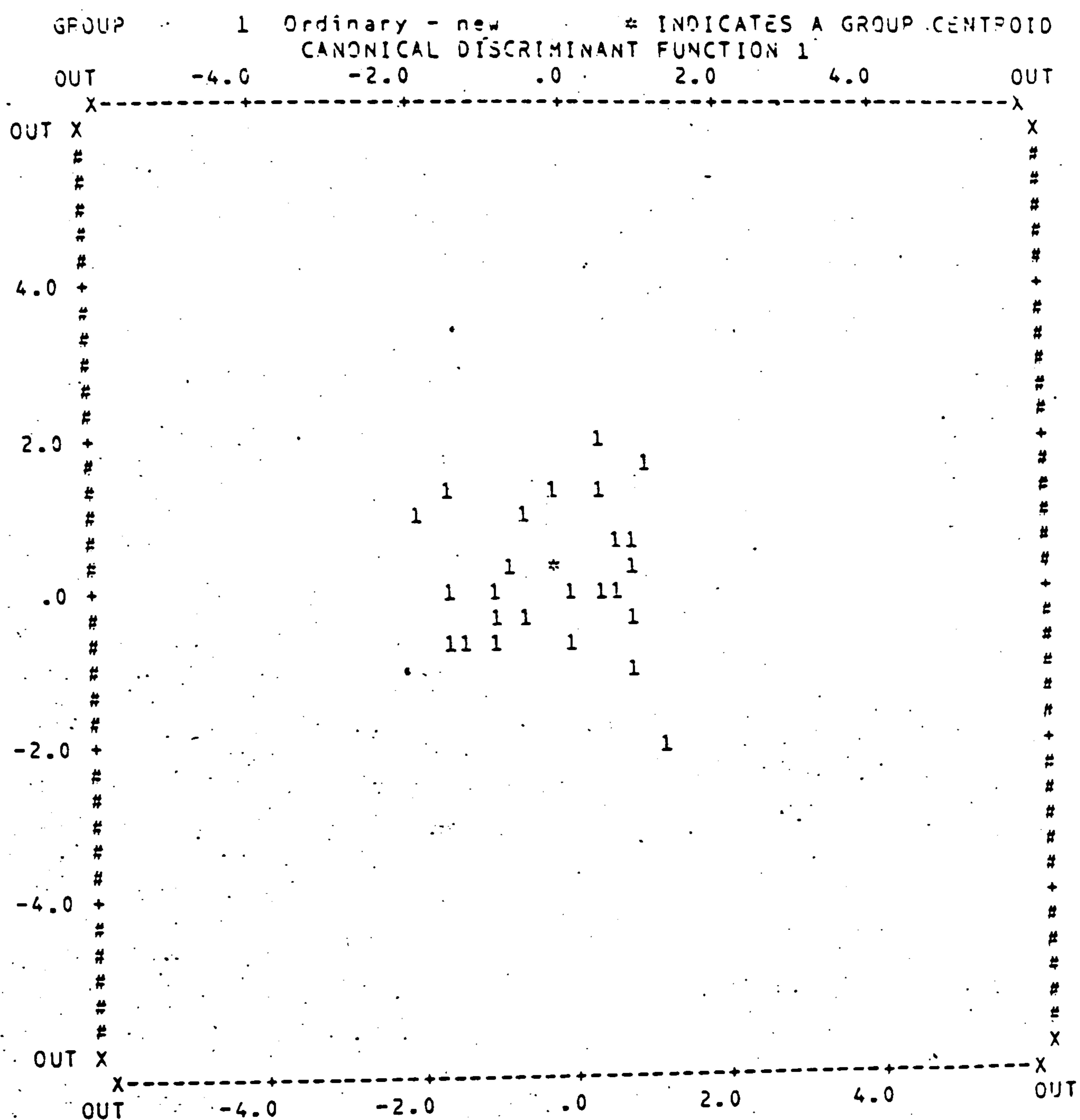


FIG. 4.6 : DISCRIMINANT ANALYSIS - SEPARATE GROUPS PLOT :
RIGHTS ISSUES OF ORDINARY SHARES

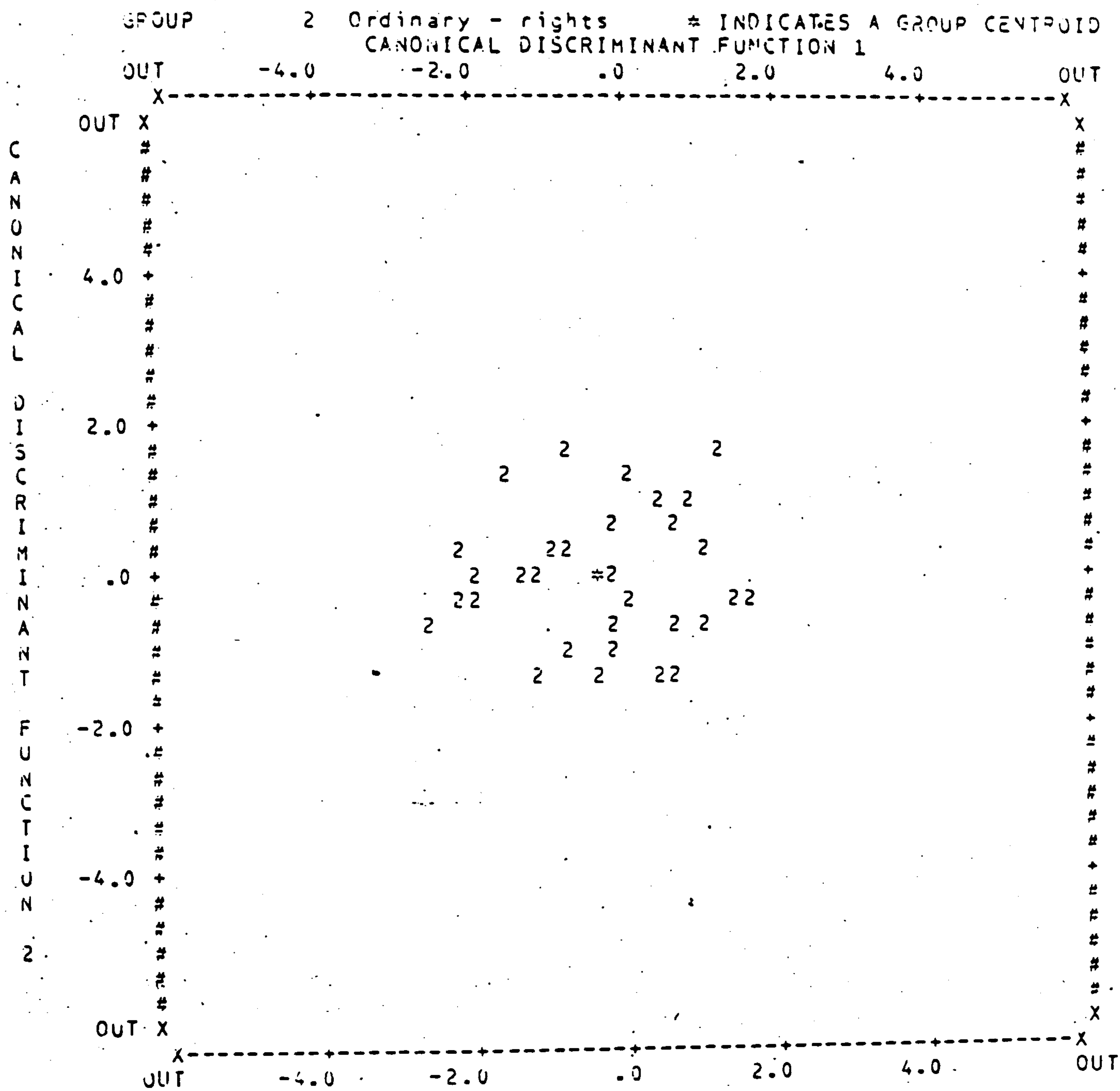


FIG. 4.7 : DISCRIMINANT ANALYSIS : SEPARATE GROUPS PLOT :
PREFERENCE SHARE ISSUES

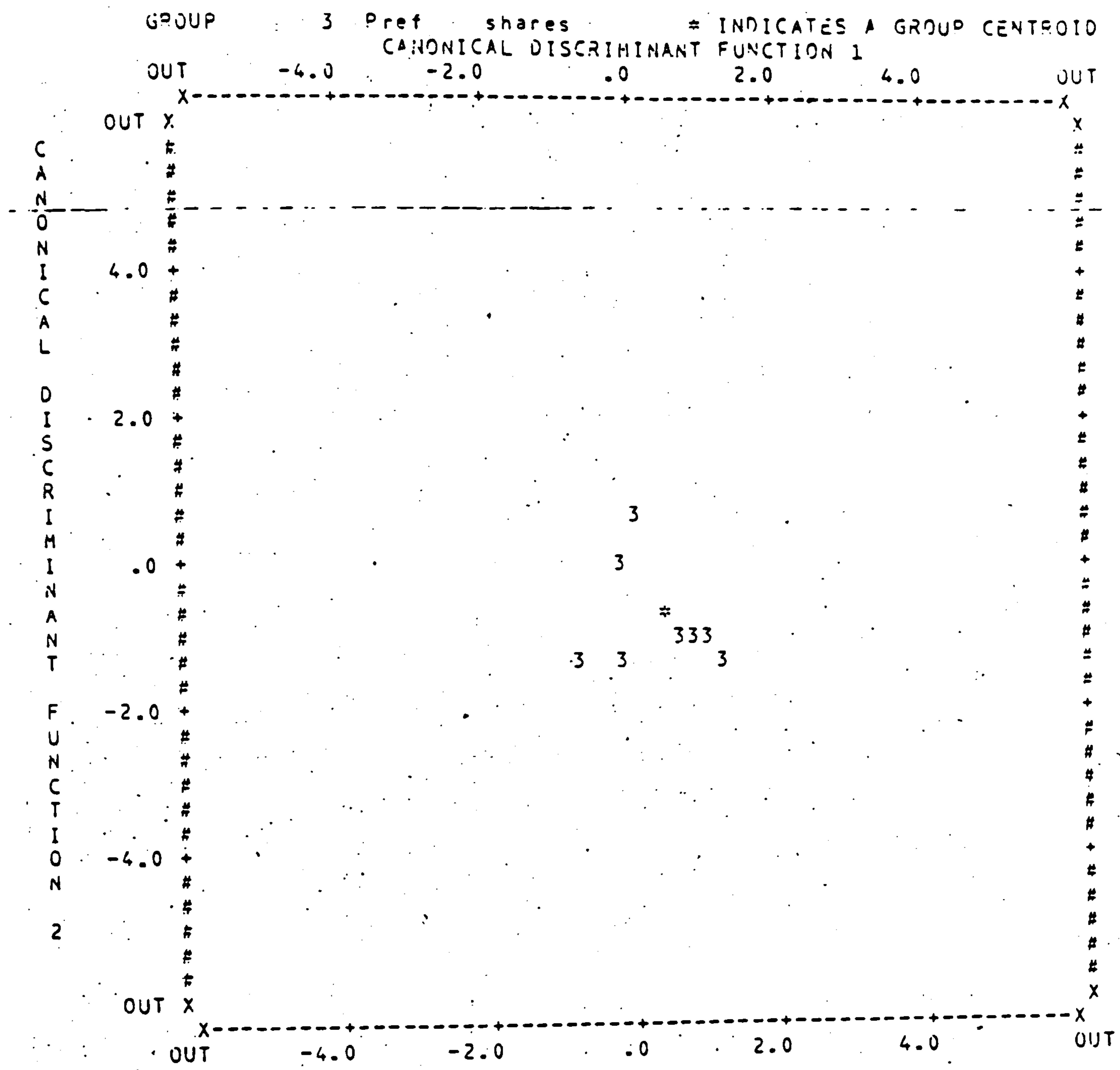
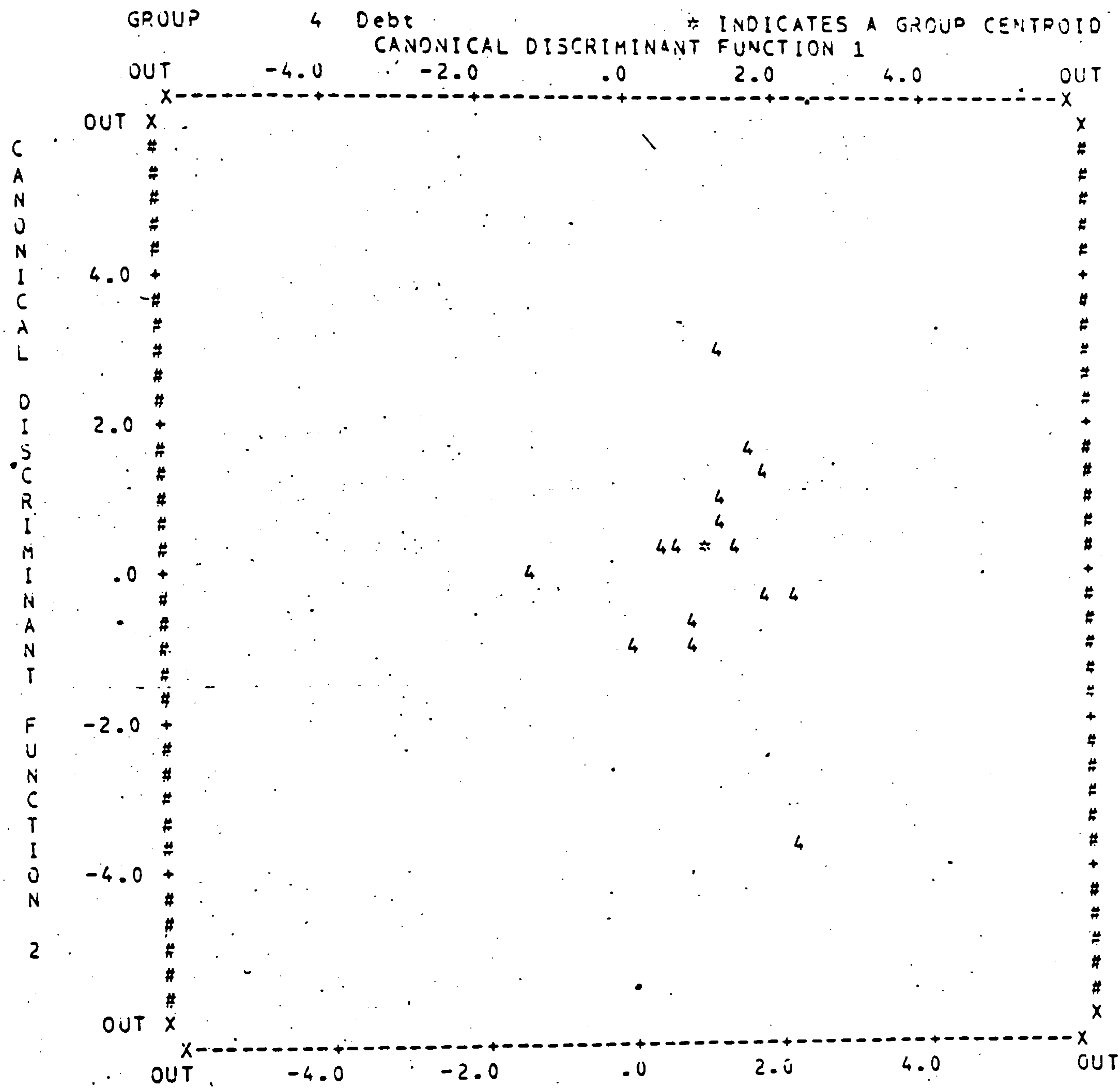


FIG 4.8 : DISCRIMINANT ANALYSIS - SEPARATE GROUPS PLOT :
DEBT ISSUES



From the discriminant analysis carried out, there would appear to be a greater diversity amongst cases from groups 1 and 2 in terms of the discriminating variables. The discriminant analysis is most successful in analysing cases from groups 3 and 4.

The implication of the above analysis is that issues of preference shares and debt seem to be capable of being more easily classified.

4-4 Mann-Whitney Test

A further way in which the hypothesis that some variables are perceived as influencing the type of capital issue more than other variables might be investigated is by means of the Mann-Whitney test (also known as the Wilcoxon test).

This test investigates the hypothesis that two independent samples come from populations having the same distribution (which need not be specified). It compares the number of times a score from one of the samples is ranked higher than a score from the other sample. If the two groups are similar, then the number of times this happens should also be similar for the two groups.

4-4-1 Results of Mann-Whitney Test

The mean rank of the ratings for the 4 categories of capital issue: new ordinary shares, rights issues of ordinary shares, preference shares, and debt issues, is shown in Table 4.11. The table shows, for each pair, the mean rank; the number of cases on which this is based; the Mann-Whitney U statistic, together with its significance level in SPSSX; and the Wilcoxon W.

The statistics are not significant for issues of ordinary shares (either by a new issue or by a rights issue) when paired against the variables which are perceived as possibly having an influence on capital issue decisions (epslevel, divlevel, prevmkt, indbehav, advfinad, attsharh, leverage, firmshph, firmshpl, stmktph, stmktpl, intrateh, intratel, highlevg, targetde, signal) nor when paired with Factor 1 and also Factor 2 from the factor analysis detailed in Section 4-2.

By contrast, there are several significant results with relation to the above variables and issues of preference shares and debt.

The variable 'Epslevel' results in a mean rank of 9.25 for preference share issues and 14.13 for

TABLE 4.11 : SUMMARY OF MANN-WHITNEY TEST RESULTS ON CAPITAL ISSUES

	Type of Cap. Issue	No. of Cases	Mean Rank	U Score	W Score	Z Score	2 Tailed P
Epslevel	New ords	28	29.30	414.5	820.5	-0.5324	0.5945
	Rights ords	32	31.55				
Divlevel	New ords	28	31.70	414.5	887.5	-0.5147	0.6068
	Rights ords	32	29.45				
Prevmtkt	New ords	28	31.21	456.0	874.0	-0.0919	0.9268
	Rights ords	33	30.82				
Indbehav	New ords	28	30.57	446.0	856.0	-0.0380	0.9697
	Rights ords	32	30.44				
Advfinad	New ords	28	32.96	407.0	923.0	-0.8437	0.3988
	Rights ords	33	29.33				
Attsharh	New ords	28	29.61	423.0	829.0	-0.7036	0.4817
	Rights ords	33	32.18				
Leverage	New ords	28	30.43	446.0	852.0	-0.2426	0.8083
	Rights ords	33	31.48				
Firmshph	New ords	16	24.69	141.0	395.0	-1.6206	0.1051
	Rights ords	25	18.64				
Firmshpl	New ords	4	8.38	16.5	33.5	-0.5134	0.6077
	Rights ords	10	7.15				
Stmktph	New ords	19	25.92	191.5	492.5	-1.3122	0.1894
	Rights ords	26	20.87				
Stmktpl	New ords	5	8.20	26.0	41.0	-0.1974	0.8435
	Rights ords	11	8.64				
Intrateh	New ords	19	23.61	235.5	448.5	-0.2746	0.7836
	Rights ords	26	22.56				
Intratel	New ords	7	9.57	24.0	67.0	-0.8452	0.3980
	Rights ords	9	7.67				
Highlevg	New ords	26	29.04	402.0	755.0	-0.0190	0.9848
	Rights ords	31	28.97				
Targetde	New ords	27	28.20	383.5	761.5	-0.7558	0.4498
	Rights ords	32	31.52				
Signal	New ords	25	28.94	398.5	723.5	-0.2318	0.8167
	Rights ords	33	29.92				

TABLE 4.11 (CONT'D): SUMMARY OF MANN-WHITNEY TEST RESULTS ON CAPITAL ISSUES

	Type of Cap. Issue	No. of Cases	Mean Rank	U Score	W Score	Z Score	2 Tailed P
Epslevel	Prefs	8	9.25	38.0	74.0	-1.6820 *	0.0926
	Debt	16	14.13				
Divlevel	Prefs	8	10.44	47.5	83.5	-1.0436	0.2967
	Debt	16	13.53				
Pprevmkt	Prefs	8	9.06	36.5	72.5	-1.8957 *	0.0580
	Debt	16	14.22				
Indbehav	Prefs	8	13.00	60.0	104.0	-0.2836	0.7767
	Debt	16	12.25				
Advfinad	Prefs	8	11.75	58.0	94.0	-0.3890	0.6973
	Debt	16	12.88				
Attsharh	Prefs	8	14.00	44.0	112.0	-1.5717	0.1160
	Debt	15	10.93				
Leverage	Prefs	8	11.38	55.0	91.0	-0.5995	0.5489
	Debt	16	13.06				
Firmshph	Prefs	4	8.50	8.0	34.0	-1.4591	0.1445
	Debt	8	5.50				
Firmshpl	Prefs	4	7.38	12.5	29.5	-0.6118	0.5407
	Debt	8	6.06				
Stmktph	Prefs	3	8.17	8.5	24.5	-0.9948	0.3198
	Debt	9	5.94				
Stmktpl	Prefs	5	6.30	13.5	31.5	-0.3162	0.7518
	Debt	6	5.75				
Intrateh	Prefs	2	4.50	6.0	9.0	0.0000	1.0000
	Debt	6	4.50				
Intratel	Prefs	5	4.20	6.0	21.0	-2.5428 *	0.0110
	Debt	10	9.90				
Highlevg	Prefs	8	14.75	30.0	118.0	-2.0555 *	0.0398
	Debt	14	9.64				
Targetde	Prefs	8	16.56	31.5	132.5	-2.0813 *	0.0374
	Debt	16	10.47				
Signal	Prefs	8	12.06	60.5	96.5	-0.2196	0.8261
	Debt	16	12.72				

* indicates significant z score.

debt issues. This suggests that more debt issue responses rated 'Epslevel' higher on the 1-5 scale of importance, in relation to the type of capital issue made, than did preference share responses. The z score is -1.682, significant at the 9% level (2 tail test).

'Prevmkt' (importance of prevailing market conditions), appeared to show some association with a higher mean rank for debt issues (14.22 for debt as against 9.06 for preference shares), with a z score of -1.8957, significant at the 6% level. 'Intrate1' (effect of the level of interest rates being low) was given a higher mean rank for debt issues (9.90 for debt compared to 4.20 for preference shares), with a z score of -2.5428, significant at the 1% level.

'Highlevg' (where leverage would have been too high if more debt were issued) was given a higher mean rank for preference shares (14.75 for preference shares compared to 9.64 for debt), indicating that this was ranked higher on the 1-5 scale more frequently for the preference shares responses, than for the debt responses. The z score was -2.0555, significant at the 4% level. Perhaps somewhat surprisingly, 'targetde' (importance of meeting a target debt-equity ratio

to capital issue decisions) was also given a higher mean rank for preference shares (16.56 for preference shares compared to 10.47 for debt), with a z score of -2.0813, significant at the 4% level.

4-4-2 Summary of Mann-Whitney Results .

The Mann-Whitney test showed that prevailing market conditions, maintaining or increasing the level of EPS, and low interest rates are important influences in relation to debt issues. In relation to preference shares issues, the important issues are not wanting to increase leverage to too high a level by issuing more debt, and meeting a target debt-equity ratio (perhaps the target would have been exceeded if more debt were issued?).

None of the variables was found to be significant in the context of issues of ordinary shares. One explanation, as mentioned earlier in Chapter 3, could be because rights issues of ordinary shares are often made out of necessity in order to carry out a financial reconstruction of a business which is too highly geared and over-burdened with large interest payments.

4-5 Conclusions

In this Chapter multivariate analysis was carried out to see whether or not groupings of the variables were indicative of a small number of underlying influences which might influence capital issue choice. The findings were as follows:

(i) Factor analysis using SPSSX3 converged after three iterations to produce two significant factors. Factor 1 is linked to financial variables of the individual firm, whilst Factor 2 places more emphasis on the background aspects of market information. 'Epslevel' is the variable most heavily loaded on Factor 1, whilst 'Pprevmkt' is the variable most heavily loaded on Factor 2. Interestingly, 'Epslevel' is the variable most heavily loaded of any of the variables on either of the two factors.

(ii) The discriminant analysis was most successful in classifying preference share issues (75%) and debt issues (66.7%). The discriminant analysis was less successful in classifying issues of new ordinary shares and rights issues of ordinary shares. This would suggest a greater diversity amongst cases in groups 1 and 2 in

terms of discriminating variables. It would therefore appear that the variables used in the discriminant analysis are perceived as being of greater importance in the context of preference share issues and debt issues.

(iii) The Mann-Whitney test results showed that 'Epslevel' (maintaining or increasing the level of EPS), 'Prevmkt' (prevailing market conditions), and 'Intrate' (the importance of low interest rates) are important influences in relation to debt issues; whilst in relation to preference shares, 'Leverage' (not wanting to increase leverage to too high a level, by issuing more debt), and 'Targetde' (meeting a target debt-equity ratio) were important. None of the variables was of statistical significance for new issues/rights issues of ordinary shares.

The multivariate analysis of the questionnaires carried out in this Chapter has shown that EPS is viewed as having a significant influence on capital issues, particularly those of preference shares and debt. It is the variable which most consistently appears to be of significance. This is supportive of the view that there is functional fixation on short-term EPS, although this might not be the only explanation. The

relationship between methods of issue and EPS is examined in the next Chapter.

CHAPTER 5 : FURTHER ANALYSIS OF EBIT-EPS

5-1 Introduction

None of the analyses done so far suggests that the theoretical paradigms covered in Chapter 2 are very useful in practice. However the survey that has been carried out does seem to show that EPS is very important, and this would suggest that there may be some functional fixation effect of the type as suggested by (inter alia) Hand (1990), and Harris and Ohlson (1987 and 1990).

Watts and Zimmerman (1986) stated 'the hypothesis of functional fixation maintains that individual investors interpret earnings numbers the same way regardless of the accounting procedures used to calculate them. If all investors acted this way, there would be a mechanical relation between earnings and stock prices.....', page 160.

The basic premise is that EPS is given particular prominence by financial analysts and therefore as a consequence by the firm's managers, i.e. there is functional fixation on EPS and this is reflected in the financing decisions of companies.

It is therefore useful to extend the EBIT-EPS analysis as posited by Van Horne to obtain a ranking for methods of finance based on their effect on EPS.

5-2 EBIT-EPS Analysis

Van Horne (1989) stated that 'one widely used means of examining the effect of leverage is to analyze the relationship between earnings before interest and taxes (EBIT) and earnings per share (EPS)', page 305.

EBIT-EPS analysis involves comparing various methods of finance under different assumptions of EBIT. The EPS under each method can be shown for a given level of EBIT - this shows the EBIT break-even or indifference points for each financing alternative.

A break-even chart can be constructed, with EBIT on the horizontal axis and EPS on the vertical axis. EPS for a given level of EBIT are plotted on the vertical axis, and the EBIT necessary to cover all fixed financial costs for a particular financing plan (for example, interest charges on debt) is plotted on the horizontal axis.

5-3 Development of EBIT-EPS Analysis

Under simplifying assumptions concerning the linear proportional nature of the tax charge, it is a straightforward matter to determine which method of finance should produce the highest EPS. Initially the analysis will be restricted to simple debt versus equity choice.

The analysis contains a number of simplifying assumptions, for example:

- (i) the rate of corporation tax is assumed to be constant
- (ii) the company is not tax-exhausted (i.e. it can offset the tax relief on debenture interest against its profits)
- (iii) issue costs are the same for all sources of finance
- (iv) there are no restrictions on the company's choice of raising finance
- (v) risk is not incorporated into the model

(i) Debt versus equity

	Debt Alternative	Equity Alternative
	EBIT	EBIT
less int.	$\frac{I+\Delta I}{(EBIT-I-\Delta I)}$	$\frac{I}{(EBIT-I)}$
less tax	$\frac{T(EBIT-I-\Delta I)}{(1-T)(EBIT-I-\Delta I)}$	$\frac{T(EBIT-I)}{(1-T)(EBIT-I)}$
after tax		

where T = corporation tax rate

EBIT = earnings before interest and tax

I = interest payable

ΔI = increase in interest payable

n = number of ordinary shares

Δn = increase in number of ordinary shares

To decide whether debt is to be preferred to equity, the EPS_d should be greater than the EPS_e , where EPS_d is the EPS under a debt financing alternative and EPS_e is the EPS under an equity financing alternative. Therefore from the model above:

$$\frac{(1-T)(EBIT-I-\Delta I)}{n} > \frac{(1-T)(EBIT-I)}{(n+\Delta n)}$$

then:

$$\frac{\frac{\Delta n}{n}}{\frac{1 + (\Delta n)}{n}} > \frac{\Delta I}{(EBIT - I)}$$

$$\text{Let } \Delta I = rD$$

where r = rate of interest

D = total nominal value of debt

$$\text{then } \frac{(\Delta n)}{(n + \Delta n)} > \frac{rD}{(EBIT - I)}$$

$$\therefore EBIT > rD \frac{(n + \Delta n)}{(\Delta n)} + I$$

To interpret this result, it is best expressed as:

$$(5.1) \quad (EBIT - I) \frac{(\Delta n)}{(n + \Delta n)} > rD$$

This allows an intuitive explanation, namely that debt finance is preferable where the proportion of earnings after interest attributable to the increase in shares under the equity option,

exceeds the new interest that would be payable under the debt option. Note that interest has a cash flow effect, whereas earnings do not necessarily.

Alternatively, it can be expressed as:

$$\frac{(rD)}{(EBIT-I)} < \frac{(\Delta n)}{(n+\Delta n)}$$

i.e. for debt finance to be preferred, the ratio of new interest to 'profit after interest' (i.e. existing interest) must be less than the equity dilution effect.

Example:

The 'equity' column below illustrates the situation where a firm originally had share capital of 100 £1 ordinary shares, but it needed to raise more finance and chose to do so via equity, so it now has 120 £1 ordinary shares. It also has to pay debenture interest of £400.

In the 'debt' column, the firm has to pay a total of £600 debenture interest, of which £200 relates to finance raised recently. However, as the 'debt' firm raised the finance via new debt, it

still has only 100 £1 ordinary shares.

	Equity			Debt		
	£	£	£	£	£	£
EBIT	0	1600	2000	0	1600	2000
Debt Int.	-400	-400	-400	-600	-600	-600

EAI	-400	1200	1600	-600	1000	1400
Tax @ 40%	-160	480	640	-240	400	560

EAT	-240	720	960	-360	600	840
=====						
No.ord. shares	120	120	120	100	100	100
EPS	-2.00	6.00	8.00	-3.60	6.00	8.40

Using the expression 5.1 in its equation form gives the level of EBIT at which the finance is indifferent, and EPS is 6.0p under each alternative:

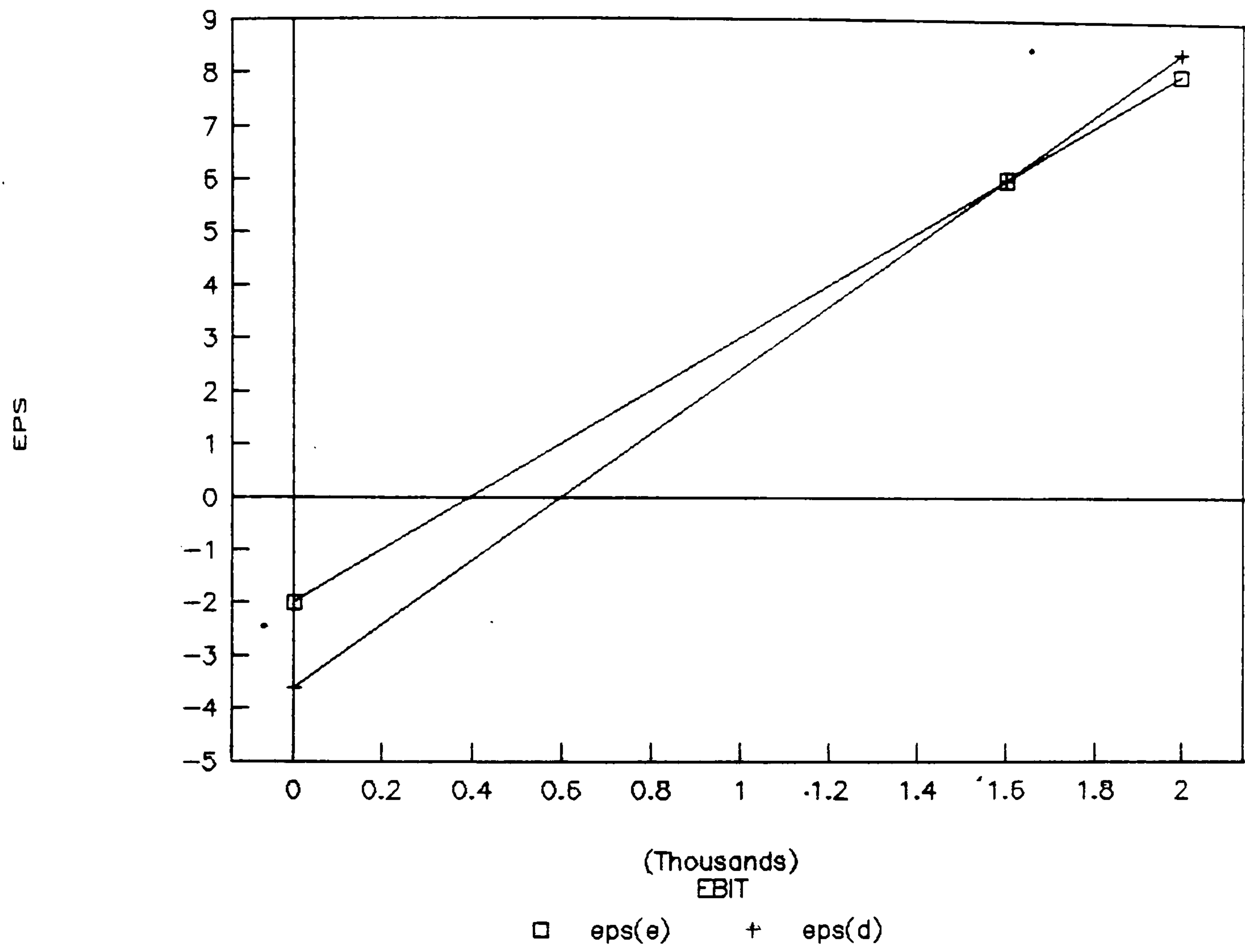
$$EBIT = rD \left(\frac{n + \Delta n}{\Delta n} \right) + I$$

$$\begin{aligned} EBIT &= £200(120/20) + £400 \\ &= £1600 \end{aligned}$$

From Fig. 5.1 it can be seen that equity is to be preferred below an EBIT of £1600, whilst debt is

FIG. 5.1 : EPS-EBIT GRAPH

EPS vs EBIT



to be preferred above an EBIT of £1600 (equity resulting in a higher EPS for EBIT levels below £1600, whilst debt results in a higher EPS for EBIT levels above £1600).

Other examples of similar analysis that can be carried out to identify the point at which debt is preferable to say, preference share capital as a source of finance are shown algebraically below. The first example deals with the choice of debt versus preference shares, the second deals with the choice between ordinary shares and preference shares, although the analysis could be extended to cover most different sources of finance.

(ii) Debt versus preference shares

Preference shares alternative

£

	EBIT
less int.	<u>(I)</u>
	EBIT-I
less tax	<u>T(EBIT-I)</u>
EAT	(1-T)(EBIT-I)
less pref.div.	<u>(PD)</u>
EAT-pref.div.	<u>[(1-T)(EBIT-I)]-PD</u>

For debt to be preferred to preference shares the EPS_d would be greater than the EPS_{pref} (where EPS_{pref} is the EPS under a preference share alternative). Therefore, given that PD =preference dividend,

$$\frac{(1-T)(EBIT-I-\Delta I)}{n} > \frac{[(1-T)(EBIT-I)] - PD}{n}$$

and

$$\frac{(1-T)(EBIT-I)}{n} - \frac{(1-T)\Delta I}{n} > \frac{(1-T)(EBIT-I)}{n} - \frac{PD}{n}$$

This can be simplified to:

$$(5.2) \quad (1-T)\Delta I < PD$$

This shows that, for debt to be preferred to preference shares as a source of finance, the new after tax interest must be less than the preference dividend. In practice, this is likely to be the case, except for tax-exhausted companies, so preference shares do not appear to be an attractive alternative to debt finance. However, passing a preference dividend does not lead to the appointment of a receiver, as in the case of passing a debenture interest payment, and so there is less risk of failure.

(iii) Ordinary shares versus preference shares

For ordinary share capital to be preferred to preference shares, requires $EPS_{ord} > EPS_{prefs}$.

$$\frac{(1-T)(EBIT-I)}{(n+\Delta n)} > \frac{(1-T)(EBIT-I) - PD}{n}$$

$$\therefore PD > (1-T)(EBIT-I) - (1-T)(EBIT-I) \left(\frac{n}{n+\Delta n} \right)$$

$$PD > (1-T)(EBIT-I) \left(1 - \frac{n}{n+\Delta n} \right)$$

$$(5.3) \quad PD > (1-T)(EBIT-I) \left(\frac{\Delta n}{n+\Delta n} \right)$$

Thus for ordinary shares to be preferred to preference shares, the preference dividend would have to exceed the proportion of earnings 'belonging' to the new ordinary shares. This is of interest since the preference dividend is compared to ordinary earnings (i.e. not dividend for ordinary shares). This relationship means that ordinary shares may be preferred even when the ordinary share dividend is very low. There is also a cash flow implication arising from this, in as much as low ordinary dividends are less onerous on the business' cash flow

requirements. Again, preference shares are seen to be an unattractive means of raising finance (an exception to this, for reasons specific to their sector, is for banks where preference shares rank as class 2 capital).

5-4 Degrees of Financial & Operating Leverage

The EBIT-EPS relationship can be extended to incorporate some measure of risk.

One approach is to look at the elasticity of EPS with respect to EBIT, a measure sometimes referred to as the 'degree of financial leverage' (DFL). Since this is defined in terms of the key variables of the analysis above it is potentially a useful measure. An additional elasticity measure of interest is the degree of operating leverage (DOL) which captures the sensitivity of EBIT to changes in operating volume. These can be combined to give a composite 'degree of combined leverage' (DCL) that, in essence, combines both operating and financial risk. These variables have potentially useful explanatory value and are investigated empirically in Chapter 8.

5-4-1 Degree of Financial Leverage (DFL)

DFL can be defined as the percentage change in earnings (EPS) that takes place as a result of a percentage change in earnings before interest and taxes (EBIT), that is:

$$\text{DFL} = \frac{\text{percentage change in EPS}}{\text{percentage change in EBIT}}$$

It is therefore an elasticity measure and the financial leverage reflects the amount of debt used in the capital structure of the firm. It relates to the financing side of the business not the operating side.

The derivation of DFL is as follows:

$$\begin{aligned}\text{DFL} &= \frac{\text{deps}}{\text{eps}} \\ &\quad \frac{d\pi/\pi}{\text{eps}} \\ &= \frac{\text{deps}}{\text{eps}} \cdot \frac{\pi}{d\pi}\end{aligned}$$

given,

$$\begin{aligned}\text{eps} &= \frac{(\pi - I)(1 - T)}{N} \\ &= \frac{1}{N} [\pi(1-T) - I]\end{aligned}$$

and $\frac{d\pi}{N} = \frac{1-T}{N} \cdot \pi$

Therefore:

$$\begin{aligned} \text{DFL} &= \frac{(1-T)}{N} \cdot \frac{\pi}{\text{eps}} \\ &= \frac{(1-T)}{N} \cdot \pi \times \frac{N}{(\pi - I)(1-T)} \end{aligned}$$

that is, $\text{DFL} = \frac{\pi}{\pi - I}$

Example of Degree of Financial Leverage (DFL):

The following data apply to company X plc:

	Equity Alt.	Debt Alt.
	£000	£000
Earnings before int. and tax (EBIT)	4000	4000
Interest	<u>200</u>	<u>800</u>
Earnings before tax	3800	3200
Corporation tax @ 33%	<u>1254</u>	<u>1056</u>
Earnings after tax (EAT) (avail.to ord.s/holders)	2546	2144
No.of ord.shares ('000)	1200	800
Earnings per share (EPS)	<u>£2.12</u>	<u>£2.68</u>

Using the above result, the DFL under each financing alternative is as follows:

(i) For equity: $\frac{4000}{4000-200}$
 $= 1.05$

(ii) For debt: $\frac{4000}{4000-800}$
 $= 1.25$

Therefore at the EBIT level of £4,000,000, a 1% increase in EBIT would produce approximately a 1.05% increase in EPS under the equity alternative; whilst under the debt alternative, there would be an increase in EPS of approximately 1.25%. As a check on these calculations, the revised figures based on an EBIT of £4,040,000 are shown below:

	Equity Alt.	Debt Alt.
	£000	£000
Earnings before int. and tax (EBIT)	4040	4040
Interest	<u>200</u>	<u>800</u>
Earnings before tax	3840	3240
Corporation tax @ 33%	<u>1267</u>	<u>1069</u>
Earnings after tax (EAT)	2573	2171
(avail.to ord.s/holders)	—	—
No.of ord.shares ('000)	1200	800
Earnings per share (EPS)	<u>£2.14</u>	<u>£2.71</u>

On the equity alternative the EPS has increased from £2.12 to £2.14; whilst on the debt alternative EPS has increased from £2.68 to £2.71. Therefore the EPS under the equity alternative has increased by 1.05%, and under the debt alternative by 1.25%, as previously calculated.

For the example above, the DFL may be calculated for any level of EBIT. As with most elasticities, it is only locally valid and changes as a function of EBIT. However the debt alternative would always give the higher increase in EPS for any given increase in EBIT.

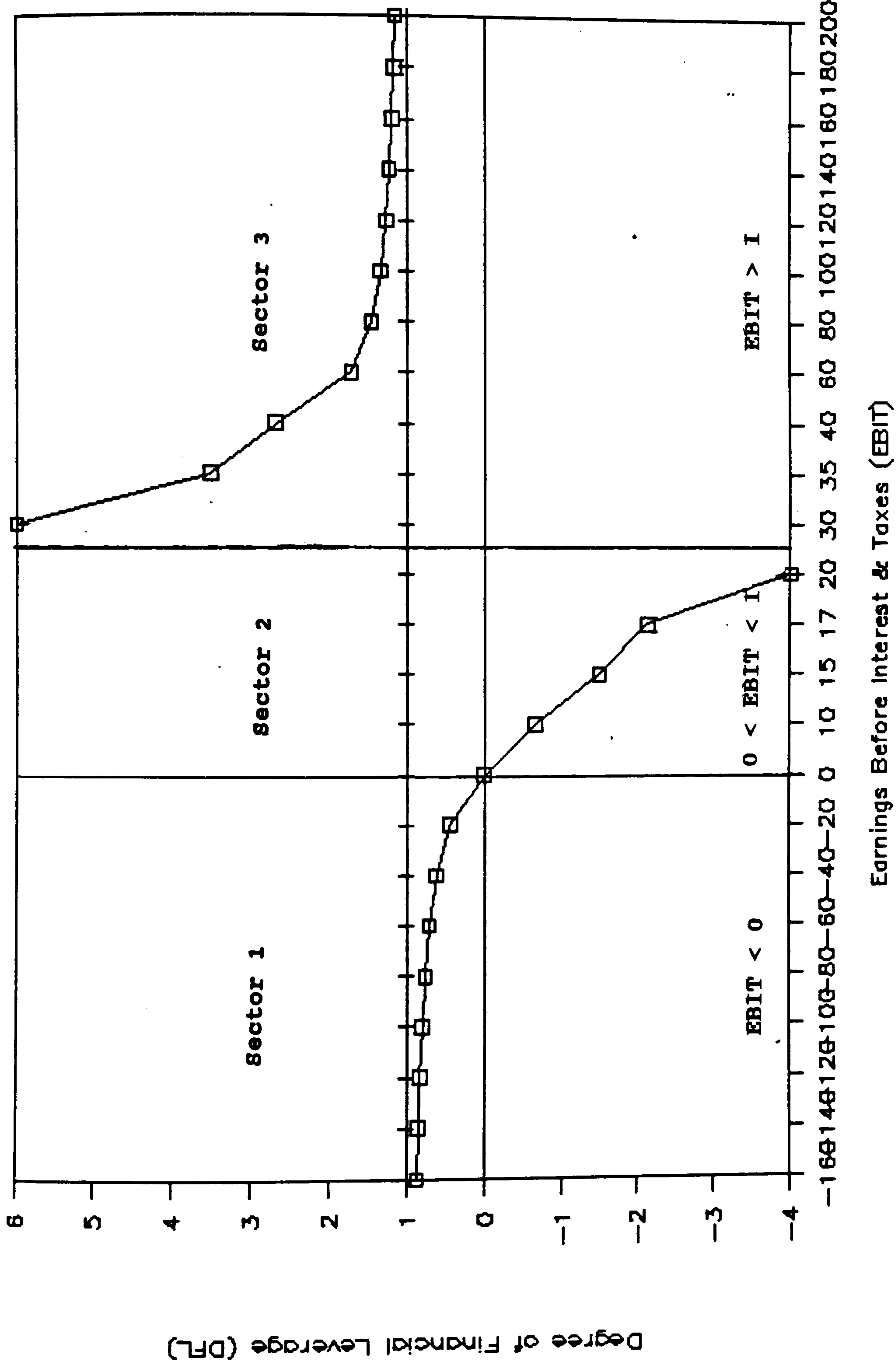
5-4-2 Functional Properties of DFL

The functional properties of DFL are illustrated in Fig.5.2, which shows a DFL-EBIT chart with EBIT on the horizontal axis and DFL on the vertical axis.

Elasticity measures are as much to do with profit fluctuations as with the capital gearing of the business. It can be seen that a significant feature of DFL is that it is not linear in the conventional balance sheet gearing sense as there is a discontinuity at the point where $EBIT=I$. It

FIG. 5.2 : DFL-EBIT CHART

DFL versus EBIT



asymptotically tends to $+\infty$ or $-\infty$ at that critical value. Also it approaches unity from below.

Three sectors can be identified in the DFL-EBIT chart, viz Sectors 1, 2, and 3:

(i) Sector 1

In Sector 1 EBIT has the following characteristics:

(i) $EBIT < I$ and $EBIT < 0$

Therefore DFL is positive and lies between 0 and 1.

(ii) Sector 2

In Sector 2 EBIT has the following characteristics:

(i) $EBIT < I$ but $EBIT > 0$

This results in DFL being negative.

(iii) Sector 3

In Sector 3 EBIT has the following characteristics:

(i) $EBIT > I$

The DFL is therefore positive and greater than 1.

When the amount of interest is small in relation to EBIT (or EBIT is large in relation to interest), DFL tends towards 1 from above. Conversely, the larger the interest in relation to EBIT, the higher the DFL. As explained above, a DFL of less than 1 arises when the interest is more than EBIT and EBIT is less than 0 (i.e. a loss); whilst a negative DFL arises when the interest is more than EBIT but EBIT is greater than 0.

This helps to explain some of the calculated values for DFL in Section 5-5 which initially may seem somewhat counter-intuitive.

5-4-3 Degree of Operating Leverage (DOL)

DOL can be defined as the percentage change in operating income that takes place as a result of a percentage change in units sold for a one product firm,

$$\begin{aligned} \text{DOL} &= \frac{\text{percentage change in operating income}}{\text{percentage change in unit volume}} \\ &= \frac{Q(P-VC)}{Q(P-VC)-FC} \end{aligned}$$

where Q = quantity at which DOL is computed

P = price per unit

VC = variable costs per unit

FC = fixed costs

Operating leverage reflects the extent to which fixed assets and fixed costs are utilised in the business. The more assets are utilised, the higher DOL is likely to be.

The derivation of DOL is as follows:

$$\begin{aligned} \text{DOL} &= \frac{d\pi/\pi}{dQ/Q} \\ &= \frac{d\pi}{dQ} \cdot \frac{Q}{\pi} \end{aligned}$$

Given that $\pi = Q(p-v) - F$

$$\begin{aligned} \text{then } \text{DOL} &= \frac{Q(p-v)}{Q(p-v) - F} \end{aligned}$$

$$\begin{aligned} \text{or } \text{DOL} &= \frac{\pi + F}{\pi} \end{aligned}$$

$$\begin{aligned} \text{i.e. } \text{DOL} &= 1 + \frac{F}{\pi} \end{aligned}$$

Example of Degree of Operating Leverage

The following data on operating income and unit volume relates to companies X plc and Y plc:

	<u>Operating income £000</u>	
	X plc	Y plc
<u>Unit volume</u>		
0	(14000)	(80000)
10,000	(3000)	(35000)
20,000	8000	10000
30,000	19000	55000
40,000	30000	100000

The expression for DOL will be applied with reference to operating income as volume moves from 30,000 to 40,000 units, for both companies. Given that DOL is the elasticity measure obtained from dividing the percentage change in operating income by the percentage change in unit volume, then for X plc,

$$\begin{aligned} \text{DOL} &= \frac{(11000/19000) \times 100}{(10000/30000) \times 100} \\ &= 1.74 \end{aligned}$$

and for Y plc,

$$\begin{aligned} \text{DOL} &= \frac{(45000/55000) \times 100}{(10000/30000) \times 100} \\ &= 2.45 \end{aligned}$$

The DOL of 1.74 for X plc indicates that a 1% increase in unit volume would produce a 1.74% increase in operating income; whilst the DOL of 2.45 for Y plc indicates that a 1% increase in unit volume would produce a 2.45% increase in operating income. As is evident from Fig. 5.2 this measure is not 'linear' in gearing although it captures similar influences provided EBIT exceeds I.

5-4-4 Degree of Combined Leverage (DCL)

Operating leverage and financial leverage can be combined to give the degree of combined leverage (DCL), which utilises the entire income statement and shows the impact of a change in sales or volume on EPS:

$$\begin{aligned} \text{DCL} &= \frac{\text{percentage change in EPS}}{\text{percentage change in sales}} \\ &= \frac{Q(P-VC)}{Q(P-VC) - FC - I} \end{aligned}$$

For which the derivation is:

$$\begin{aligned}
 \text{DCL} &= \frac{\text{deps}}{\text{eps}} \cdot \frac{dQ}{Q} \\
 &= \frac{\text{deps}}{dQ} \cdot \frac{Q}{\text{eps}} \\
 &= \frac{\text{deps}}{d\pi} \cdot \frac{d\pi}{dQ} \cdot \frac{Q}{\text{eps}} \\
 &= \left(\frac{\text{deps}}{d\pi} \cdot \frac{\pi}{\text{eps}} \right) \cdot \left(\frac{d\pi}{dQ} \cdot \frac{Q}{\pi} \right)
 \end{aligned}$$

i.e $\text{DCL} = \text{DFL} \times \text{DOL}$

Example of Degree of Combined Leverage (DCL)

Company Z plc has a DFL of 1.6 and a DOL of 2.2.

Given that $\text{DCL} = \text{DFL} \times \text{DOL}$,

$$\begin{aligned}
 \text{DCL} &= 1.2 \times 1.6 \\
 &= 1.92
 \end{aligned}$$

This indicates that a 1% increase in sales would result in a 1.92% increase in EPS.

A more highly geared firm with a DFL of 1.8 and a DOL of 2.2 would have a correspondingly higher DCL of 3.96, indicating that for a 1% increase in sales, there would be a 3.96% increase in EPS.

Incidentally, a dissenting voice to the above

calculation of DCL is L. Huffman (1983) who provides an alternative view using the Brennan (1979) option pricing model. She suggests that the accepted measure of DCL is not correct for the following reasons:

- (i) DCL varies with the time-related arguments of the option pricing model probability density functions (these arguments change with variations in the firm's output capacity);
- (ii) given that optimal capacity is also a function of debt, DCL is a more complex function of debt than captured in the traditional DCL;
- (iii) DCL is not independent of revenue risk.

She posits that the direct effect of an increase in debt on equity risk is offset partially by an attendant change in operating capacity (although this offset is lost above a critical debt level). Also the effect of an increase in revenue risk on equity risk is partially offset by changes in capacity in response to the increased revenue risk (however capacity changes lose their ability to mitigate equity risk if revenue is below a critical level, or if debt is above a critical level).

Li and Henderson (1991) compare test results of

DCL, based on both L. Huffman's revised DCL and the traditional definition ($DFL \times DOL$). Their findings are inconclusive, with some aspects showing support for L. Huffman's theory, but others supporting the traditional view.

In the absence of any seriously viable alternative, DCL is therefore calculated on the traditionally accepted basis of $DFL \times DOL$.

5-4-5 Usefulness of Elasticity Measures

The elasticity measures discussed above in Sections 5-4-1 to 5-4-4 only capture sensitivity effects, they do not incorporate measures of risk per se.

The DOL leverage is of limited usefulness as in reality firms have a range of products. However the DFL is of potentially more value as it gives a direct quantification of proportional changes in EPS with changes in EBIT irrespective of the firm's product portfolio.

DCL is a 'flow' measure of gearing and is arguably more direct. Given that financial gearing takes no account of operating gearing, it could be argued that, since $DCL = DOL \times DFL$ (and

both DOL and DFL can be estimated), DCL is a better overall risk measure. However, whilst it is possible to synthesise a composite (holistic) gearing measure which takes account of operating and financial leverage, certain technical difficulties remain. Calculated measures of DFL over time which are persistently less than 1 do not make sense as over time a firm must make a profit, however this would seem to be the nature of estimation in stochastic measures.

5-5 Estimation of DFL and DOL

5-5-1 Data Required for Estimation

Estimation of DFL is reasonably straight forward as the data required - Earnings before interest and tax (EBIT) and Interest (I) - are readily available. However, once the data are obtained there are several different ways of actually calculating DFL which are discussed below.

Estimating DOL is much more problematical, as its pure definition would require knowledge of changes in operating income and changes in unit volume, and also firms do not just produce one product. Given that the quantity produced and sold is not available from the financial

statements, the alternative is to proxy it with annual sales, following Lev (1974) and Mandelker and Rhee (1984).

Data were obtained from Datastream using programs 190Y and 190V for the components of both DFL and DOL for a sample of companies (those for which a reconstruction is subsequently to be carried out in Chapter 6). The intention was to use the DFL and DOL estimates in a probit model detailed in Chapter 8, to examine whether they have an influence on a company's capital issue decision.

The aim was to obtain 15 years data for each company for the DFL and DOL calculations. However, the required data were not generally available for this period of time for the majority of companies. Therefore, DFL and DOL estimates are based on between 6 and 12 years data.

5-5-2 Estimation Procedures for DFL and DOL

In the finance literature there is some diversity in the approaches employed to estimate the degree of operating leverage.

For example, Ferri and Jones (1979) used the

ratio of net fixed assets to total assets as a proxy for the degree of operating leverage. The main criticism of this proxy is that it is based on the ratio of one balance sheet stock variable to another, whereas DOL is an elasticity measure reflecting the percentage change in one flow variable to the percentage change in another flow variable.

Kim and Sorensen (1986) used the coefficient of variation (the ratio of a variable's standard deviation to its mean) of EBIT as a proxy for the degree of operating leverage. However this measure results in operating leverage being calculated solely on the basis of variability in EBIT; it fails to take into account any relationship between variability in EBIT and variability in sales. Also the standard deviation will become higher as the asymptotic condition is approached (as discussed earlier in Section 5-4-2).

The best known estimation procedures are those employed by Mandelker and Rhee (1984), and subsequently replicated by S. Huffman (1989).

Mandelker and Rhee used time series regressions to find estimates of DFL and DOL as follows:

$$\text{Ln}X_{jt} = a_j + c_j \text{Ln}S_{jt} + \mu_{jt}$$

and

$$\text{Ln}\pi_{jt} = b_j + d_j \text{Ln}X_{jt} + \epsilon_{jt}$$

where:

c_j = degree of operating
leverage

d_j = degree of financial
leverage

π_{jt} = earnings after interest
and taxes at t

X_{jt} = earnings before interest
and taxes at t

S_{jt} = sales (in dollars)

ϵ_{jt} = disturbance term

μ_{jt} = disturbance term

a_j, b_j = constants

It should be noted that the estimates based on the above regressions rest on the restrictive assumption of stationary elasticity over the estimation period.

O'Brien and Vanderheiden (1987) alleged that one shortcoming of the Mandelker and Rhee technique was that it failed to adjust for secular growth in sales and EBIT. The latter's estimates of DOL were therefore dominated by the effect of secular

growth. They suggested employing trend regressions, using time as the independent variable, to adjust for growth in sales and EBIT. The trend regressions took the form:

$$\ln \text{EBIT}_{jt} = \ln \text{EBIT}_{j0} + g_{jx}t + \mu_{jt},$$

$$\ln S_{jt} = \ln S_{j0} + g_{js}t + \mu_{jt},$$

where

EBIT_{jt} = earnings before interest and tax
for firm j in year t

EBIT_{j0} = beginning level of earnings
before interest and tax for
firm j

S_{jt} = sales for firm j in year t

S_{j0} = beginning level of sales for
firm j

g_{jx} = earnings before interest and
taxes growth

g_{js} = sales growth

The residuals from these trend regressions were then used in the following time-series regression:

$$\mu_{jt}^e = D_j \mu_{jt}^s + \epsilon_{jt}$$

where

μ_{jt}^e = the log E_{jt} trend regression residual
for firm j in year t

D_j = the j th firm's degree of operating leverage

μ_{jt}^S = the log S_{jt} trend regression residual for firm j in year t

ϵ_{jt} = the disturbance term

Dugan and Shriver (1992) employed both the Mandelker and Rhee, and the O'Brien and Vanderheiden techniques and were of the opinion that the O'Brien and Vanderheiden estimates appeared to be more consistent with the classical ex ante model of degree of operating leverage coefficients. However, both methods produced a substantial number of DOL coefficients below one.

S. Huffman (1989) also found that both DOL and DFL estimates were often below one. In a sample including firms with losses, industry estimates of average DOL ranged from 0.105 to 0.320; whilst average DFL ranged from 0.460 to 1.152. When loss-making firms were excluded these figures increased with average DOL ranging from 0.780 to 1.008; whilst average DFL ranged from 0.896 to 1.101. These results are to some extent puzzling and counter-intuitive. Possible explanations of these lower than expected estimates from all the studies are problems with the estimation

techniques, and noise in the accounting data used in the regressions.

It should be noted that the Mandelker and Rhee, and the O'Brien & Vanderheiden estimation procedures use a different approach (transformation) when earnings are negative. Their DOL and DFL estimates would therefore be based on the results of two different methods. However S. Huffman (1989) hypothesised that measurement error might arise by combining two different methods (i.e. one for positive earnings and one for negative earnings) when computing DOL and DFL.

Mandelker and Rhee also found evidence for the tradeoff hypothesis as they found a statistically significant negative correlation between DOL and DFL. However there was not enough consistency in S. Huffman's results for him to be able to support the tradeoff hypothesis.

For regression-based estimates of DOL and DFL, the estimation technique used by Mandelker and Rhee (1984), and described above, will be used in the probit analysis in Chapter 8. Its definition would appear to be the most conceptually appropriate.

As outlined above there are real difficulties encountered in estimating DOL. DFL is not so problematic, and it has been possible to calculate DFL on several bases:

- (i) the Mandelker and Rhee estimation procedures (DFL)
- (ii) the average DFL over a period of time
- (iii) the actual DFL for the year prior to the capital issue
- (iv) the actual DFL for the year of the capital issue

The DFL ratio does have undesirable properties, especially when used in regression analysis, as most regression models are linearly articulated and this elasticity measure does not have good linear properties (even in log form).

Of the above bases, the averaging procedure is favoured over estimations from regression analysis. A priori there is no real reason to reject averaging as it is a ratio which is non-linear with EBIT. Therefore given that acute non-linearities and discontinuities can arise, DFL calculated on an average basis may well be the better estimator.

DFL has been included in the probit analysis in Chapter 8 (using all four estimation bases in turn) as it is a measure of gearing which relates more closely to a measure of risk. It has intuitively appealing properties, its elasticity reflecting proportional changes.

5-5-3 DFL, DOL and DCL Estimates Based On Regression Analysis

The Mandelker and Rhee estimation procedures as outlined above were followed for the data that had been obtained from Datastream for the sample companies. The data were entered into LIMDEP, a program used for estimating limited dependent variables. Two time-series log-linear regressions were then run for each company in the sample to obtain estimates of DFL and DOL.

It should be mentioned that all available relevant data were run for each regression, even where some of the data related to a period after the year of the capital issue made by a particular company. This is unlikely to be particularly distortionary since the overlap in general was fairly small. It was also necessary in the present work to ensure that there were enough degrees of freedom to obtain estimates.

The results are shown in Table 5.1.

The DFL and DOL estimates are, as one might expect, generally positive, although perhaps smaller than envisaged. The average DFL for those companies issuing equity is 1.24, whilst for those issuing debt it is 0.99, and for convertibles 1.18. It would generally be expected that the DFL would be > 1 . Similarly, much larger DFLs can be explained by the functional properties of DFL as discussed earlier.

The subsequent reconstruction work in Chapter 6 goes some way to explaining this. Table 6.11 in Chapter 6 shows that the average capital gearing ratio for the companies which chose to issue equity was already higher (35.26%) than for those which chose to issue debt (28.43%). The companies which chose to issue equity were therefore already, on average, more highly geared than those which chose to issue debt.

Conversely, the DOL is largest for those companies which issued debt, being 2.12; for the equity issuing companies it is considerably less at 1.32; whilst for those issuing convertibles it is 0.76. A value of less than unity is rather

TABLE 5.1: ESTIMATES OF DFL,DOL AND DCL BASED ON
TIME SERIES REGRESSION

Company	DFL	DOL	DCL
1 Anglia Secure Homes	0.92	-1.67	-1.54
2 Bimec	0.95	1.40	1.34
3 Bowater	1.32	1.17	1.54
4 Bowthorpe	1.03	1.13	1.16
5 Casket	0.71	0.86	0.61
6 Cater Allen	n/av	n/av	n/av
7 Community Hospital Grp	n/av	n/av	n/av
8 Cookson Grp	0.94	1.15	1.08
9 De La Rue	1.67	0.40	0.67
10 Domino Printing	1.09	0.59	0.64
11 Eurotunnel	n/av	n/av	n/av
12 Jeyes	0.81	1.73	1.41
13 Kwik Fit	0.92	1.20	1.11
14 Lovell, Y.J.	1.23	1.57	1.92
15 Midland Bank	0.92	n/av	n/av
16 Regalian	0.34	n/av	n/av
17 Renold	2.62	6.15	16.11
18 Richards	0.32	1.95	0.62
19 Sketchley	4.50	-0.12	-0.55
20 Tay Homes	1.16	1.21	1.40
21 Tibbet & Britten	1.02	0.83	0.85
22 Westbury	1.07	-0.11	-0.12
23 Allied Lyons	0.83	2.18	1.81
24 Asda	-0.39	1.19	-0.46
25 Asda	-0.39	1.19	-0.46
26 Bass	1.00	1.48	1.48
27 Blue Circle	1.08	1.85	1.99
28 British Land	1.30	n/av	n/av
29 British Land	1.30	n/av	n/av
30 British Steel	5.60	20.47	114.54
31 City Site Estates	-0.26	n/av	n/av
32 Dares Estates	0.75	n/av	n/av
33 Forte	0.96	0.88	0.84
34 Land Securities	1.11	n/av	n/av
35 Lasmo	0.12	-0.95	-0.11
36 Lasmo	0.12	-0.95	-0.11
37 MEPC	1.32	n/av	n/av
38 Taylor Woodrow	0.99	-4.37	-4.35
39 Vaux	1.20	1.40	1.68
40 Whitbread	1.29	1.14	1.46
41 Helical Bar	1.96	n/av	n/av
42 Next	0.77	0.68	0.53
43 Worcester Grp	0.81	0.84	0.68
Avg. for equity issues:	1.24	1.32	1.93
Avg. for debt issues:	0.99	2.12	9.86
Avg. for conv. issues:	1.18	0.76	0.60

Note: n/av indicates that an estimate could not be calculated for that particular item.

difficult to explain in elasticity terms, but as shown in the diagram of the DFL estimates, the properties of these measures are rather unusual.

The implication is that for the companies which issued equity, the percentage change in EPS for a percentage change in EBIT is more marked; whereas for the debt issuing companies, the percentage change in operating income for a percentage change in unit volume (proxied by sales) is more marked.

The DFL estimates in particular are slightly different to prior expectations. Therefore it was felt that it would be useful to compare the DFL estimates obtained from the time-series regressions to other DFL estimates.

5-5-4 DFL Estimates Based On Average and Actual Figures

A second DFL estimate was obtained by taking $EBIT/(EBIT-I)$ for each year over the period for which data was available (as mentioned above this varied between 6 and 12 years for different companies) and then averaging the results to find one DFL estimate for each company. The estimates obtained by the second method are shown in Table

TABLE 5.2 : COMPARISON OF DFL ESTIMATES

Company	DFL	DFL2	DFL-DFL2
1 Anglia Secure Homes	0.92	0.76	0.16
2 Bimec	0.95	0.99	-0.04
3 Bowater	1.32	1.57	-0.25
4 Bowthorpe	1.03	1.06	-0.03
5 Casket	0.71	2.63	-1.92
6 Cater Allen	n/av	n/av	n/av
7 Community Hospital Grp	n/av	1.02	n/av
8 Cookson Grp	0.94	1.56	-0.62
9 De La Rue	1.67	1.28	0.39
10 Domino Printing	1.09	1.04	0.05
11 Eurotunnel	n/av	-458.33	n/av
12 Jeyes	0.81	1.29	-0.48
13 Kwik Fit	0.92	1.23	-0.31
14 Lovell, Y.J.	1.23	1.39	-0.16
15 Midland Bank	0.92	3.26	-2.34
16 Regalian	0.34	n/av	n/av
17 Renold	2.62	3.64	-1.02
18 Richards	0.32	1.43	-1.11
19 Sketchley	4.50	0.73	3.77
20 Tay Homes	1.16	1.29	-0.13
21 Tibbet & Britten	1.02	1.09	-0.07
22 Westbury	1.07	0.88	0.19
23 Allied Lyons	0.83	1.36	-0.53
24 Asda	-0.39	1.06	-1.45
25 Asda	-0.39	1.06	-1.45
26 Bass	1.00	1.16	-0.16
27 Blue Circle	1.08	1.28	-0.20
28 British Land	1.30	n/av	n/av
29 British Land	1.30	n/av	n/av
30 British Steel	5.60	0.83	4.77
31 City Site Estates	-0.26	n/av	n/av
32 Dares Estates	0.75	n/av	n/av
33 Forte	0.96	1.46	-0.50
34 Land Securities	1.11	n/av	n/av
35 Lasmo	0.12	2.42	-2.30
36 Lasmo	0.12	2.42	-2.30
37 MEPC	1.32	n/av	n/av
38 Taylor Woodrow	0.99	0.44	0.55
39 Vaux	1.20	1.18	0.02
40 Whitbread	1.29	1.25	0.04
41 Helical Bar	1.96	n/av	n/av
42 Next	0.77	1.19	-0.42
43 Worcester Grp	0.81	1.10	-0.29

Note: 1-22 = Equity issues

23-40 = Debt issues

41-43 = Convertible issues

DFL = DFL calculated using M & R estimation technique

DFL2 = DFL based on averaging method

n/av = data not available

5.2, and compared with the DFL estimates obtained from the Mandelker & Rhee estimation procedure.

Over half of the estimates are smaller for the DFL estimated using the time series regression (DFL) than for the DFL using a straight average (DFL2) calculation. This would seem to confirm that the DFL estimates obtained following the Mandelker and Rhee methodology may be understated. Conversely, some of the DFL estimates are larger on the Mandelker and Rhee methodology than on the straight average, so it is difficult to say which method gives the most reliable estimates.

Further estimates of DFL were calculated by taking $EBIT/(EBIT-I)$ for the year prior to the capital issue (DFLPY); $EBIT/(EBIT-I)$ for the year of the capital issue (DFL0); and $EBIT/(EBIT-I)$ for the year following the capital issue (DFL+1). These estimates are shown in Table 5.3. The resulting estimates are closer to the DFL calculated on an average basis (DFL2), than they are to the estimates based on Mandelker and Rhee (DFL).

As mentioned earlier, some DFL estimates are negative, and some are very large. For example,

TABLE 5.3: DFL FOR YEAR PRIOR TO CAPITAL ISSUE, YEAR OF CAPITAL ISSUE
AND YEAR FOLLOWING

Company	Year 0	Year +1	DFLPY	DFLO	DFL+1
1 Anglia Secure Homes	90	91	-0.07	0.17	0.63
2 Bimec	92	93	1.13	1.20	n/av
3 Bowater	90	91	1.41	1.49	1.48
4 Bowthorpe	87	88	1.04	1.03	1.03
5 Casket	91	92	0.04	12.98	1.94
6 Cater Allen	91	92	n/av	n/av	n/av
7 Community Hospital Grp	91	92	1.03	1.01	n/av
8 Cookson Grp	91	92	1.69	1.78	n/av
9 De La Rue	92	93	1.25	1.14	n/av
10 Domino Printing	91	92	1.11	1.06	n/av
11 Eurotunnel	90	91	72.37	834.45	-3199.00
12 Jeyes	89	90	1.47	1.19	1.22
13 Kwik Fit	89	90	1.07	1.06	1.32
14 Lovell, Y.J.	91	92	1.70	0.67	n/av
15 Midland Bank	87	88	1.46	0.62	1.28
16 Regalian	92	93	n/av	n/av	n/av
17 Renold	85	86	0.00	2.02	1.49
18 Richards	89	90	1.03	1.21	1.08
19 Sketchley	91	92	-3.38	-0.21	1.50
20 Tay Homes	87	88	1.23	1.09	1.08
21 Tibbet & Britten	89	90	1.12	1.13	1.14
22 Westbury	92	93	-0.10	0.65	n/av
23 Allied Lyons	89	90	1.33	1.29	1.30
24 Asda	87	88	1.01	1.00	1.01
25 Asda	89	90	1.01	1.01	1.34
26 Bass	89	90	1.10	1.15	1.34
27 Blue Circle	88	89	1.26	1.20	1.24
28 British Land	87	88	n/av	n/av	n/av
29 British Land	92	93	n/av	n/av	n/av
30 British Steel	92	93	1.09	0.18	n/av
31 City Site Estates	87	88	n/av	n/av	n/av
32 Dares Estates	87	88	n/av	n/av	n/av
33 Forte	90	91	1.26	1.38	1.53
34 Land Securities	87	88	n/av	n/av	n/av
35 Lasmø	86	87	1.28	9.34	1.95
36 Lasmø	89	90	3.01	1.64	1.69
37 MEPC	86	87	n/av	n/av	n/av
38 Taylor Woodrow	89	90	1.11	1.18	1.31
39 Vaux	89	90	1.13	1.17	1.23
40 Whitbread	91	92	1.27	1.17	1.24
41 Helical Bar	88	89	n/av	n/av	n/av
42 Next	88	89	1.04	1.08	1.41
43 Worcester Grp	90	91	1.02	1.21	1.28

Note: DFL has been calculated as EBIT/EBIT-1

Yr 0 = year of capital issue

Yr +1 = year following capital issue

DFLPY = DFL for the year prior to capital issue

DFLO = DFL for the year of capital issue

DFL+1 = DFL for year following capital issue

n/av = data was not available for this calcn.

-0.07 - the impact of a small profit divided by a loss (loss after deducting interest from earnings before tax); 834.45 - the impact of a large interest figure divided by a small profit; and -3199.00 - the impact of a large interest figure divided by a small loss. As discussed earlier these results are attributable to the undesirable asymptotic properties of the DFL measure.

5-5-5 Regression Analysis of the Various DFL Estimates

Classical regressions were performed regressing the various DFL measures against each other in turn. For each particular pair of DFL estimations, cases were included only where data was available for both estimation methods. The results are shown in Table 5.4.

When the regressions are run without a constant, there is a strong association (t-ratio of 4.005) between DFL and DFL2, i.e. between DFL estimates based on the Mandelker and Rhee estimation procedures, and DFL2, i.e. DFL estimates based on the averaging procedure. This is therefore supportive of the Mandelker and Rhee estimation technique providing viable estimates of DFL.

TABLE 5.4 : SUMMARY OF REGRESSIONS OF DIFFERENT MEASURES OF DFL

Independent Variable	Dependent Variable	Coefficient (Indep.Var.)	T-ratio (Indep.Var.)	Mean	Std Error	Std Dev'n	Value of Constant
DFL2	DFL	0.6228 (-0.1961)	4.005 (-0.635)	1.4347	0.1555 (0.3088)	0.7292	1.4683
DFL	DFL2	0.5719 (-0.0724)	4.005 (-0.635)	1.1869	0.1428 (0.1140)	1.2002	1.5206
DFLPY	DFL	0.2896 (-0.5989)	1.332 (-3.093)	0.9687	0.2174 (0.1937)	1.0111	1.7671
DFL	DFLPY	0.1992 (-0.4251)	1.332 (-3.093)	1.1869	0.1495 (0.1375)	1.2002	1.4732
DFLO	DFL	0.1361 (-0.1074)	1.416 (-1.289)	1.7330	0.0962 (0.0833)	2.6458	1.3730
DFL	DFLO	0.4749 (-0.5219)	1.416 (-1.289)	1.1869	0.3354 (0.4048)	1.2002	2.3525
DFL2	DFLO	1.3089 (1.7131)	4.882 (2.834)	1.4347	0.2681 (0.6044)	0.7292	-0.7248
DFLO	DFL2	0.3446 (0.1301)	4.882 (2.834)	1.7330	0.0706 (0.0459)	2.6458	1.2091
DFLO	DFLPY	0.1690 (-0.0041)	2.216 (-0.056)	1.7330	0.0763 (0.0722)	2.6458	0.9757
DFLPY	DFLO	0.8571 (-0.2778)	2.216 (-0.056)	0.9687	0.8571 (0.4945)	1.0111	1.7599
DFL2	DFLPY	0.5872 (0.2348)	4.974 (0.909)	1.4347	0.1181 (0.2582)	0.7292	0.6319
DFLPY	DFL2	0.7840 (0.1221)	4.974 (0.909)	0.9687	0.1576 (0.1343)	1.0111	1.3164

Note : Figures in () indicate the values obtained when the regression was run with a constant (one)

: DFL = DFL based on Mandelker & Rhee calc'n
DFL2 = DFL based on (straight) averaging
DFLPY = DFL for year prior to capital issue
DFLO = DFL for year of capital issue

As might be expected, there is also a strong association (t-ratio of 4.882) between DFL2 and DFL0 (the DFL for the year of capital issue); and between DFL2 and DFLPY (the DFL for the year prior to the capital issue), with a t-ratio of 4.974.

When a constant is included in the regression, the associations are strongest between DFL and DFLPY (t-ratio -3.093), although not in the expected direction. There is also a strong association between DFL0 and DFL2 (t-ratio 2.834).

It would therefore seem that the estimates are very sensitive to the method of estimation used.

The estimates of DFL, DOL, and DCL will be used in the subsequent probit analysis in Chapter 8 to determine if any of these leverage measures are statistically significant in determining the choice between debt and equity in the capital issue decision.

5-6 Relationship between Beta and DFL, DOL, and DCL

5-6-1 Variation in Beta and DFL, DOL, and DCL

The empirical findings of Mandelker and Rhee (1984) suggested that the degrees of operating and financial leverage explain a large proportion of the variation in beta.

Classical regressions were ran of the various measures of DFL, DOL, and DCL, against beta. The results are summarised in Table 5.5.

5-6-2 Analysis of Regressions of Beta and DFL, DOL, and DCL

In looking at the relationship between beta, DFL, DOL, and DCL, the following was noted:

(i) the signs of the coefficients are as expected, i.e. there is a positive relationship between beta and the measures of risk. This is as anticipated, given that beta captures systematic risk, and systematic risk increases with leverage measures.

This would suggest that an even better explanator

TABLE 5.5 : SUMMARY OF REGRESSIONS OF DFL,DOL,DCL, AND BETA

Independent Variable	Dependent Variable	Coefficient (Indep.Var.)	T-ratio (Indep.Var.)	Mean	Std Error	Std Dev'n
BETA	DFL	0.9687	5.988	1.1104	0.1618	0.2805
BETA	DFL2	1.1509	9.341	1.1060	0.1232	0.3023
BETA	DFLPY	0.8104	4.773	1.1060	0.1698	0.3023
BETA	DFLO	1.4442	3.226	1.1060	0.4477	0.3023
BETA	DOL	1.4009	2.172	1.1060	0.6450	0.3023
BETA	DCL	5.2759	1.548	1.1060	3.4089	0.3023

Note : DFL = DFL based on Mandelker & Rhee calc'n
DFL2 = DFL based on (straight) averaging
DFLPY = DFL for year prior to capital issue
DFLO = DFL for year of capital issue
DOL = DOL based on Mandelker & Rhee calc'n
DCL = DCL based on DFL x DOL (Mandlker & Rhee calc'n)
BETA = BETA obtained from Datastream

of beta could be obtained by combining DFL and DOL into DCL (alternatively, one could view DFL and DOL as components of DCL).

One would expect to capture the decomposition of beta into operating and financial risk, since:

$$\text{beta} = f(\text{DCL}),$$

and therefore:

$$\text{beta} = f(\text{DOL} \times \text{DFL}),$$

if that is the case then DCL would outperform both of them in the regression, i.e. there should be a better relationship between beta and DCL, than between beta and DFL, or beta and DOL.

(ii) As can be seen from Table 5.5 this is not supported by the results of the regressions of DCL on beta. It does not show such a strong relationship as either DFL or DOL on beta.

There is a strong relationship between beta and DFL (t-ratio 5.988), and between beta and DFLPY (t-ratio 4.773), but the strongest relationship is between beta and DFL2 (t-ratio of 9.341). This latter is a very strong relationship indeed; whilst the relationship between beta and DCL is weak (t-ratio of 1.548).

There are several possible explanations for this:

(i) the DCL measure is not properly specified. It may be that $(DFL \times DOL)$ is not appropriate where those estimates have been generated by averaging or regression. The functional form of the model assumes proportionality (in sales, etc.) but these variables are non-linear.

(ii) operating and financial leverage are perhaps to some extent substitutes

(iii) the non-linear elasticity proportions of DCL do not relate well to the more linear attributes of beta.

5-7 Conclusions

EBIT-EPS analysis is in essence a simplistic, deterministic method of arriving at the preferred financing alternative. Although it has been extended in this Chapter to 'preference versus ordinary shares' and 'preference shares versus debt' choices, these limitations remain.

It is generally accepted that the stochastic process that best characterises EBIT over time is a martingale. In such a process, the uncertainty that attaches to the value of EBIT at time t into the future is $\sigma\sqrt{t}$, where σ is the instantaneous

variance of the process. The smaller the value of t , the better the current (realised) value of EBIT approximates the value at time t . To this extent, the omission of explicit consideration of uncertainty is tantamount to a 'short-termist' approach to the finance choice problem.

The analysis of this Chapter is subsequently picked up empirically in two ways.

First, the 'preferred' method is analysed by means of hypothetical reconstructions in Chapter 6. Although of interest to look directly to see if companies appear to use the finance method that maximises EPS, this information is also captured in the form of a dummy variable which is used in the probit analysis in Chapter 8.

Second, the sensitivity of EPS to changes in EBIT and output volume is captured by the elasticity measures DFL and DOL, which are potentially informative risk measures that are estimated in this Chapter prior to their inclusion in the probit model of Chapter 8. A priori, the higher the DFL, the less likely a company is to finance with debt because this would add further variability to the EPS.

The next Chapter deals with the first task - the use of financial reconstructions to determine the preferred finance method based on EPS-EBIT analysis.

CHAPTER 6 : FINANCIAL STATEMENT RECONSTRUCTION

6-1 Introduction

The purpose of the financial statement analysis is (i) to investigate whether the method of issue chosen appears to be that which maximises EPS, and (ii) to derive a dummy variable which will be used in subsequent regression analysis, this variable indicating which method of finance gives rise to the higher EPS. The main benefit of this approach is that, given that all companies are different, and therefore it is impossible to find two companies which are perfect substitutes other than that one has issued debt and one equity, this approach allows one to hold everything constant except for the method of issue.

The reconstruction proceeds as follows. Those companies which issued debt had their financial statements reconstructed to see what the effect would have been if they had issued equity, and vice versa. The reconstructions are carried out for the year of the capital issue, and the year following. The year of issue may be the focus point for those people who have a very short-term outlook, whilst the year following represents the 'steady state'.

The results of the reconstructions provide evidence that is consistent with functional fixation on EPS (the performance of the firm tends to be judged to an irrational extent on EPS). This was particularly apparent for the companies which had originally issued debt, when in most cases, the reconstructions showed that a lower EPS would have resulted had they issued equity.

6-2 Methodology

6-2-1 Choice of Methodology

There are several methodological approaches which could be undertaken, viz:

statistical,

case study,

questionnaires/field work.

The standard statistical analysis looks for variables which partition the data in such a way that the determinants of debt-equity choice can be explained. This approach is adopted subsequently, however the difficulty with it is in trying to work out the appropriate form for the model and what the appropriate variables

would be. As discussed in Chapter 2, there is no consensus view as to the appropriate theoretical paradigm, let alone the appropriate model specification.

Reconstruction offers a number of advantages in the present context:

(i) given the absence of close substitutes for any given company, reconstruction is the only technique that enables all other factors (other than the debt-equity choice under consideration) to be held constant.

(ii) the data required to perform the reconstructions in this context are relatively 'hard'. For example, as is shown later, a debt issue hypothesised as the alternative to an actual equity issue can be fairly accurately modelled with reference to merchant banking procedures which make use of the benchmark gilt mechanism.

It is slightly more difficult to infer the terms of equity issues although certain assumptions in line with the empirical findings of Davidson and Mallin (1992) can be used.

(iii) 'knock-on' effects such as taxation can be dealt with satisfactorily given knowledge of taxation rules and accounting procedures. In the case of taxation, a note of caution is appropriate. In the event of tax-exhausted companies, it is not easy to work out from conventional published information the extent to which a company is tax-exhausted. Although evidence was collected from Datastream on companies with certain tax problems - for example, irrecoverable ACT, it is difficult to deal with this problem satisfactorily but the margin of error on overall EPS calculations is unlikely to be significant.

The reconstruction work has two clearly defined categories, viz:

(i) those companies which had issued equity - for these companies the reconstruction investigates the implications had debt been issued instead of equity, and

(ii) those companies which had issued debt - for these companies the reconstruction investigates the implications had equity been issued instead of debt.

The main sample comprised 'simple' issues, i.e. straight debt for straight equity and vice versa. A small number of more complex financial instruments available to companies are also examined. The sample was chosen from the companies which were sent questionnaires on capital issues (see Appendix 3.2 for list of these).

The problems of reconstruction are discussed below.

6-2-2 Complications Encountered in the Reconstruction Procedure

There were a number of complications experienced in the reconstruction procedure. Some complications apply only in the case of debt reconstructions for companies originally issuing equity, whilst others apply only to equity reconstructions for companies originally issuing debt. These specific complications are dealt with in the relevant sections (6-2-3 and 6-2-4). Complications which affected all reconstructions are discussed below.

(a) Calculation of number of shares

On the reconstructions, there is a section which shows the following items:

- (i) The total number of ordinary shares in issue at the start of the year .
- (ii) Weighted average number of ordinary shares in issue at the start of the year
- (iii) The number of new ordinary shares issued during the year (i.e. increase in the year)
- (iv) The number of new ordinary shares used in the EPS calculation (i.e. increase in the year in weighted average number of shares)
- (v) The total number of ordinary shares in issue at the end of the year
- (vi) The weighted average number of ordinary shares in issue at the end of the year.

In trying to arrive at the original figures for the total number of ordinary shares in issue and for the weighted average ordinary share capital, the initial view taken was that the former could be arrived at by dividing the Datastream figures for total ordinary share capital by the EPS (with EPS calculated on the year end number of ordinary

shares) and the weighted average share capital could be inferred by the EPS figure (with EPS calculated on the average number of ordinary shares in issue). However Datastream adjusts the EPS figure to take account of rights and scrip issues subsequent to the year end, e.g. the EPS figure for 1987 would be adjusted to take account of a rights issue in 1990. So if the Datastream EPS figure as given had been used this would have been referring to the number of shares in issue in 1987 plus any new shares from subsequent rights or scrip issues. Expressions were therefore set up on Datastream to derive the number of shares in issue at any specific year end, both in total and also for the weighted average number of shares. This involved stripping out any subsequent adjustment for new shares to arrive back at the 'raw' figure for a particular year. For the total number of shares the expression was Datastream item 246/item 245, whilst for the weighted average number of shares the expression was Datastream item 248/item 245. These item numbers are not generally available, but were provided by Datastream to facilitate the above calculation.

(b) Implications of SSAP3 on Reconstructions

One particular problem that had to be dealt with was the calculation of EPS when there is a rights issue during the accounting period. This affected both those cases for which the actual issue was a rights issue, and those where the hypothetical comparative was a rights issue in the equity for debt reconstructions.

(i) SSAP 3 and Rights Issues

Statement of Standard Accounting Practice (SSAP) 3 on Earnings per Share states 'most issues for cash in this country are in the form of rights issues rather than at full market price', para 14. SSAP3 then deals with the effect of a rights issue on the calculation of EPS:

- (i) Earnings per share for prior years : Where equity shares are issued by way of rights during the period it is recommended that the factor for adjustment of past earnings per share after a rights issue be based on the closing price on the last day of quotation of the shares cum rights. The factor is therefore:

Theoretical EX-RIGHTS price

Actual CUM RIGHTS price on the last day
of quotation cum rights

Where a rights issue is made during the year under review, the earnings per share for the previous year, and for all earlier years, will need to be adjusted by the factor, calculated as above, to correct for the bonus element in the rights issue, (para 17).

- (ii) Earnings per share for the year in which a rights issue is made: For the current year in which a rights issue is made it would be undesirable to split the earnings into two periods, one before the rights issue and one after this event. It is necessary to adjust the weighted average share capital by taking the proportion of the capital in issue before the rights issue, applying to this figure the reciprocal of the factor set out above, i.e.,

Actual cum rights price

Theoretical ex rights price

and adding the proportion in issue after the

rights issue.

Example:

On 1st January 1991, X plc had an issued share capital of 720,000 ordinary 25p nominal value fully paid shares.

A rights issue was announced on 1st June 1991 of 1:4 at £1 per share. Market value per share on 30th June 1991 was £2 (the closing price on the last day of quotation of the share cum-rights). On 1st July, the rights issue took place.

The rights issue on 1st July 1991 can be split into (i) fresh issue at market value and (ii) bonus issue.

(i) fresh issue at market value

Total proceeds from rights issue = 180,000 shares
at £1 per share = £180,000.

The market price = £2 per share.

Fresh issue at market value = $\frac{£180000}{£2} = 90,000$

shares.

(ii) bonus issue

Total number of shares issued	= 180,000
Less fresh issue at market value	= <u>(90,000)</u>
Bonus issue	= 90,000

Bonus issue of 90,000 shares is based on:

- (i) 720,000 shares in issue on 1st Jan. 1991
- (ii) 90,000 shares (fresh issue) on 1st Jul.
1991

i.e. a total of 810,000 shares.

The bonus ratio is therefore $90,000:810,000 = 1:9$

This gives a factor of $9/10$.

<u>Shares</u>	<u>Actual</u>		<u>Weighted Av.</u>
1/1/91	720,000	x10/9 x6/12	400,000
1/7/91	<u>90,000</u>		
Fresh iss.			
	810,000	x10/9 x6/12	450,000
1/7/91	<u>90000</u>		<u>-</u>
Bonus iss.			
31/12/91	<u>900,000</u>		<u>850,000</u>

If the earnings available for ord. shareholders were £300,000, then the EPS would be 35p/share:

i.e. £300,000
 850,000

If the previous year's earnings had been £220,000, giving an EPS of 31p/share (£220,000/720,000), then this would be adjusted as follows to take account of the bonus element in the 1991 rights issue:

$$31p \times 9/10 = 27.9p/\text{share}.$$

The effect of these requirements is discussed more fully in the relevant 'equity to debt' or 'debt to equity' scenarios.

Two further points should be mentioned in relation to SSAP3 and the calculation of EPS.

(ii) SSAP3 and Part-Paid Shares

The first concerns part-paid issues, where SSAP3 states "where some of the shares are not fully paid, the earnings should be apportioned over the different classes of shares in accordance with their dividend rights or other rights to participate in profits", para 10. Therefore if a £1 nominal share (having a right to participate in profits) were 40p paid up, then in the weighted average number of shares calculation for

EPS, 5 such shares would count, not as 5 shares, but as the equivalent of 2 fully paid shares, i.e. they are included pro rata to the amount paid up. This is based on the assumption that shareholders of partly paid shares are to receive such proportion of the dividend entitlement due to fully paid shareholders so as to reflect the extent and period that the shares are partly paid.

(iii) SSAP3 and Convertibles

Secondly, SSAP3 states "where a listed company has outstanding debentures or loan stock (or preference shares) convertible into equity shares of the company....in addition to the basic earnings per share, the fully diluted earnings per share should be calculated", para 20. It further states "the fully diluted earnings per share should be calculated on the assumption that the maximum number of new equity shares had been issued on conversion and that this conversion had taken place on the first day of the period (or on the date of issue of the convertible loan stock if later). The earnings for the period should be adjusted by adding back the assumed saving of interest on the stock so converted, net of corporation tax", para 30.

These points also affect certain reconstructions.

6-2-3 Debt Reconstructions for Companies

Issuing Equity

The main problems to be encountered in the reconstruction of debt for those companies which originally issued equity were as follows:

(a) Appropriate Coupon Rate

For those companies which had issued equity, a central question was if they had issued debt what would the coupon on the debt have been?

In order to address this question, discussions were held with major merchant banks, namely representatives from James Capel, S.G. Warburg, Smith New Court, Barclays de Zoete Wedd (BZW) and Cazenove, and also the Bank of England. The consensus was that when a company plans to issue debt, the debt is normally issued at par or very close to par and the rate of interest is set with reference to the 'benchmark gilt'. The benchmark gilt is set via an informal mechanism between the main brokers. It tends to be a large stock which is a very liquid issue, is well-traded and has a close spread (is traded close to par). Its

coupon must be reasonably current in the particular year for which it is a benchmark. For example, the 5 year benchmark gilt in 1992 is 10.5% Exchequer 1997, the alternatives are a 13.25% stock and a 15% stock (both of which are too high) and an 8.75% stock (which is too low). Table 6.1 shows the benchmark gilts for the period 1986-1991 for debt issued for five years, ten years and over ten years. The number by the side of each gilt has been used to cross-refer to that particular gilt subsequently in Table 6.3 (when comparing the coupons on debt issues to the relevant benchmark gilt).

The redemption yield on the benchmark gilt provides the initial reference point for setting the coupon on an individual company's debt. A number of other factors are then taken into account, viz:

- (i) the credit rating as per Standard & Poor's or Moody's
- (ii) level of interest cover
- (iii) impact on company's gearing
- (iv) effect on company's financial statements
- (v) security for the debt
- (vi) existing issues for a particular company
- (vii) similar issues in existence for other

TABLE 6.1 : BENCHMARK GILTS 1986-1992

	Year	Maturity (years)	Gilt
(1)	1986	5	11% Exchequer 1991
(2)		10	10% Conversion 1996
(3)		10+	11.75% Treasury 2003-2007
(4)	1987	5	13.5% Exchequer 1992
(5)		10	8.75% Treasury 1997
(3)		10+	11.75% Treasury 2003-2007
(6)	1988	5	10% Treasury 1993
(7)		10	12% Exchequer 1998
(8)		10+	9% Treasury 2008
(9)	1989	5	10% Treasury 1994
(10)		10	12.25% Exchequer 1999
(8)		10+	9% Treasury 2008
(11)	1990	5	12% Treasury 1995
(12)		10	9% Conversion 2000
(8)		10+	9% Treasury 2008
(13)	1991	5	10% Conversion 1996
(14)		10	10% Treasury 2001
(8)		10+	9% Treasury 2008
(15)	1992	5	10.5% Exchequer 1997
(16)		10	9.75% Treasury 2002
(8)		10+	9% Treasury 2008

TABLE 6.2 : RATINGS USED BY STANDARD AND POOR & MOODY'S

Standard and Poor's rating

A rating of the standing of the bond. The following ratings are used:

Rating	Explanation
AAA	Capacity to pay interest and repay principal is extremely strong.
AA	Very strong capacity to pay interest and repay principal, differing from AAA only to a small degree.
A	Strong capacity to pay interest and repay principal, but more susceptible to adverse changes in economic conditions than AAA or AA.
BBB	Adequate capacity to pay interest and repay principal.
BB, B, CCC, CC	Regarded on balance as predominantly speculative with respect to capacity to pay interest and repay principal in accordance with the terms of the obligation.
C	Reserved for income bonds on which no interest is being paid.
D	In default and payment of interest, and/or repayment of principal is in default.

The ratings from AA to BB maybe modified by the addition of a "+" or "-" sign to show relative standing within the stated categories.

Moody's rating

This is a rating of the risk of investing in the company. The following ratings are used:

Aaa	Judged to be of the best quality.
Aa	Judged to be high quality by all standards.
A	Possess many favourable investment attributes and are considered as upper medium grade obligations.
Baa	Considered as medium grade obligations.
Ba	Judged to have speculative elements.
B	Generally lack characteristics of a desirable investment.
Caa	Of poor standing.
Ca	Represent obligations which are speculative in a high degree.
C	The lowest rated class of bonds.

The ratings from Aa to B may be modified by numerals 1, 2 and 3 in order to give a more precise indication of relative debt quality in each of the categories.

Source: Datastream

companies

(viii) company's reputation and how it is
perceived by the market

Some aspects of the above factors will now be
discussed in more detail.

The credit rating may use either Standard and
Poor's (S & P) rating or Moody's rating. S & P
rating is a rating of the standing of a
particular bond, whereas Moody's rating is a
rating of the risk of investing in the company.
An explanation of the ratings used by both firms
is shown in Table 6.2.

Factors such as the level of interest cover, the
capital gearing, effect on the company's
financial statements and the security for the
debt are often covered by debt covenants. For
example, a typical fixed charge debenture
agreement might stipulate that the interest
should be covered 1.66 times, and that there
should be capital cover of between 1 and 1.66.
However, as might be expected, a debenture with
a floating charge would have more severe
restrictions in the form of covenants. These
might stipulate the following:

- (i) the borrowing limit covering the total borrowings of the company,
- (ii) all loans to be covered 1.75 times (total capital and reserves - goodwill),
- (iii) prior charges should not exceed 20% of total tangible net assets,
- (iv) borrowings ranking 'pari passu' should not exceed 2/3 of tangible net assets,
- (v) prevention of disposal of assets without prior approval,
- (vi) interest payments must not exceed a certain percentage of the previous year's profit before interest and tax.

Existing issues for a particular company are taken into account - a company issuing more debt would usually have to pay a higher rate of interest or offer the new issue at less than par in order to make it attractive enough to investors.

Issues which are in existence for similar companies may also influence the terms of any new issue coming to the market.

Finally the company's reputation and how it is perceived by the market both have an effect on the terms. For example, Hanson has a 'good'

reputation at present and any issue coming to the market tends to be viewed in a favourable light.

The above factors all clearly influence the terms of the issue. Contact with senior personnel in the merchant banks mentioned above, revealed that, in practical terms, the procedure for setting the coupon on debt securities is as follows.

The redemption yield on the benchmark gilt is taken as the starting point in setting the interest rate and then the following percentages are added:

- (i) 1% - high quality issues which are well covered, with the debt secured by a fixed charge
- (ii) 2% - better quality floating charge debt, and poorer quality fixed charge debt
- (iii) 2%+ - less secure debt, preference shares and deeply subordinated debt

For example, the appropriate benchmark gilt for a particular issue might have a redemption yield of 9%, the margin above that yield for the particular issue might be 1.2%, this therefore offers a yield of 10.2%. The debt might be

issued at 100 with a coupon of 10.2%, but there is a tendency to issue at a round coupon with a price fairly close to par, so for example, issue the debt at 99.7 with a coupon of 10.25%.

In order to examine the link between the benchmark gilt and the coupon on individual debt issues made by companies, a sample of debt issues from the period 1986-1991 was examined. The sample comprised all debt issues brought to the market by companies in the capital issues questionnaire sample (whether they had responded to the questionnaire or not) where the debt issues were 'simple' i.e. non-convertible and issues fully paid not part paid.

The coupon on these was compared to the redemption yield on the benchmark gilt appropriate for that particular issue. It was expected that the coupon would be the yield on the benchmark gilt plus 1% to 3%. The results in Table 6.3 show that the coupon rates on the debt issues examined are based on the benchmark gilt redemption yield plus a percentage falling in the range 0.535% to 2.805%.

Therefore, when reconstructing the financial statements and looking at the implications had

TABLE 6.3 : COMPARISON OF COUPONS ON DEBT ISSUED AND RETURNS ON BENCHMARK GILTS

Company	Ind. Grp.	Issue Date	Issue Price £	Coupon %	Amount Issued £mn	Redemption Date	Benchmark Gilt	Benchmark %	(5-9) %	S & P Rating	Moody's Rating
Allied-Lyons	Ind	10/2/89	98.477	9.750	350.00	1/4/19	8	8.93	0.82		
Allied-Lyons	Ind	26/9/91	99.375	10.625	150.00	25/02/99	14	9.61	1.015		A1
Asda Group	Ind	15/5/86	99.500	9.625	100.00	25/4/02	3	9.09	0.535		Ba1
Asda Group	Ind	31/3/89	101.753	10.875	125.00	20/04/10	8	9.19	1.685		Ba1
Bass	Ind	19/4/89	100.550	10.375	250.00	30/09/16	8	9.29	1.085		
Blue Circle	Ind	29/11/88	99.250	10.750	150.00	29/11/13	8	9.19	1.56		A3
British Land	Fin	1/4/86	100.000	10.500	12.56	9/19-24	3	8.87	1.63		
British Land	Fin	30/4/91	100.682	12.500	150.00	25/3/16	8	9.91	2.59		
British Steel	Ind	10/7/91	100.572	11.500	150.00	20/7/16	8	9.78	1.72		
British Sugar	Ind	30/6/88	99.026	10.750	150.00	2/7/13	8	9.34	1.41		
City Sites	Fin	14/4/87	99.170	10.500	25.00	31/3/17	3	9.33	1.17		
Dares Estates	Fin	8/6/87	99.239	10.250	35.00	1/6/12	3	8.90	1.35		
Greenalls	Ind	5/6/91	100.000	11.500	99.65	24/3/14	8	10.20	1.30		
John Lewis	Ind	27/3/86	100.500	10.250	50.00	6/5/06	3	8.97	1.28		
John Lewis	Ind	6/2/89	100.233	10.500	100.00	23/1/14	8	8.97	1.53		
Land Securities	Fin	29/4/86	98.125	9.500	200.00	29/4/07	3	8.90	0.60		A1
Lasmo	Ind	17/4/86	100.375	10.125	50.00	7/5/93	2				
Lasmo	Ind	13/3/89	99.281	10.375	150.00	22/6/09	8	9.08	1.295		
MEPC	Ind	26/3/86	100.000	10.250	75.00	15/4/03	3	9.16	1.09	A+	
MEPC	Ind	19/2/86	100.000	11.250	50.00	15/3/93	2			A+	
Monks Inv. Tst.	Fin	22/1/87	99.237	11.000	40.00	1/6/12	3	10.04	0.96		
Resort Hotels	Ind	21/11/91	100.875	12.375	20.00	21/11/16	8	9.57	2.805		
Trusthouse Forte	Ind	22/2/89	100.750	10.750	100.00	24/01/96	10	10.03	0.72	A	
Vaux Group	Ind	17/5/89	99.523	10.750	60.00	26/9/19	8	9.31	1.44		
Whitbread	Ind	7/12/90	99.286	11.625	135.00	31/1/11	8	10.19	1.435		

debt been issued instead of equity, the debt was assumed to be issued at par and the coupon was taken as the redemption yield on the benchmark gilt relevant to the date of issue and the length of debt, plus a certain percentage. This percentage was examined for the range 1% to 3%, so that the sensitivity to coupon rates could be ascertained as well.

(b) Tax Relief on Debt Interest

Another complication which may arise in the debt instead of equity situation is the problem of tax relief on debt interest. A company might be unable to relieve additional tax relief against its current year's profits if they have insufficient to allow offset of the additional relief. In this case the assumption has been made that the company would either carry the amount back and relieve it against earlier year's profits or carry it forward and relieve it against the profits of future years.

(c) ACT on Dividends

Where a company has an issue of equity and this is substituted by debt, then the Advance Corporation Tax (ACT) attributable to the

dividends on the new shares will not arise. This has been viewed as a timing difference, so that the ACT which would have been payable at one of the quarter ends¹ is deemed to be payable in the form of mainstream corporation tax 9 months after the company's year end.

(d) Date Interest to Accrue From

When a rights issue is made there are various significant dates in a typical rights issues timetable. Table 6.4 shows that there is an average period of 18 days between the announcement of the issue and the ex-rights date, and then an average of a further 20 days between the ex-rights date and the last date for payment in full for the rights by the shareholders.

When reconstructing a rights issue with debt, the debt interest has been assumed to accrue from the date representing the last date for payment in full on the original rights issue.

¹ACT becomes due within 14 days of the end of the return period in which the distribution was made. Companies usually make quarterly returns to the Inland Revenue for the quarters ending 31 March, 30 June, 30 September and 31 December. If the company's accounting period ends on a different date, then a return is also made on that date. In contrast, Mainstream Corporation Tax is due 9 months after the company's year end.

6-2-3 Equity Reconstructions for Companies

Issuing Debt

The main problems to be encountered in the reconstruction of equity for those companies which originally issued debt were as follows:

(a) Issue Price of Equity

Firstly, the issue price of any new shares that would have been issued instead of debt has to be considered.

By far the most common form of equity issue in the U.K. is a rights issue, due in part to the pre-emption clause appearing in the 1980 Companies Act (s17-19) and subsequently in the consolidating 1985 Companies Act (s89). However, Stock Exchange regulations had effectively mandated pre-emption for a number of years prior to this. The statutory pre-emption clauses require that, unless the Articles of Association state otherwise, new shares must first be offered pro-rata to existing shareholders before they can be offered generally. A special resolution requiring a 75% majority is required to disapply pre-emption rights.

Given that rights issues are the most common form of equity issue in the U.K., the price to be inferred for equity was based on a rights issue.

Davidson and Mallin (1992) carried out an extensive review of all 'simple' U.K. rights issues over the period 1985-1992. They found that the average discount of the rights in relation to the market price was close to 20%. This figure has been used when calculating the number of ordinary shares to be issued to equal the same monetary amount as the debt raised.

(b) Calculation of Weighted Average Number of Shares

A pivotal problem encountered in the reconstructions was how to calculate the weighted average number of shares for use in the EPS calculation. It was clear that for any attempt at reconstruction using a hypothetical rights issue, it would be necessary to arrive at a figure for the weighted average number of shares using the adjustment recommended in SSAP3. As noted above, for rights issues this involves an adjustment requiring the actual cum-rights price and the theoretical ex-rights price.

A formula was set-up to try to calculate the ex-rights and cum-rights prices, utilising the results of Davidson & Mallin (1992) who found that, on average, there is approximately a 20% discount on the offer price of a rights issue compared to the share's current market value.

Example:

A company has a share capital of 2000 £1 ordinary shares. The current share price is £4 per share.

The company requires £2000 for a project. The company could raise the funds through a debt issue, at say 10% p.a., and the share price would remain at £4. Alternatively, the company could raise the money via a rights issue.

In order to find the theoretical ex-rights price that would be required to calculate the weighted average number of ordinary shares to be used in the EPS calculation if a rights issue were made, the following calculation can be made.

Assuming that:

P_0 = price before rights issue ($0.8P_c$)

P_c = price during the period of the
rights issue (i.e. cum rights price)

P_x = theoretical ex-rights price

£B = amount of bond issue to be replaced

then:

assume $P_0 = 0.8P_c$

$$= 0.8 \times £4$$

$$= £3.20$$

$N = 2000$ shares (given)

$$M = \underline{£B} = \underline{2000}$$

$$P_0 \quad £3.20$$

$$= 625 \text{ shares}$$

The terms of the rights issue are:

$$M : N \quad (= m : n)$$

$$625 : 2000$$

$$5 : 16$$

$$P_x = \frac{mP_0 + nP_c}{m+n}$$

$$= \frac{5 \times 3.20 + 16 \times 4}{21}$$

$$21$$

$$= \frac{16 + 64}{21}$$

$$21$$

$$= £3.81$$

Therefore, the theoretical ex-rights price is

£3.81. This could then be used in the SSAP3 calculation discussed above.

The formula outlined above has been used for all the debt to equity reconstructions in order to work out the ex-rights price.

The share price for P_c was taken as the share price on the announcement date of the debt.

For many companies which had made a debt issue, there was also an actual increase in the number of ordinary shares in issue during the year. It would not have been practical to exclude these companies from the reconstruction exercise, given that the majority of companies were affected. The date of the equity issue was ascertained from Extel cards.

When calculating any bonus element arising from the rights, it was necessary to determine whether the increase in shares during the year arose before or after the rights issue. In the former situation, i.e. if the issue took place before the rights issue, then two figures were calculated in order to be able to work out the bonus element in the rights issue. These were (i) the number of shares in issue at the start of

the year up to the date of the actual issue and then (ii) the figure calculated in (i) to which is added the number of shares in the new issue, taken up to the date of the rights issue. The bonus element is therefore worked out on (i) the number of shares in issue for the whole period before the rights issue and (ii) those in issue for only some of the period before the rights issue. Straight time apportionment is used to calculate the weighted average number of shares.

In the latter situation, i.e. where the increase in ordinary shares occurs after the rights issue, then no bonus element arises on the new shares. The bonus element calculation still needs to be done for the shares in issue before the rights issue. For the final figure for the weighted average shares, the amount of any new issue (after the rights issue) is calculated on a straight time apportionment basis, and added to the figure worked out previously as a result of the rights issues calculation.

(c) Irrecoverable ACT

Another consideration is that of irrecoverable ACT. When more shares are issued the total amount of the dividend paid will almost

invariably be higher. This may lead to irrecoverable ACT as the ACT set-off in any year is limited to the amount of ACT that would relate to a dividend that, when grossed up for the ACT, would absorb all the taxable income. A company is therefore only entitled to offset a maximum amount of ACT currently equal to 25% of the aggregate of the company's profits including chargeable gains.

The individual company's accounts details were checked to Datastream to check whether there was any existing irrecoverable ACT. Datastream item 164 'Irrecoverable Advance Corporation Tax' was checked for all companies, and the results are shown in Table 6.4A. Only one debt issue is affected by irrecoverable ACT (although one company which originally issued debt does have a write-back of irrecoverable ACT). The assumption was then made that any additional equity issue would not give rise to irrecoverable ACT - this would seem to be a reasonable assumption given the ACT carry back and carry forward reliefs discussed below.

Unrelieved ACT can be carried back for six years or forward indefinitely against other years' corporation tax liability. The assumption has

TABLE 6.4A : COMPANIES WITH IRRECOVERABLE ACT

Company	Amount £mn		Year	
Bowater	(1.8)	*	1990	YI(E)
Bowater	(0.4)	*	1991	YF(E)
Casket	0.053		1991	YI(E)
Cookson Group	5.6		1991	YI(E)
Renold	0.5		1986	YF(E)
Blue Circle	(18.5)	*	1988	YI(D)
British Steel	35.0		1992	YI(D)

Note: YI(E) = year of capital issue (equity)

YF(E) = year following year of capital issue (equity)

YI(D) = year of capital issue (debt)

YF(D) = year following year of capital issue (debt)

* = negative irrecoverable ACT (i.e. a write-back)

therefore been made that any additional ACT which cannot be relieved against the profits for the year will be either carried back or carried forward against future years' profits.

(d) Corporation Tax Implications

Thirdly, as the amount of relief in respect of debt interest will be reduced, then the tax associated with this must be added back to the tax charge for the year.

(e) Interest Capitalised

A note was also made of any interest capitalised. Some companies with large interest payments choose to capitalise the interest associated with, for example, a loan that has financed the purchase of a building. This interest does not, per se, pass through the profit and loss account, although it may indirectly through depreciation (amortisation) charges. However, it would not have the same impact because the associated capital asset would generally be depreciated over a much longer period than the term of the loan, so the impact of the interest charges on profits would be diluted (and would not show at all for income gearing measures).

TABLE 6.4B : COMPANIES WITH CAPITALISED INTEREST

Company	Amount £mn	Year	
Anglia Secure Homes	0.522	1990	YI(E)
Bowater	7.6	1990	YI(E)
Bowater	3.1	1991	YF(E)
Community Hospital	1.074	1991	YI(E)
Allied Lyons	2.0	1989	YI(D)
Allied Lyons	3.0	1990	YF(D)
Asda	17.5	1987	YI(D)
Asda	17.4	1988	YF(D)
Asda	27.9	1989	YI(D)
Asda	38.1	1990	YF(D)
Bass	1.0	1989	YI(D)
Bass	3.0	1990	YF(D)
Forte	11.2	1990	YI(D)
Forte	12.0	1991	YF(D)
Lasmo	1.2	1986	YI(D)
Lasmo	1.4	1987	YF(D)
Taylor Woodrow	5.2	1989	YI(D)
Taylor Woodrow	8.7	1990	YF(D)
Vaux Group	1.302	1989	YI(D)
Vaux Group	2.775	1990	YF(D)
Whitbread	9.0	1991	YI(D)
Whitbread	8.8	1992	YF(D)
Next	3.459	1988	YI(C)
Next	6.5	1989	YF(C)

Note: YI(E) = year of capital issue (equity)

YF(E) = year following year of capital issue (equity)

YI(D) = year of capital issue (debt)

YF(D) = year following year of capital issue (debt)

YI(C) = year of capital issue (convertible bonds)

YF(C) = year following year of capital issue (convertible bonds)

When carrying out a reconstruction of equity for a debt issue on which the interest had been capitalised, there was usually little or no interest to be added back on the equity reconstruction. Although the full amount of interest on the debt could have been added back (even though the company itself had capitalised the interest arising from the original issue of debt) it was felt that this would have been distortionary. Table 6.4B shows that many of the companies which issued debt originally chose to capitalise the interest - a policy which would have resulted in a higher EPS.

(f) Timing Problems

Occasionally debt is issued in two 'tranches', say, six months apart. On the reconstruction, the whole amount of the equity issue is deemed to have been made on the date of issue of the first tranche of debt. The rationale being that when the debt was issued in two stages, it would have been known that the money from the second tranche would be available within a fairly short time period, therefore the whole amount has been included from the first date for the equity. A part-paid equity issue could have been used for the reconstruction but in practice this is not

generally very popular, particularly for the short time span (between the first part of the issue and the second) being discussed.

6-3 Reconstruction Procedure

6-3-1 Obtaining the Data

The procedure followed in order to reconstruct the statements will now be considered in detail.

In all cases the original data were obtained from Datastream (using program 190A for the profit and loss account data). This included details of the operating profit, interest charges, published pre-tax profit, taxation charges, preference dividends, minority interest and tax rate. All of the accounts items for a published set of financial statements were checked from Datastream to published accounts of several companies, to ensure that Datastream's definition of any particular item was in agreement with the published accounts figure. This led to several detailed discussions with analysts at Datastream, to ensure that the resulting data items used were in agreement with the usual definitions of the various account items.

Examples of the areas discussed were:

(i) the calculation of the tax charge to ensure that the Datastream figure had not been adjusted (for the effects of SSAP15 [withdrawn] for example) by the Datastream analysts so that it no longer mirrored the tax charge per the published accounts; and

(ii) to ensure that the 'earnings for ordinary shareholders' figure was as published by the company. The Datastream analysts may occasionally reclassify, for example, an exceptional gain as an extraordinary gain if they feel that, within the definitions of SSAP6 (now superseded by FRS3) it is an extraordinary gain rather than an exceptional one. In other words, they try to adjust for any perceived manipulation by companies in their financial statements.

6-3-2 Data Relating to Equity Reconstructions for Companies Issuing Debt

The details of bonds were obtained using the Datastream bonds programs 145A and 145K. This gave the date of issue, the amount issued, the coupon, the issue price, the redemption date, the due dates for interest. Unfortunately the

Moody's and Standard and Poor's ratings were given only in a few cases. Details of each bond/debenture were checked to Extel cards to verify the Datastream data.

The initial statement was constructed, splitting out the interest attributable to the new debt issue and the tax associated with it. In the situation where the debt was issued part way through the accounting period, the amount of interest paid/payable for the period was determined by time apportionment of the annual interest and that was the amount entered in the statement. The tax rate was checked to Datastream for the individual companies.

The 'what if' equity scenario was then constructed. Any debt interest attributable to the new issue was deducted from the total interest charge, whilst any tax relief that would have been obtained against the new debt interest was added back. The overall effect on the total of earnings for ordinary shareholders is often a decline. If new debt were not issued then equity would be and the assumption is made that the new ordinary shares would be issued via a rights issue at a discount of 20% on their current market price (see earlier reference to Davidson

and Mallin 1992). The share price was obtained from Datastream. The total raised from the debt issue was divided by the discounted share price (80% of current market value) to arrive at the number of new shares that would have been issued if equity had been issued instead of debt. This was added to the original number of shares in issue to arrive at the total number of ordinary shares and then a weighted average number of shares was used to calculate a revised EPS figure (see below for details of calculation).

6-3-3 Data Relating to Debt Reconstructions for Companies Issuing Equity

Details of equity issues were obtained from Extel and Datastream. Companies in the reconstruction sample which had made rights issues were contacted and the majority provided a copy of the circular which would have been sent to shareholders. Details of the issue were noted in each case: the announcement date, the ex-rights date, the cum-rights price, the last date for full payment, and the amount raised by the issue and the number of shares issued. These important dates in typical rights issue timetables are shown in Table 6.5 which outlines the principal events for a number of rights issues (these are

TABLE 6.5 : RIGHTS ISSUES TIMETABLES

Company	Ann. date	Ex-rights date	Last date for pymt. in full	Ann.- Ex-rts. (A)	.Ex-rts.- Last pymt (B)	Ann.- Last pymt (C)
1 Anglia Sec. Homes	270490	240590	150690	27	22	49
2 Bimec	190791	160891	050991	28	20	48
3 Bowater	300590	040690	240690	5	20	25
4 Bowthorpe	200987	300987	221087	10	22	32
5 Casket	030590	220590	110690	19	20	39
6 Cater Allen	140690	180690	090790	4	21	25
7 Comm. Hosp.	200291	110391	020491	19	22	41
8 Cookson Group	210391	110491	110491	21	0	21
9 De La Rue *						
10 Domino Printing	250991	141091	041191	19	21	40
11 Eurotunnel	021190	121190	031290	10	21	31
12 Jeyes	011289	041289	221289	3	18	21
13 Lovell, Y.J.	250491	210591	100691	26	20	46
14 Midland Bank	070787	110887	030987	35	23	58
15 Mountleigh **	050791	300791	190891	25	20	45
16 Regalian	120691	010791	220791	19	21	40
17 Renold	250185	120285	060385	18	22	40
18 Richards	091288	090189	300189	31	21	52
19 Sketchley	180690	120790	030890	24	22	46
20 Tay Homes	080587	020687	240687	25	22	47
21 Tibbet & Britten	220389	230389	140489	1	22	23
22 Westbury	230591	110691	030791	19	22	41
Totals				388	422	810
Averages				18	20	38.5

Note: * = Unable to obtain copy of the rights issues document

** = Mountleigh is now in administrative receivership

(A) = Number of days from announcement date to ex-rights date

(B) = Number of days from ex-rights date to date for last payment

(C) = Number of days from announcement date to date for last
payment

the equity to debt sample for which the reconstructions are shown in Appendix 6.1).

The main dates of concern in the reconstructions are the date of announcement of the rights issue, the ex-rights date and the date for payment in full of the monies relating to the rights issue.

From the date of announcement, the effect on the share price of any particular issue can be seen; the ex-rights date is used to determine the last cum-rights price which is used in the SSAP3 adjustment, and the date for payment is taken as the date that the money is actually received by the firm, and so in equity to debt reconstructions, is taken as the date from which interest would be payable on the hypothetical debentures.

The amount of debt to be raised was taken to be the proceeds of the equity issue. The date of announcement of the equity issue was taken as the reference point for the redemption yield on the relevant benchmark gilt, which was obtained from Datastream, using program 301V. Statements were then constructed for each of three coupons - being 1%, 2% and 3% on the redemption yield on the benchmark gilt. Additional interest was

accounted for in each case, with interest being deemed payable from the 'last date for full payment' of the rights issue which the debt was serving to reconstruct. This date was chosen on the basis that interest would usually accrue from when the money is received. The total interest charge would increase with the additional interest, whilst the associated tax relief would reduce the total tax charge. A revised total earnings for ordinary shareholders was arrived at, and this was divided by the revised weighted average number of ordinary shares (i.e. the weighted average number of ordinary shares at the year end less the increase in the number of those shares attributable to the latest issue of equity now being reconstructed with debt) to find the revised EPS. This was rather a messy calculation and the mechanics are discussed below.

There were often increases in the ordinary share capital of the company, in addition to the rights issue. Relatively small changes, for example due to options being taken up, were included in the debt reconstruction as though they had been in issue for the whole year. Any capitalisation, or bonus issues, ranking for dividend were, as per SSAP3, included as though they had been in issue for the whole year. For any other issues, the

date of issue was ascertained and a similar exercise to that described in 6-3-2 above was carried out, with appropriate time apportionment in order to arrive at a final figure for the weighted average number of shares.

Share prices were scrutinised during the whole of this period for each company to ensure that there were no unusual movements.

Any ACT associated with the equity issue and any change in this that might have arisen as a result of substituting the equity with debt was treated as a timing difference which would have had no effect on the reconstructions. Similarly, any additional tax relief arising from the issue of debt was assumed to be capable of offset, either in the current year or via carry-back or carry forward.

6-4 Reconstruction Layout

The companies for which reconstructions were carried out are shown in Table 6.6. The detailed reconstructions of the capital issues are in Appendix 6.1.

In all of the reconstructions, the first set of

TABLE 6.6 : SUMMARY OF CAPITAL ISSUES FOR WHICH RECONSTRUCTIONS PERFORMED

Company	Mth	Yr0	Yr+1	Type of issue	Amount £000
1 Anglia Secure Homes	Sep	90	91	Rights	8400
2 Bimec	Mar	92	93	Rights	11360
3 Bowater	Dec	90	91	Rights	143370
4 Bowthorpe	Dec	87	88	Rights	44480
5 Casket	Mar	91	92	Rights	5660
6 Cater Allen	Apr	91	92	Rights	14430
7 Community Hospital Grp	Jun	91	92	Rights	10970
8 Cookson Grp	Dec	91	92	Rights	83000
9 De La Rue	Mar	92	93	Rights	160300
10 Domino Printing	Oct	91	92	Rights	15800
11 Eurotunnel	Dec	90	91	Rights	568000
12 Jeyes	Dec	89	90	Rights	7450
13 Kwik Fit	Feb	89	90	Rights	34400
14 Lovell, Y.J.	Sep	91	92	Rights	30900
15 Midland Bank	Dec	87	88	Rights	698800
16 Regalian	Mar	92	93	Rights	20786
17 Renold	Mar	85	86	Rights	9370
18 Richards	Sep	89	90	Rights	3678
19 Sketchley	Mar	91	92	Rights	21700
20 Tay Homes	Jun	87	88	Rights	6100
21 Tibbet & Britten	Dec	89	90	Rights	16400
22 Westbury	Feb	92	93	Rights	21590
23 Allied Lyons	Feb	89	90	Debt	350000
24 Asda	Apr	87	88	Debt	100000
25 Asda	Apr	89	90	Debt	125000
26 Bass	Sep	89	90	Debt	250000
27 Blue Circle	Dec	88	89	Debt	150000
28 British Land	Mar	87	88	Debt	12560
29 British Land	Mar	92	93	Debt	150000
30 British Steel	Mar	92	93	Debt	150000
31 City Site Estates	Sep	87	88	Debt	25000
32 Dares Estates	Dec	87	88	Debt	35000
33 Forte	Jan	90	91	Debt	100000
34 Land Securities	Mar	87	88	Debt	200000
35 Lasmo	Dec	86	87	Debt	50000
36 Lasmo	Dec	89	90	Debt	150000
37 MEPC	Sep	86	87	Debt	75000
38 Taylor Woodrow	Dec	89	90	Debt	80000
39 Vaux	Sep	89	90	Debt	60000
40 Whitbread	Feb	91	92	Debt	135000
41 Helical Bar	Jan	88	89	CCRPrefs	19600
42 Next	Jan	88	89	Cnv.Bonds	100000
43 Worcester Grp	Dec	90	91	Cu.RPrefs	5049

Note: Yr0 = Year of capital issue for which reconstruction carried out

Yr+1 = Year following year of capital issue

CCRPrefs = Cumulative convertible redeemable preference shares

Cu.RPrefs = Cumulative redeemable preference shares

Cnv.Bonds = Convertible bonds

figures on the left represent the original issue, subsequent columns to the right represent the 'what if' substitutions.

In the equity to debt reconstructions, there are 4 sets of data for each of two years, i.e. 8 sets in total. These are the original issue, plus debt reconstructions on benchmark +1%, benchmark +2% and benchmark +3%, for each of the two years (one year's data only was available in some cases where the issue was quite recent).

In the debt to equity reconstructions, there are 2 sets of data for each of two years, i.e. 4 sets in total. The original debt issues have been reconstructed on the basis of a rights issue of ordinary shares.

The statements have been reconstructed for two years, i.e. the year of the capital issue and the following year. In many ways, the year following the year of issue gives a more complete picture of the effect of a particular issue as issues are frequently made part-way through the year.

The operating profit figure given by Datastream is essentially trading profit less government grants. The operating profit was therefore used

as a starting point and the interest deducted to arrive at a net profit after interest figure, but it was then decided that the reconstruction should carry on with the published pre-tax profit figure, so that after deduction of tax, preference dividend and minority interest, the earnings for ordinary shareholders figure could be compared directly with the published accounts figure. It should be borne in mind that in any subsequent reconstruction there is a 'knock on' effect on the net profit after interest, taxation charge, earnings after tax and earnings for ordinary shareholders (caused by changes to the interest figure as a result of the reconstruction).

Details of each issue are then shown clearly and any explanation about adjustments made are noted on the reconstruction.

A note is also made of any irrecoverable ACT or any interest which has been capitalised.

6-5 Analysis of the Reconstructions

The original and reconstruction issues were compared to analyse the effect of different types of capital issue on certain key accounting

ratios. These included earnings per share (EPS), capital gearing, income gearing, and dividend cover.

Implicit in the analysis of the reconstructions is the assumption that the finance raised will earn the same rate of return, no matter what the type of finance is. This assumption is not a trivial one in the context of a body of literature emanating from the 1970s. For example, Baumol, Heim, Malkiel and Quandt (1970) suggested that different forms of finance give different rates of return, in particular new equity capital generates a significantly higher return than either new debt or retained earnings, and that the return on retained earnings (or 'ploughback', as they called it following an earlier paper by Little) was particularly low. They point to these findings being consistent with the transactions costs involved with the different types of issue, new equity incurring the highest transactions costs. They were partly motivated by Little (1962) in his notable "Higgledy Piggledy Growth" and his conclusion that the extent of retained earnings seemed to have no effect on subsequent earnings growth. Baumol et al conclude against the conventional MM idea that the type of finance is irrelevant to

real operating returns, but there are considerable problems with the study and their results cannot be viewed as persuasive.

6-5-1 Effect of the Reconstructions on EPS

The effect of the reconstructions on the EPS of the companies is summarised in Table 6.7 (reconstructing from equity to debt), Table 6.8 (reconstructing from debt to equity), Table 6.9 (comparison of the results shown in Tables 6.7 and 6.8), and Table 6.10 (reconstructing from convertible preference shares and loans to equity).

In each of the above tables the first of the two years cited for each company is the year of issue of the particular capital issue being examined, whilst the second is the year following the year of issue. When only one year is given, then that is the year of issue and the following year's data was not available at the time of this study. As mentioned earlier the reconstructions have been carried out for two years where the data were available: the year of issue, and then the year following which provides an idea of the 'steady state'.

The EPS on the original issue is shown and then the revised EPS on the reconstruction. The monetary amount and the percentage change on the original EPS are highlighted.

6-5-2 Effect on EPS of Reconstructing Equity

Issues with Debt

Table 6.7 shows the effect of issuing debt for those companies which originally issued equity. The effect of the reconstruction is shown at the benchmark +1%, +2%, and +3%. Whether EPS increases or decreases in a particular reconstruction is generally not dependent on the increment chosen (1%, 2%, 3%) above the relevant benchmark gilt rate. However, on the reconstructions there is often an improvement in EPS for the year of issue, and then a deterioration in the year following issue, or vice versa.

From Table 6.7, it can be seen that on 4 reconstructions the EPS would decrease for both years; on 4 reconstructions, where data are available for only one year, the EPS would again decrease; on 6 reconstructions, the EPS would increase for both years; on 3 reconstructions, where data are available for only one year, the

TABLE 6.7 : COMPANIES WHICH ORIGINALLY ISSUED EQUITY - "WHAT IF" SCENARIO - DEBT INSTEAD OF EQUITY - EFFECT ON EPS

Company	Yr	EPS on original issue (p)	At benchmark + 1%			At benchmark + 2%			At benchmark + 3%		
			EPS Revised (p)	Change in EPS		EPS Revised (p)	Change in EPS		EPS Revised (p)	Change in EPS	
				Amt (p)	%		Amt (p)	%		Amt (p)	%
Anglia Secure Homes	1990 1991	(35.61) (49.30)	(42.58) (83.66)	(6.97) (34.36)	(19.57) (69.70)	(42.65) (83.92)	(7.04) (34.62)	(19.77) (70.22)	(42.71) (84.19)	(7.1) (34.89)	(19.94) (70.77)
Bimec	1992	5.06	5.64	0.58	11.46	5.60	0.54	10.67	5.55	0.49	9.68
Bowater	1990 1991	51.46 47.59	55.68 51.25	4.22 3.66	8.2 7.70	55.28 50.45	3.82 2.86	7.42 6.01	54.89 49.65	3.43 2.06	6.67 4.33
Bowthorpe	1987 1988	13.16 15.33	13.47 15.44	0.31 0.11	2.36 0.72	13.44 15.23	0.28 (0.1)	2.13 (0.65)	13.40 15.01	0.24 (0.32)	1.82 (2.09)
Casket	1991 1992	0.35 1.85	(0.32) 2.40	(0.67) 0.55	(1.91) 2.97	(0.39) 2.30	(0.74) 0.45	(2.11) 2.43	(0.47) 2.21	(0.82) 0.36	(2.34) 1.95
Cater Allen	1991 1992	7.96 7.61	5.40 3.46	(2.56) (4.15)	(32.16) (54.53)	5.03 2.97	(2.93) (4.64)	(36.81) (60.97)	4.66 2.47	(3.3) (5.14)	(41.46) (67.54)
Community Hospital Group	1991	15.56	16.90	1.34	8.61	16.85	1.29	8.29	16.80	1.24	7.97
Cookson Group	1991	1.83	1.03	(0.8)	(43.72)	0.93	(0.9)	(49.18)	0.83	(1.00)	(54.64)
De La Rue	1992	30.63	32.55	1.92	6.23	32.23	1.6	5.22	31.91	1.28	4.18
Domino Printing (1)	1991	28.84	28.84	-	-	28.84	-	-	28.84	-	-
Eurotunnel	1990 1991	0.05 0.00	(0.99) (0.89)	(1.04) (0.89)	(20.8) (89.00)	(1.08) (0.97)	(1.13) (0.97)	(22.60) (97.00)	(1.17) (1.04)	(1.22) (1.04)	(24.40) (104.00)
Jeyes (1)	1989 1990	16.16 16.30	17.23 16.27	1.07 (0.03)	6.62 (1.84)	17.23 15.82	1.07 (0.48)	6.62 (2.94)	17.23 15.37	1.07 (0.93)	6.62 (5.71)
Kwik Fit	1989 1990	7.64 5.98	8.10 5.97	0.46 (0.01)	6.02 (0.17)	7.96 5.79	0.32 (0.19)	4.19 (3.18)	7.83 5.61	0.19 (0.37)	2.49 (6.19)
Y J Lovell	1991	(22.65)	(36.22)	(13.57)	(59.91)	(36.31)	(13.66)	(60.31)	(36.39)	(13.74)	(60.66)
Midland Bank	1987 1988	(1.25) 0.75	(1.97) 1.16	(0.72) 0.41	(57.60) 54.67	(1.98) 1.15	(0.73) 0.40	(58.40) 53.33	(1.99) 1.13	(0.74) 0.38	(59.20) 50.67
Regalion	1992	(19.74)	(25.68)	(5.94)	(30.09)	(25.79)	(6.05)	(30.65)	(25.89)	(6.15)	(31.16)

TABLE 6.7 : COMPANIES WHICH ORIGINALLY ISSUED EQUITY - "WHAT IF" SCENARIO - DEBT INSTEAD OF EQUITY - EFFECT ON EPS

Company	Yr	EPS on original issue (p)	At benchmark + 1%				At benchmark + 2%				At benchmark + 3%			
			EPS Revised(p)	Change in EPS		EPS Revised (p)	Change in EPS		EPS Revised (p)	Change in EPS		EPS Revised (p)	Change in EPS	
				Amt (p)	%		Amt (p)	%		Amt (p)	%		Amt (p)	%
Renold (1)	1985	6.67	7.68	1.01	15.14	7.68	1.01	15.14	7.68	1.01	15.14	7.68	1.01	15.14
	1986	7.90	10.91	3.01	38.10	10.77	2.87	36.33	10.63	2.73	34.56	10.63	2.73	34.56
Richards	1989	8.96	11.39	2.43	27.12	11.29	2.33	26.00	11.19	2.23	24.89	11.19	2.23	24.89
	1990	9.18	9.49	0.31	3.38	9.37	0.19	2.07	9.25	0.07	0.76	9.25	0.07	0.76
Sketchley	1991	(6.92)	(13.24)	(6.32)	(91.33)	(13.50)	(6.58)	(95.09)	(13.77)	(6.85)	(98.99)	(13.77)	(6.85)	(98.99)
	1992	7.76	7.63	(0.13)	(1.68)	7.22	(0.54)	(6.96)	6.82	(0.94)	(12.11)	6.82	(0.94)	(12.11)
Tay Homes (1)	1987	34.85	36.47	1.62	4.65	36.47	1.62	4.65	36.47	1.62	4.65	36.47	1.62	4.65
	1988	47.21	55.75	8.54	18.09	55.00	7.79	16.50	54.26	7.05	14.93	54.26	7.05	14.93
Tlbbet & Britten	1989	18.74	19.33	0.59	3.15	19.06	0.32	1.71	18.79	0.05	0.27	18.79	0.05	0.27
	1990	22.48	23.96	1.48	6.58	23.57	1.09	4.85	23.17	0.69	3.07	23.17	0.69	3.07
Westbury	1992	(17.36)	(23.57)	(6.21)	(35.77)	(23.77)	(6.41)	(36.92)	(23.96)	(6.60)	(38.02)	(23.96)	(6.60)	(38.02)

(1) No interest on reconstruction debt included as issue very close to year end

EPS would again increase; on 4 reconstructions, the EPS increases on one year and decreases on one year (for the same company); finally, for one company, Domino Printing, data were only available for the year of issue, and the issue was so close to the year end, that no interest was provided for in the debt reconstruction.

It would appear in the foregoing analysis that the effect on EPS was not the key influence for the choice of equity. As mentioned earlier, many companies have been forced into issuing more equity, generally by means of a rights issue, in order to reconstruct their balance sheets and avoid high interest charges.

These results are summarised in Table 6.9 and discussed further below.

6-5-3 Effect on EPS of Reconstructing Debt Issues with Equity

Table 6.8 shows the effect of issuing equity for those companies which originally issued debt. For both the year of the issue and the year following, 11 of the companies would have experienced a decrease in EPS if they had issued equity; 1 company would have experienced a

TABLE 6.8: COMPANIES WHICH ORIGINALLY ISSUED DEBT - "WHAT IF" SCENARIO - EQUITY INSTEAD OF DEBT - EFFECT ON EPS

Company	Yr	EPS on original issue (p)	EPS Revised (p)	Change in EPS	
				Amount (p)	%
Allied Lyons	1989	43.69	42.47	(1.22)	(2.79)
	1990	47.72	44.67	(3.05)	(6.39)
Asda	1987	11.38	11.08	(0.30)	(2.64)
	1988	12.64	11.47	(1.17)	(9.26)
Asda	1989	14.48	14.21	(0.27)	0.86
	1990	10.48	10.29	(0.19)	(1.81)
Bass	1989	108.08	104.37	(3.71)	(3.43)
	1990	109.60	104.25	(5.35)	(4.88)
Blue Circle	1988	56.96	55.16	(1.8)	(3.16)
	1989	29.52	29.23	(0.29)	(0.98)
British Land	1987	15.70	15.41	(0.29)	(1.85)
	1988	17.83	17.50	(0.33)	(1.85)
British Land	1992	11.46	12.99	1.53	13.35
British Steel	1992	(1.70)	(2.71)	(1.01)	(59.41)
City Site Estates	1987	6.00	6.55	0.55	9.17
	1988	15.33	11.45	(3.88)	(25.31)
Dares Estates	1987	2.12	2.22	0.10	4.72
	1988	4.15	3.74	(0.41)	(9.88)
Forte	1990	22.98	22.81	(0.17)	(0.74)
	1991	18.85	18.69	(0.16)	(0.85)
Land Securities	1987	17.78	17.52	(0.26)	(1.46)
	1988	19.07	18.72	(0.35)	(1.84)
Lasmo	1986	9.63	9.05	(0.58)	(6.02)
	1987	12.40	11.33	(1.07)	(8.63)
Lasmo	1989	23.65	23.71	0.06	0.25
	1990	21.14	21.52	0.38	1.80
MEPC	1986	16.35	16.25	(0.10)	(0.61)
	1987	19.20	19.12	(0.08)	(0.42)
Taylor Woodrow	1989	23.72	23.78	0.06	0.25
	1990	16.82	17.01	0.19	1.13
Vaux	1989	18.61	17.72	(0.89)	(4.78)
	1990	20.30	19.57	(0.73)	(3.60)
Whitbread	1991	47.29	47.17	(0.12)	(0.25)
	1992	35.78	37.13	1.35	3.77

decrease in EPS for the one year's data available; 3 companies would have had an increase in EPS one year and a decrease the next; 2 companies would have experienced an increase in EPS for both years; whilst 1 company would have experienced an increase in EPS for the one year's data available.

There is much more support here for the proposition that debt rather than equity may be issued if it will result in a higher EPS figure.

The results are summarised and compared with those of the equity to debt reconstructions in Table 6.9.

6-5-4 Comparison of Effect on EPS of Reconstructions for Debt and Equity Issues

Table 6.9 is organised into two sections: Yr 0 (the year of the capital issue) and Yr 1 (the year following the capital issue). For each year, there is a comparison made between the actual issue (i.e. equity or debt) and the hypothetical reconstruction in each case (i.e. debt or equity) in terms of which issue (actual or hypothetical) produces the higher EPS. The figures in parentheses show the number of each

TABLE 6.9 : SUMMARY OF NUMBER OF FIRMS IN EACH CATEGORY

Yr 0 -----	Actual Issue -----	
	Equity	Debt
Higher EPS equity	11 (9) actual	5 (2) hypothetical
Higher EPS debt	11 (7) hypothetical	13 (2) actual
Yr 1 -----	Actual Issue -----	
	Equity	Debt
Higher EPS equity	7 (4) actual	3 (0%) hypothetical
Higher EPS debt	7 (4) hypothetical	13 (5) actual

Note: Yr 0 = year of issue
Yr 1 = year following year of issue

Figure in () indicates the number representing a change of 5% or more.

issue type representing a change of 5% or more.

The effect of the reconstruction of debt for equity on EPS has been included in Table 6.9 at the benchmark +2% figure as most companies seem to issue debt at a coupon that is approximately equivalent to this (see Table 6.3 discussed earlier).

For the year of the capital issue, it can be seen that there were 11 actual equity issues which resulted in a higher EPS than their corresponding reconstructions for debt, and similarly 11 reconstruction debt issues which gave a higher EPS than the actual equity issues. Also, 9 of the 11 actual equity issues resulted in an EPS which was higher by 5% or more than would have been the case on the reconstruction debt issue; whilst 7 out of 11 reconstruction debt issues resulted in an EPS which was higher by 5% or more than would have been the case on the actual issue of equity.

There is a similar pattern for this group in Yr 1 (the 'steady state'), with 7 actual equity issues giving a higher EPS when compared to the hypothetical debt reconstructions, and 7 hypothetical debt reconstructions giving a higher

EPS when compared to the actual equity issues.

Similarly, for the year of the capital issue, it can be seen that there were 13 actual debt issues which resulted in a higher EPS than their corresponding reconstructions for equity, and similarly 5 reconstruction equity issues which gave a higher EPS than the actual debt issues. Also, 2 of the 13 actual debt issues resulted in an EPS which was higher by 5% or more than would have been the case on the reconstruction equity issue; whilst 2 out of 5 reconstruction equity issues resulted in an EPS which was higher by 5% or more than would have been the case on the actual issue of debt.

There is a similar pattern for this group in Yr 1 (the 'steady state'), with 13 actual debt issues giving a higher EPS when compared to the hypothetical equity reconstructions (5 of which result in the EPS being higher by 5% or more than on the equity reconstructions). There are 3 hypothetical debt reconstructions giving a higher EPS when compared to the actual equity issues (although the increase in each case would be relatively small, with none being higher than 5%).

From Table 6.9 it would appear that debt issues tend to be chosen if they result in a higher EPS than an equity issue would have done. The results are less conclusive for equity issues.

6-5-5 Effect on EPS of Reconstructing Convertible Issues with Equity

Finally, Table 6.10 summarised the convertible issues, two for convertible preference shares, one for a convertible bond. The reconstruction examined the position if the convertibles were converted immediately into the relevant number of ordinary shares. It can be seen that for two companies, both of which issued convertible preference shares, there would have been a decrease in the EPS for both years. This would amount to a sizeable percentage drop in the case of the Worcester Group (20.13% in the year of issue, 57.97% in the year following). In relation to the convertible bond, an issue of equity would have resulted in a slight increase in EPS. Whilst there are only the three convertible issues (based on responses received to the questionnaire, for which all accounting data was available), it is widely accepted that convertible capital issues may be used to keep the gearing ratio within a reasonable limit,

TABLE 6.10: COMPANIES WHICH ORIGINALLY ISSUED CONVERTIBLE/REDEEMABLE PREFERENCE SHARES - "WHAT IF" SCENARIO - EQUITY (ORDINARY SHARES) INSTEAD OF CONVERTIBLE ISSUES - EFFECT ON EPS

Company	Yr	EPS on Original Issue (p)	EPS Revised (p)	Change in EPS	
				Amount (p)	%
Helical Bar	1988	21.92	21.56	(0.36)	(1.64)
	1989	35.50	32.20	(3.30)	(9.30)
Next	1988	19.33	19.71	0.38	1.97
	1989	10.86	11.19	0.33	3.04
Worcester Group	1990	9.59	7.66	(1.93)	(20.13)
	1991	10.42	4.38	(6.04)	(57.97)

whilst not impacting adversely on EPS. The implications of the reconstructions support this.

The overall conclusion from the reconstructions is that there is more support for debt and convertible issues being made with the view of increasing or maintaining EPS, than there is for equity issues. Equity issues are, it would seem, often made out of necessity to reduce the debt burden.

6-6 Error Bounds on EPS

In performing the reconstructions, there were certain areas/adjustments (discussed individually above) which required subjective judgement.

It is useful to put some sort of error bounds around the EPS figures arising as a result of the reconstructions. The purpose of all the adjustments is to arrive at a reconstructed EPS figure accurate to within 1 or 2%.

The individual error sources are identified below with respect to each type of reconstruction (debt reconstruction for original equity issue, and vice versa) and estimates made of the possible error associated with each. The individual

errors are then aggregated to give an overall error distribution.

(a) Debt Reconstruction for Equity

The following comments can be made:

(i) the dilution adjustments are as per SSAP3, (therefore no error arises from those)

(ii) the coupon on reconstruction debt has been calculated by looking at the relevant benchmark gilt plus 1%, 2%, and 3%. As mentioned earlier, most companies do appear to set a coupon on debt of approximately the benchmark gilt +2%, the EPS at the 2% figure has therefore been included in the summary Table 6.9 discussed above.

In order to investigate the effect on variation in the coupon rate of the gilt, the EPS figures were computed for a coupon of benchmark +1%, and +3% (i.e. either side of the modal coupon rate of benchmark +2%) as well as at coupon +2% (see Table 6.6). The possible error is calculated as follows:

(a) calculate for each company:

$$\frac{(\text{EPS at 1\%} - \text{EPS at 3\%})}{\text{EPS at 2\%}} \times 100$$

EPS at 2%

(b) Sum the individual company figures calculated in (i), and then average them by dividing by the total number of companies.

The results are shown in Table 6.11. For the year of issue, this led to an average variation in EPS of -0.59%, therefore there may be approximately a maximum $\pm 0.6\%$ error in EPS (i.e. effectively $\pm 0.3\%$). Whilst for the year following the year of issue, this range increased to 4.89% (i.e. effectively $\pm 2.5\%$). The higher variation in the latter case is as expected since a full year's interest is deducted in the year following the debt issue.

An interesting point to note in relation to the EPS percentage changes discussed above is the range of those changes. In the year of issue, whilst the majority are in the 0%-3% range, one is -38.46%, one is -16.67%, and a third at 21.51%. Similarly, in the year following the year of issue, the majority are again in the 0%-3% range, but one is 33.33%, another 11.21%, and a third -15.46%. These distort the overall average, making it lower than might have been expected in the year of issue and higher than would have been expected in the year following.

TABLE 6.11 : ERROR BOUNDS - VARIATION IN EPS

EARNINGS PER SHARE - YEAR OF CAPITAL ISSUE						
	Actual	Benchmark	Benchmark	Benchmark	Indiv.	Aggreg.
	%	+ 1%	+ 2%	+ 3%	%	%
Anglia Sec.	-35.61	-42.58	-42.65	-42.71	-0.3048	
Bimec	5.06	5.64	5.6	5.55	1.6071	
Bowater	51.46	55.68	55.28	54.89	1.4291	
Bowthorpe	13.16	13.47	13.44	13.4	0.5208	
Casket	0.35	-0.32	-0.39	-0.47	-38.4615	
Cater Allen	7.96	5.4	5.03	4.66	14.7117	
Comm. Hosp.	15.56	16.9	16.85	16.8	0.5935	
Cookson Grp	1.83	1.03	0.93	0.83	21.5054	
De La Rue	30.63	32.55	32.23	31.91	1.9857	
Domino Printing	28.84	28.84	28.84	28.84	0.0000	
Eurotunnel	0.05	-0.99	-1.08	-1.17	-16.6667	
Jeyes	16.16	17.23	17.23	17.23	0.0000	
Kwik Fit	7.64	8.1	7.96	7.83	3.3920	
Lovell	-22.65	-36.22	-36.31	-36.39	-0.4682	
Midland Bank	-1.25	-1.97	-1.98	-1.99	-1.0101	
Regalian	-19.74	-25.68	-25.79	-25.89	-0.8143	
Renold	6.67	7.68	7.68	7.68	0.0000	
Richards	8.96	11.39	11.29	11.19	1.7715	
Sketchley	-6.92	-13.24	-13.5	-13.77	-3.9259	
Tay Homes	34.85	36.47	36.47	36.47	0.0000	
Tibbet & Brit.	18.74	19.33	19.06	18.79	2.8332	
Westbury	-17.36	-23.57	-23.77	-23.96	-1.6407	
					-0.5883	1.1910

EARNINGS PER SHARE - YEAR FOLLOWING YEAR OF CAPITAL ISSUE						
	Actual	Benchmark	Benchmark	Benchmark	Indiv.	Aggreg.
	%	+ 1%	+ 2%	+ 3%	%	%
Anglia Sec.	-49.3	-83.66	-83.92	-84.19	-0.6316	
Bowater	47.59	51.25	50.45	49.65	3.1715	
Bowthorpe	15.33	15.44	15.23	15.01	2.8234	
Casket	1.85	2.4	2.3	2.21	8.2609	
Cater Allen	7.61	3.46	2.97	2.47	33.3333	
Eurotunnel	0	-0.89	-0.97	-1.04	-15.4639	
Jeyes	16.3	16.27	15.82	15.37	5.6890	
Kwik Fit	5.98	5.97	5.79	5.61	6.2176	
Midland Bank	0.75	1.16	1.15	1.13	2.6087	
Renold	7.9	10.91	10.77	10.63	2.5998	
Richards	9.18	9.49	9.37	9.25	2.5614	
Sketchley	7.76	7.63	7.22	6.82	11.2188	
Tay Homes	47.21	55.75	55	54.26	2.7091	
Tibbet & Brit.	22.48	23.96	23.57	23.17	3.3517	

4.8893 1.9739

A comparison can be drawn here with the properties of DFL which also has an unusual distribution.

Calculating the variations in EPS on an aggregate basis rather than an individual basis as just discussed may provide a more robust estimate. The aggregate figures were calculated as follows:

$$(a) \frac{(\text{EPS at 1\%} - \text{EPS at 3\%})}{\text{Total EPS}} \times 100$$

Total EPS

From Table 6.11, it can be seen that using the aggregate basis the average variation in EPS for the year of issue is 1.19%, whilst for the year following, it is 1.97%. These figures would imply approximately a maximum +/-1.2% error in EPS (i.e. effectively +/- 0.6%) in the year of issue, and approximately a maximum +/- 2% error in EPS (i.e. effectively +/- 1% error in EPS) in the year following.

(iii) as far as the tax treatment was concerned, checks (as outlined earlier) were made to ensure that companies did not have irrecoverable ACT, and were not tax-exhausted. However, due to the limited tax information that is publically available, the error may be 0% or alternatively,

it may be substantial. Given that checks were carried out as far as available information allowed, a nil error has been assumed.

(iv) changes in issue costs. The issue cost may vary depending on the size and type of the issue. It has been assumed however that these changes would not be significant, and that most issue costs could be written off against a share premium account balance. Therefore no error arises from changes in issue costs.

Therefore one would expect there to be a maximum 2% overall error in EPS, i.e. $\pm 1\%$, on the debt for equity reconstructions.

(b) Equity Reconstruction for Debt

In relation to the equity reconstructions for an original issue of debt, the following comments are made:

(i) the main uncertainty in reconstructing debt with equity was the discount on a rights issue, which would affect the number of shares issued. The discount taken was 20%, based on Davidson and Mallin (1992). They also looked at the the size of the rights issue in terms of the equity market

capitalisation of the company, and found this to be approximately 20%. The maximum error that there is likely to be on the discount is +/- 5% (i.e. a range of 10%); and therefore a 2% error in the number of shares (20% x 10%). A 2% error in the denominator would result in approximately a 2% error in the EPS calculation. This can be shown algebraically as follows:

$$\text{Error} = \frac{E}{n} - \frac{E}{1.02n}$$

where E = earnings available for ordinary shareholders

n = estimation of number of shares

$$= \frac{1.02E - E}{1.02n}$$

$$= \frac{E (1 - 0.98039)}{n}$$

$$= 0.0196 \frac{E}{n}$$

i.e. approximately 0.02 $\frac{E}{n}$

being a possible 2% error in the EPS calculation

(ii) again, as far as the tax treatment was concerned, checks (as outlined earlier) were made to ensure that companies did not have irrecoverable ACT, and were not tax-exhausted. Given that checks were carried out as far as available information allowed, a nil error has been assumed.

(iii) changes in issue costs. As discussed above, it has been assumed however that these changes would not be significant, and that most issue costs could be written off against a share premium account balance. Therefore no error arises from changes in issue costs.

(iv) the dilution adjustments are as per SSAP3, (therefore no error arises from those)

(v) the occurrence of interest capitalised was found to affect several of the companies which originally made debt issues. As mentioned earlier, no attempt was made to add it back into the profit for the equity reconstruction of debt as this would have distorted the profit figure. No error allowance has therefore been made for this as the profit figure being used for the equity reconstructions is the profit figure actually available under the original debt

issues. This does though highlight the fact that capitalising interest is a means of effectively achieving a higher EPS as interest does not pass through the profit and loss account, and the number of ordinary shares in issue is not increased either.

Therefore, taking into account factors (i) to (v) above, one would expect the reconstituted EPS in the equity reconstructions for debt to have a maximum 2% overall error, i.e. $\pm 1\%$.

6-7 Conclusions

In this Chapter, the income statement of a sample of companies has been reconstructed with an alternative type of capital issue to identify what the effect on EPS would have been. The results are particularly striking for debt, whereby nearly all of the companies which originally issued debt would have seen a deterioration in their EPS if they had issued equity instead.

In the next Chapter, a comparison is made of the effect on capital and income gearing ratios, and dividend cover, of both the original and the alternative issues. The rates of return are also

examined for the different types of issue.

Also in the next Chapter, the formulae derived in Chapter 5 are used to classify the types of issue, based on which would be preferred on the basis of EBIT-EPS analysis. A comparison is made with the original and reconstructed income statements based on which type of issue gives the higher EPS.

Finally, in Chapter 8 a probit model is formulated with the debt-equity choice as the dichotomous dependent variable, and various factors which might affect the debt-equity choice are included as independent variables.

CHAPTER 7 : FURTHER ANALYSIS OF THE DEBT-EQUITY CHOICE

7-1 Introduction

In the previous Chapter analysis centered on the impact of different finance issues on EPS. In this Chapter, the objective is to investigate the extent to which the debt-equity choice can be better modelled by the inclusion of additional explanatory variables - particularly gearing measures which relate to the preissue financial state of the company.

In addition to measures of capital and income gearing examined in this context, other financial variables which may impact on the debt-equity choice are also investigated. These include dividend cover, rate of return, tax flow ratio and cash flow ratio.

In order to tackle this, the apparent influence of different measures are investigated initially on a 'univariate' basis. Whilst in the following Chapter, a multivariate approach is adopted using a limited dependent variable method - in particular probit analysis which is well suited to this application.

7-2 Impact on Capital Gearing Ratios

7-2-1 Perceived Influence of Capital Gearing Ratios

The level of gearing is often cited as one important influence on the debt/equity choice, for example, Marsh (1980) concludes this; and Bosworth (1971) and Taggart (1974) offer evidence that companies in aggregate seem to attempt to keep to a target debt-equity ratio. However, Stonehill et al (1973), in a study encompassing France, Holland, Japan, Norway and the U.S.A., found that executives viewed themselves as taking advantage of suitable financing opportunities as and when they arose, rather than aiming for a specific debt ratio.

However it is argued that capital gearing is important as an explanator of the debt-equity choice as the issue of debt or equity allows a company to incrementally change its gearing. Such changes in gearing could be indicative of:

- (i) target debt-equity ratio - the firm is moving towards some target debt-equity ratio
- (ii) debt capacity - firms have a certain amount of debt capacity, and if they are not utilising

it, then they ought to be in order to obtain the tax relief

(iii) mean reversion - a firm may be at the extreme end of the distribution of capital gearing ratios, and is now moving towards the centre. There is a greater probability that a firm with a capital gearing ratio at the end of the distribution will raise finance which will result in the capital gearing going down rather than up.

The actual definition to be used to calculate capital gearing is discussed below.

7-2-2 An Analysis of Capital Gearing Ratios

It was decided to examine the capital gearing of the companies, based on the original issue, the reconstruction (or hypothetical issue), and the industry sector capital gearing ratio.

A summary balance sheet is outlined to help to highlight the items which may be included in a capital gearing ratio:

X Co. Balance Sheet as at 31 Dec 19-0

	£000	£000
<u>Fixed assets</u>		
(1) Intangibles		200
(2) Tangibles		<u>1500</u>
		1700
(3) <u>Current assets</u>	600	
<u>Current liabilities</u>		
(4) Creditors	(200)	
(5) Short-term debt	<u>(300)</u>	
Net current assets		<u>100</u>
(6) Total assets less curr.liab.		<u>1800</u>
(7) less Long-term debt		<u>500</u>
(8) Total net assets		<u>1300</u>
 <u>Capital and Reserves</u>		
(9) Ordinary shares		1000
(10) Reserves		100
(11) Preference shares		<u>200</u>
(12) Total equity		<u>1300</u>

There are several definitions for the capital gearing ratio. Datastream, for example, produces a capital gearing ratio which is calculated as:

Preference share capital + subordinated debt
+ total loan capital + borrowings repayable
within one year

total capital employed + borrowings
repayable within 1 year - total intangibles

Referring to the items on the annotated proforma
balance sheet on the previous page, this can be
expressed as:

$$\frac{(11) + (7) + (5)}{(6) + (5) - (1)}$$

then subtracting intangibles and short-term debt
from the denominator:

$$= \frac{(11) + (7) + (5)}{(1) + (2) + (3) - (4) - (5)}$$

$$= \frac{(11) + (7) + (5)}{(2) + (3) - (4)}$$

$$= \frac{(11) + (7) + (5)}{[(9) + (10) + (11) - (1)] + [(5) + (7)]}$$

This definition was not considered to be the most
suitable to use as (i) preference share capital
is more often treated as equity than debt (ii)
intangibles are assets of the business and should
not be excluded.

In terms of the proforma balance sheet the more usual gearing ratio is:

$$\frac{(7) + (5)}{[(9) + (10) + (11)] + [(5) + (7)]}$$

The gearing ratio which appeared, on a priori grounds, to capture the main influence on debt-equity choice was considered to be a ratio which combined the denominator of the Datastream ratio, except that the intangible assets should not be excluded, with the numerator of the more usual ratio as follows:

$$\frac{(7) + (5)}{(9) + (10) + (11) + (7) + (5)}$$

Undoubtedly cases could be made for other capital gearing ratios depending on one's view of the determinants of the capital issue choice. It should also be noted that capital-based ratios under the historical cost convention are inherently flawed because the balances shown are recorded at their original input prices and are not adjusted to current values.

The individual data items were therefore extracted from Datastream for individual

companies (using programs 190V and 190Y) and for industry sectors (for detail of programs used see below) to enable the capital gearing ratio to be calculated as follows:

$$\frac{\text{Long-term debt} + \text{short-term debt}}{\text{Equity} + \text{debt}} \times 100$$

where equity comprises ordinary shares, preference shares and reserves; and debt comprises long-term debt and short-term debt.

7-2-3 Capital Gearing Ratios for Actual and Hypothetical Issues

A comparison of capital gearing ratios for original issues and hypothetical, or reconstruction, issues is shown in Table 7.1 .

The capital gearing ratio is shown for the original issue for the year before the capital issue (Yr -1), the year of the issue (Yr 0), and the year following the year of issue (Yr +1). The hypothetical capital gearing can only be shown for Yr 0 and Yr +1.

To calculate the hypothetical capital gearing ratio:

**TABLE 7.1 : COMPARISON OF CAPITAL GEARING RATIOS FOR THE ORIGINAL ISSUE
AND THE HYPOTHETICAL ISSUES**

Company	Ind Sec	Mth	Year 0	Year +1	Co.CG Yr-1(X)	Co.CG Yr0 (X)	Hyp.CG Yr0 (X)	Diff.bet.Co.Co.CG & Hyp.(Yr0)	Yr+1 (X)	Hyp.CG Yr1 (X)	Diff.bet.Co. & Hyp(Yr1)
								X			X
1 Anglia Secure Homes	House	Sep	90	91	58.55	52.33	66.79	-12.45	65.01	83.49	-18.48
2 Bimec	Misau	Mar	92	93	30.43	41.28	91.96	-50.69	n/av	n/av	n/av
3 Bowater	Packp	Dec	90	91	53.73	42.00	58.52	-16.53	41.51	57.64	-16.13
4 Bouthorpe	Eletr	Dec	87	88	15.03	8.58	45.39	-36.81	16.31	53.86	-37.55
5 Casket	Gentr	Mar	91	92	57.07	42.46	72.04	-29.59	33.76	64.70	-30.96
6 Cater Allen	Disct	Apr	91	92	3.55	2.84	23.30	-20.47	0.35	20.37	-20.02
7 Community Hospital Grp	Hlthc	Jun	91	92	8.06	15.38	29.41	-14.03	n/av	n/av	n/av
8 Cookson Grp	Oindm	Dec	91	92	37.45	23.40	35.05	-11.66	n/av	n/av	n/av
9 De La Rue	Print	Mar	92	93	25.70	20.85	53.36	-32.51	n/av	n/av	n/av
10 Domino Printing	Print	Oct	91	92	14.16	10.67	59.31	-48.64	n/av	n/av	n/av
11 Eurotunnel	Trftr	Dec	90	91	51.56	59.61	74.06	-14.46	69.21	80.46	-11.25
12 Jeyes	Perah	Dec	89	90	36.55	5.23	50.57	-45.34	26.33	62.51	-36.18
13 Kvik Fit	Mdist	Feb	89	90	26.85	13.52	54.26	-40.74	41.49	72.35	-30.86
14 Lovell, Y.J.	Cnstr	Sep	91	92	41.13	43.78	64.52	-20.74	n/av	n/av	n/av
15 Midland Bank	Banks	Dec	87	88	52.53	45.28	59.16	-13.87	39.96	52.38	-12.42
16 Regalian	Prope	Mar	92	93	43.21	49.78	57.73	-7.95	n/av	n/av	n/av
17 Renold	Mang	Mar	85	86	48.17	35.91	47.05	-11.14	34.67	45.43	-10.76
18 Richards	Txmis	Sep	89	90	7.36	3.50	15.73	-12.23	2.72	14.20	-11.48
19 Sketchley	Laund	Mar	91	92	64.95	40.56	68.22	-27.66	20.65	58.14	-37.49
20 Tay Homes	House	Jun	87	88	29.78	0.00	53.16	-53.16	32.35	61.48	-29.13
21 Tibbet & Britten	Trftr	Dec	89	90	30.09	18.65	47.74	-29.09	10.36	41.55	-31.19
22 Westbury	House	Feb	92	93	39.76	13.55	33.05	-19.50	n/av	n/av	n/av
23 Allied Lyons	Brews	Feb	89	90	39.94	26.98	18.88	8.10	44.12	36.89	7.23
24 Asda	Fdret	Apr	87	88	14.74	28.76	16.38	12.38	18.80	9.98	8.82
25 Asda	Fdret	Apr	89	90	18.80	26.23	17.21	9.02	44.05	37.98	6.07
26 Bass	Brews	Sep	89	90	19.87	24.17	17.37	6.80	32.88	27.64	5.24
27 Blue Circle	Caent	Dec	88	89	32.54	38.24	28.31	9.93	42.83	33.54	9.30
28 British Land	Prope	Mar	87	88	50.12	43.37	41.95	1.41	28.42	27.30	1.12
29 British Land	Prope	Mar	92	93	50.38	59.18	50.95	8.23	n/av	n/av	n/av
30 British Steel	Steel	Mar	92	93	6.57	10.86	7.85	3.01	n/av	n/av	n/av
31 City Site Estates	Prope	Sep	87	88	36.94	54.32	18.86	35.45	53.24	26.36	26.89
32 Dares Estates	Prope	Dec	87	88	51.21	55.79	20.38	35.42	50.26	28.99	21.26
33 Forte	Hotel	Jan	90	91	28.00	25.98	23.30	2.68	25.66	23.22	2.44
34 Land Securities	Prope	Mar	87	88	14.22	17.99	11.29	6.69	21.58	16.89	4.69
35 Lasso	Oilap	Dec	86	87	48.82	46.01	39.54	6.47	44.78	38.05	6.73
36 Lasso	Oilap	Dec	89	90	29.98	35.12	24.76	10.36	42.21	33.82	8.39
37 NEPC	Prope	Sep	86	87	33.34	35.38	30.90	4.48	30.75	27.91	2.85
38 Taylor Woodrow	Cnstr	Dec	89	90	17.34	23.72	17.23	6.49	29.15	21.58	7.58
39 Vaux	Brews	Sep	89	90	9.00	18.92	7.63	11.29	17.19	6.72	10.48
40 Whitbread	Brews	Feb	91	92	9.96	14.40	10.15	4.25	17.04	12.88	4.16
41 Helical Bar	Prope	Jan	88	89	37.42	63.71	63.71	0.00	64.84	64.84	0.00
42 Next	Multa	Jan	88	89	14.90	46.87	46.87	0.00	31.00	31.00	0.00
43 Worcester Grp	Mang	Dec	90	91	30.59	42.26	42.26	0.00	31.19	31.19	0.00

Average capital gearing ratios:

For equity issues:	35.26	26.78	52.65	-25.87	31.05	54.90	-23.85
For debt issues:	28.43	32.52	22.39	10.14	33.94	25.61	8.33
For convertibles:	27.63	50.95	50.95	0.00	42.34	42.34	0.00

Capital gearing has been calculated as:

(1) $321+309/322+309 \times 100$ (see below for Datastream codes)

i.e. Long-term debt + short-term debt / Equity + debt

where equity = ordinary shares, preference shares and reserves
debt = long-term debt and short-term debt

(item 322 is total capital employed and comprises equity and long-term debt as defined above).

(i) for those companies which originally issued equity (and for which debt is the hypothetical alternative) the net effect is to increase the numerator by the amount of the issue but to leave the denominator unaltered since equity is reduced but debt is increased by an equivalent amount.

(ii) for those companies which originally issued debt (and for which equity is the hypothetical alternative) the net effect is to reduce the numerator by the amount of the issue but to leave the denominator unaltered since debt is reduced but equity is increased by an equivalent amount.

There is no change in the capital gearing ratios of those companies issuing convertibles, as they would originally have been classified by the companies as equity, and in the reconstructions, the convertibles are replaced by equity.

The companies numbered 1-22 are those which originally issued equity, 23-40 those which originally issued debt, and 41-43 those which made convertible issues. Average capital gearing ratios for equity issues, debt issues, and convertible issues have been calculated and are shown at the bottom of the table. Also shown are the capital gearing ratios for the same

categories (equity, debt, convertibles) for the reconstructions (i.e. the hypothetical issues); and also the differences between the original and hypothetical capital gearing ratios, both on an individual company by company basis and for the capital issue group as a whole.

Examining the actual capital gearing ratios, for those companies which made an equity issue, the average capital gearing ratio (henceforth CG) in Yr -1 (year before the issue) averaged 35.26%; whilst for companies which issued debt their average CG in Yr -1 averaged 28.43%, and for the companies issuing convertibles, the CG in Yr -1 averaged 27.63%. As discussed below this is supportive of the ideas of debt capacity, target debt-equity ratios, and mean reversion as mentioned above.

The decrease in the average CG for companies which issued equity was from 35.26% (Yr -1) to 26.78% (Yr 0), and there was an increase in the average CG for those issuing debt to 32.52%. There was also an increase in the average CG for the three companies issuing convertibles to 50.95%. The hypothetical CG column for Yr 0 shows how the CG would have been affected if the alternative issue had been made. For the

companies which originally issued equity, if they had issued debt, then the average CG would have been 52.65% (a substantial increase of 25.87% over the actual average CG) whilst for the companies which originally issued debt, if they had issued equity, the average CG would have been 22.39% (a decline of 10.14% over the actual average CG).

A review of the CGs for the year following the year of issue shows that the actual average for the equity issue companies was 31.05%, and that this would have been 54.90% if they had issued debt. The actual average for the debt issue companies was 33.94%, and this would have been 25.61% if they had all issued equity. The actual average for the companies issuing convertibles declined slightly to 42.34%.

Fig. 7.1 illustrates, for the companies which actually issued equity, the change that took place in the CG ratios for the actual issue, and the hypothetical change in CG for a debt reconstruction. Whilst Fig. 7.2 illustrates the corresponding changes in CG for the companies which originally issued debt, and for which there is a hypothetical reconstruction with equity.

FIG. 7.1 : CAPITAL GEARING RATIOS FOR EQUITY ISSUING COMPANIES

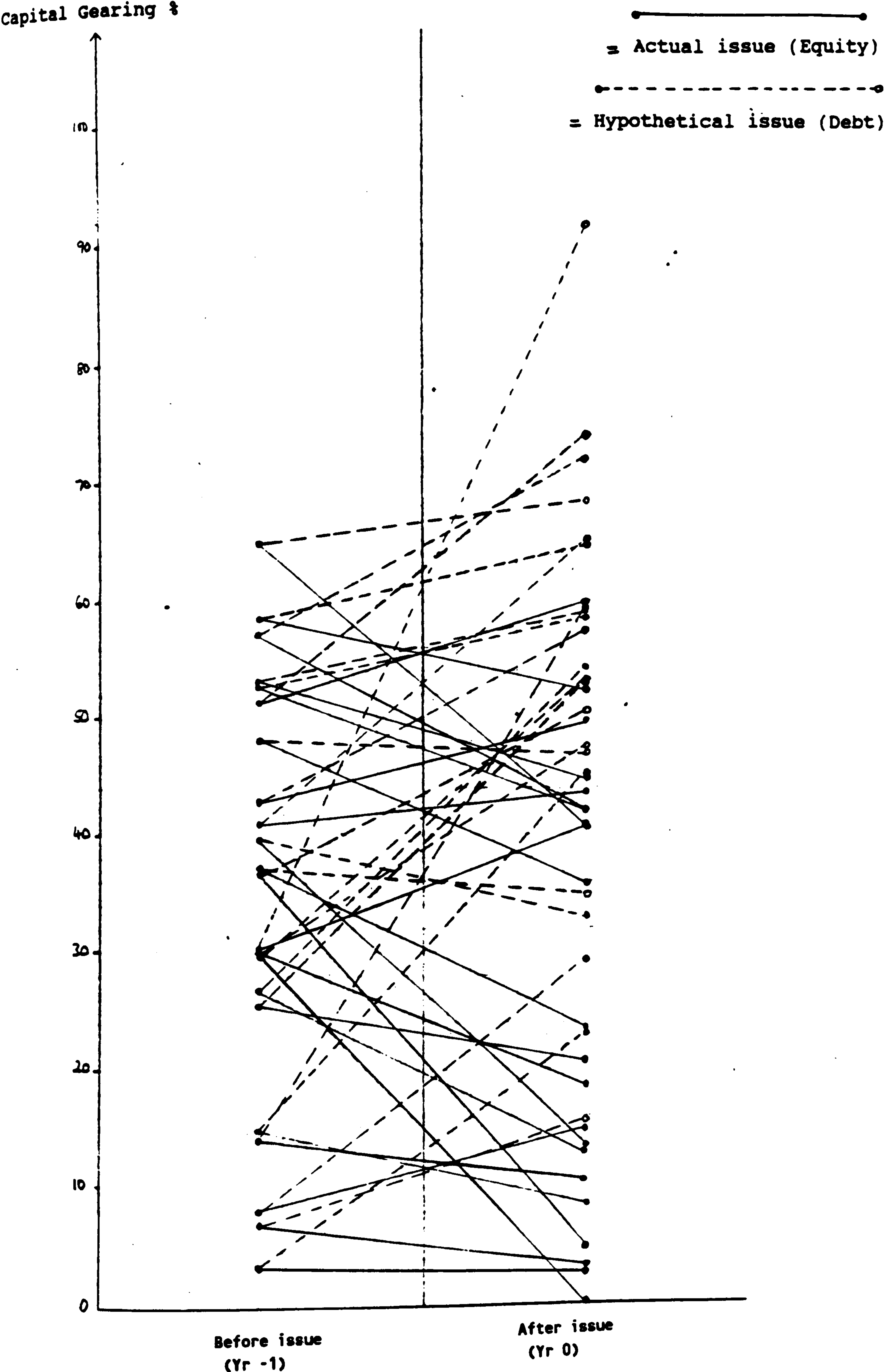
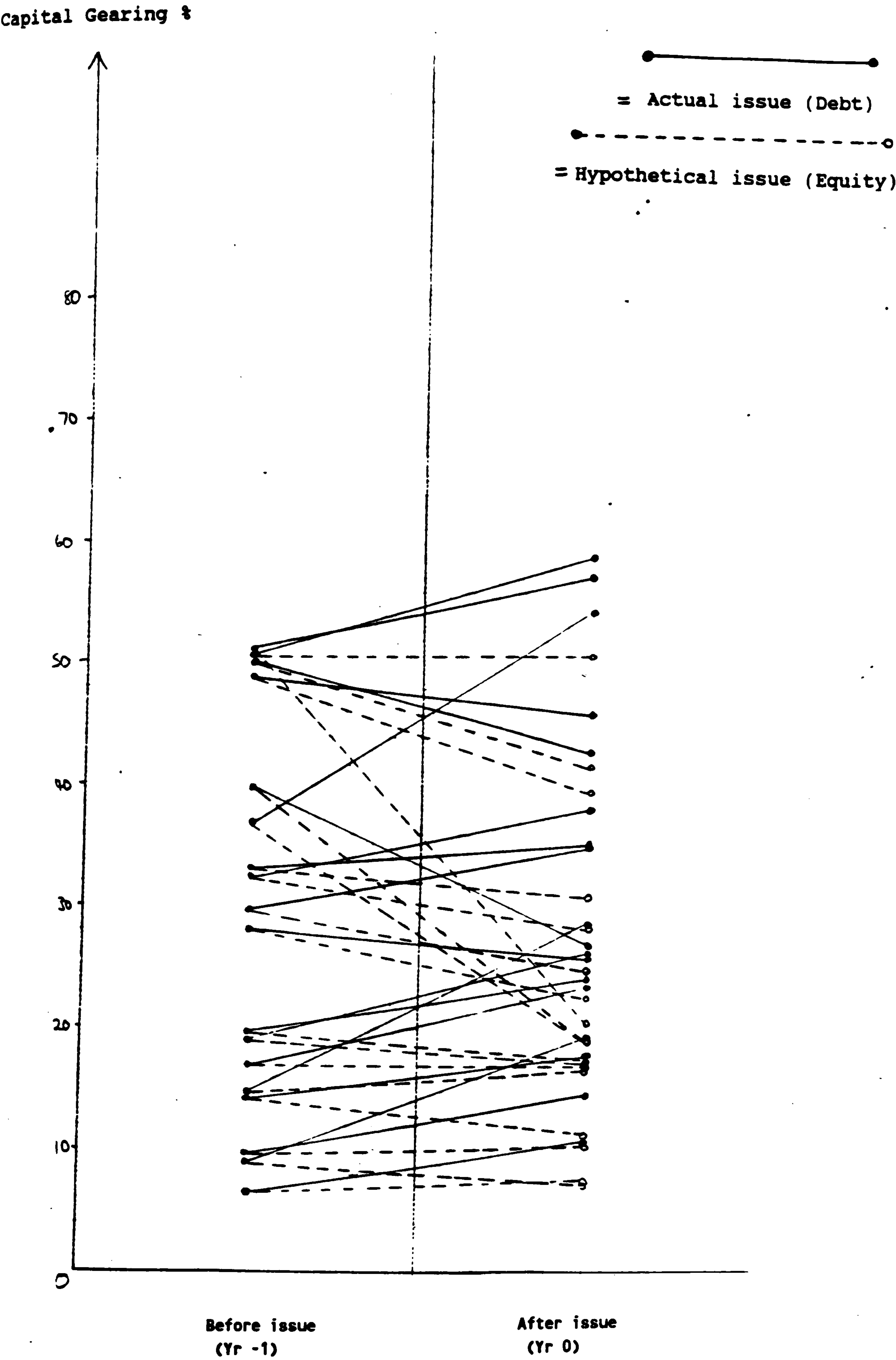


FIG. 7.2 : CAPITAL GEARING RATIOS FOR DEBT ISSUING COMPANIES

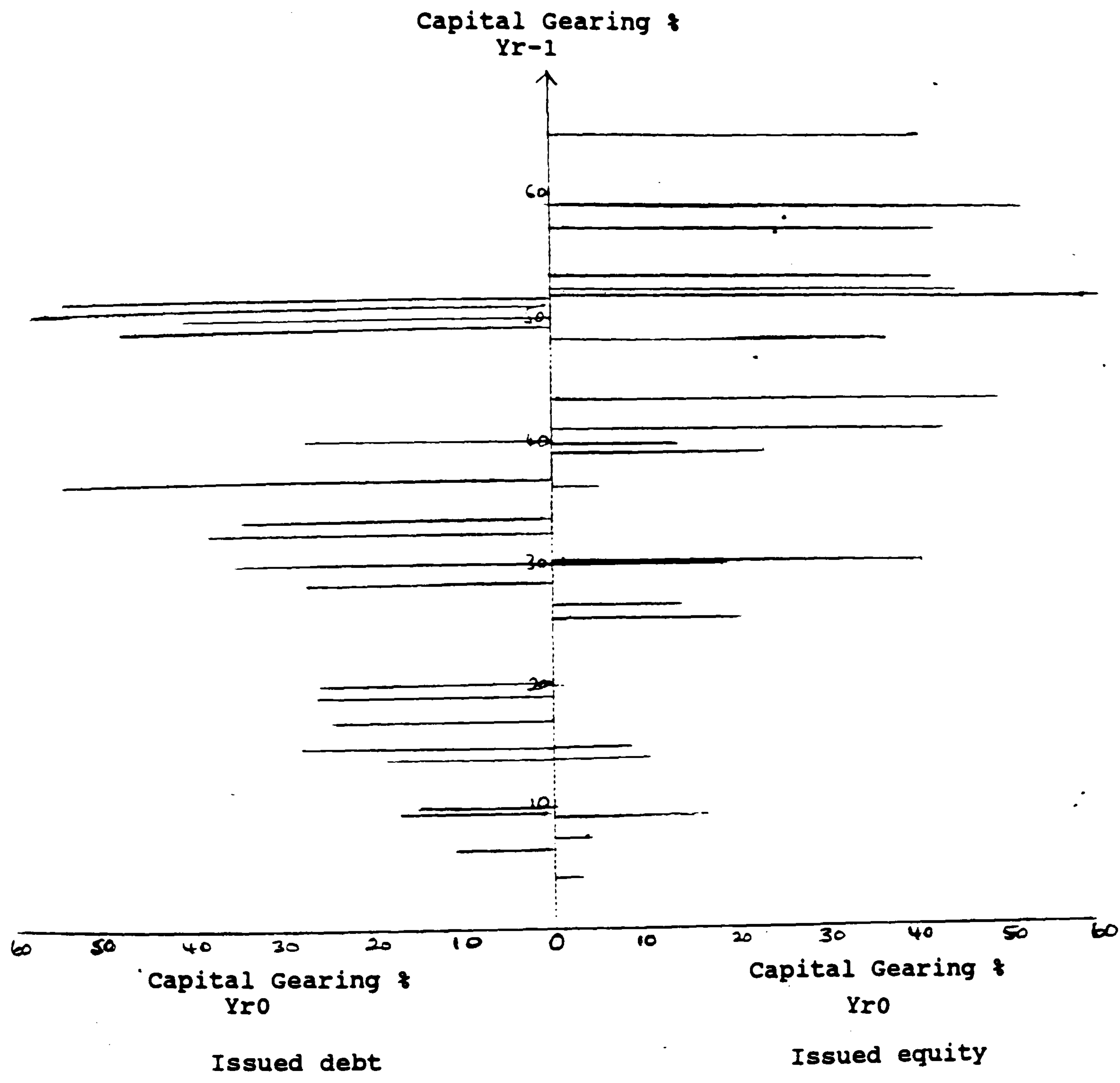


It can be seen that the companies which actually issued equity tended to have CGs before the issue which were higher than those companies which issued debt. Consequently if the equity issuing companies had issued debt, many would have had significant increases in their CGs. Analysis of Figs. 7.1 and 7.2 would seem to support the ideas of mean reversion and target debt capacity, with the majority of companies making a capital issue which results in a CG of 50% or less.

This is borne out by looking at the overall averages. If the companies which issued equity had issued debt instead of equity, then their CGs would have been significantly higher than those companies which did actually issue debt - an average of 52.65% (hypothetical debt issues) compared to 32.52% (actual debt issues) in year 0. The companies which did actually issue debt maintained an average CG ratio of 32.52%, and would be able to take advantage of any tax shields arising through the debt issue.

Fig. 7.3 combines the information from Figs. 7.1 and 7.2 and portrays it in a different way. It shows the change in CG for both companies issuing equity and those issuing debt. On the vertical axis is the CG for Yr-1 for all the companies,

FIG. 7.3 : CAPITAL GEARING RATIOS FOR EQUITY AND DEBT ISSUING COMPANIES



whilst the CG after the capital issue is shown on the horizontal axis, with equity issues on the right of the y axis and debt issues on the left. The pattern exhibits indications of mean reversion with more highly geared companies tending to issue equity, and less highly geared companies issuing debt.

7-2-4 Capital Gearing Ratios for Actual Issues and Industry Sector

Companies may be influenced in their choice of debt or equity by the general behaviour of companies in their industry sector. The CGs of the individual companies are compared to their relevant industry sector CG in Table 7.2. The industry sectors are the Datastream industry sectors (level 6) for each company obtained from program 101S. The capital gearing ratios for the industry sectors were obtained by setting up the relevant expression on program 190Y for the data items making up the CG ratio discussed above, then running it on 190X.

Taking the equity issuing companies as a group, in the year before the capital issue was made, the CG was 35.26% compared to 30.24% for the industry average; for debt issuing companies, the

TABLE 7.2 : COMPARISON OF CAPITAL GEARING RATIOS FOR THE ORIGINAL ISSUE
AND THE INDUSTRY SECTOR

Company	Ind Sec	Mth	Year		Co.CG	Ind.CG	Diff.bet.	Co.CG	Ind.CG	Diff.bet.	Co.CG	Ind.CG	Diff.bet.
			0	+1	Yr-1(X)	Yr-1(X)	Co.&Ind(Y-1)Yr0 (X)	Yr0 (X)	Yr0 (X)	Co.&Ind(Y0)Yr+1 (X)	Yr1 (X)	Yr1 (X)	Co.&Ind(Y1)
										%			%
1 Anglia Secure Homes	House	Sep	90	91	58.55	26.68	31.87	52.33	30.88	21.46	65.01	27.91	37.10
2 Bimac	Missu	Mar	92	93	30.43	30.71	-0.27	41.28	n/av	n/av	n/av	n/av	n/av
3 Bowater	Packp	Dec	90	91	53.73	42.90	10.83	42.00	34.63	7.37	41.51	35.23	6.27
4 Bouthorpe	Eletr	Dec	87	88	15.03	14.23	0.80	8.58	12.67	-4.10	16.31	17.25	-0.94
5 Casket	Gentr	Mar	91	92	57.07	25.89	31.18	42.44	28.99	13.46	33.74	n/av	n/av
6 Cater Allen	Disct	Apr	91	92	3.55	1.15	2.40	2.84	0.81	2.03	0.35	n/av	n/av
7 Community Hospital Grp	Hlthc	Jun	91	92	8.06	45.61	-37.55	15.38	42.71	-27.33	n/av	n/av	n/av
8 Cookson Grp	Olndm	Dec	91	92	37.45	33.46	3.99	23.40	40.29	-16.89	n/av	n/av	n/av
9 De La Rue	Print	Mar	92	93	25.70	32.73	-7.03	20.85	n/av	n/av	n/av	n/av	n/av
10 Domino Printing	Print	Oct	91	92	14.16	27.12	-12.95	10.67	32.73	-22.06	n/av	n/av	n/av
11 Eurotunnel	Trftr	Dec	90	91	51.56	38.26	13.30	59.61	44.86	14.75	69.21	50.69	18.52
12 Jeyes	Perah	Dec	89	90	36.55	18.62	17.93	5.23	19.94	-14.71	26.33	33.89	-7.56
13 Kwik Fit	Mdist	Feb	89	90	26.85	48.85	-22.00	13.52	49.94	-36.42	41.49	48.26	-6.77
14 Lovell, Y.J.	Cnstr	Sep	91	92	41.13	32.31	8.82	43.78	30.61	13.17	n/av	n/av	n/av
15 Midland Bank	Banks	Dec	87	88	52.53	34.41	18.12	45.28	33.15	12.13	39.96	34.38	5.58
16 Regalian	Prope	Mar	92	93	43.21	42.92	0.29	49.78	n/av	n/av	n/av	n/av	n/av
17 Renold	Mmang	Mar	85	86	48.17	29.11	19.06	35.91	26.37	9.54	34.67	27.31	7.36
18 Richards	Txmia	Sep	89	90	7.36	19.65	-12.29	3.50	24.04	-20.54	2.72	23.91	-21.19
19 Sketchley	Laund	Mar	91	92	64.95	44.97	19.98	40.56	29.20	11.36	20.65	n/av	n/av
20 Tay Homes	House	Jun	87	88	29.78	26.24	3.54	0.00	22.74	-22.74	32.35	24.93	7.42
21 Tibbet & Britten	Trftr	Dec	89	90	30.09	21.64	8.45	18.65	38.25	-19.60	10.36	44.86	-34.50
22 Vestbury	House	Feb	92	93	39.76	27.91	11.85	13.55	n/av	n/av	n/av	n/av	n/av
23 Allied Lyons	Brews	Feb	89	90	39.94	24.44	15.50	26.98	32.31	-5.33	44.12	32.70	11.42
24 Asda	Fdret	Apr	87	88	14.74	20.27	-5.53	28.76	22.35	6.41	18.80	22.27	-3.47
25 Asda	Fdret	Apr	89	90	18.80	22.27	-3.47	26.23	29.40	-3.17	44.05	32.34	11.71
26 Bass	Brews	Sep	89	90	19.87	24.44	-4.57	24.17	32.31	-8.14	32.88	32.70	0.18
27 Blue Circle	Cment	Dec	88	89	32.54	28.96	3.58	38.24	33.58	4.66	42.83	34.37	8.46
28 British Land	Prope	Mar	87	88	50.12	29.32	20.80	43.37	28.37	15.00	28.42	27.06	1.36
29 British Land	Prope	Mar	92	93	50.38	42.92	7.46	59.18	n/av	n/av	n/av	n/av	n/av
30 British Steel	Steel	Mar	92	93	6.57	8.62	-2.05	10.86	n/av	n/av	n/av	n/av	n/av
31 City Site Estates	Prope	Sep	87	88	36.94	29.32	7.62	54.32	28.37	25.95	53.24	27.06	26.18
32 Dares Estates	Prope	Dec	87	88	51.21	29.32	21.89	55.79	28.37	27.42	50.26	27.06	23.20
33 Forte	Hotel	Jan	90	91	28.00	35.94	-7.94	25.98	31.41	-5.43	25.66	32.62	-6.96
34 Land Securities	Prope	Mar	87	88	14.22	29.32	-15.10	17.99	28.37	-10.38	21.58	27.06	-5.48
35 Lasso	Oilap	Dec	86	87	48.82	34.28	14.54	46.01	33.66	12.35	44.78	30.33	14.45
36 Lasso	Oilap	Dec	89	90	29.98	31.56	-1.58	35.12	37.17	-2.05	42.21	39.40	2.81
37 MEPC	Prope	Sep	86	87	33.34	26.69	6.65	35.38	29.32	6.06	30.75	28.37	2.38
38 Taylor Woodrow	Cnstr	Dec	89	90	17.34	24.16	-6.82	23.72	32.11	-8.39	29.15	32.31	-3.16
39 Vaux	Brews	Sep	89	90	9.00	24.44	-15.44	18.92	32.31	-13.39	17.19	32.70	-15.51
40 Whitbread	Brews	Feb	91	92	9.96	32.70	-22.74	14.40	28.25	-13.85	17.04	n/av	n/av
41 Helical Bar	Prope	Jan	88	89	37.42	28.37	9.05	63.71	27.06	36.65	64.84	30.02	34.82
42 Next	Multa	Jan	88	89	14.90	16.49	-1.59	46.87	19.49	27.38	31.00	22.03	8.97
43 Worcester Grp	Mmang	Dec	90	91	30.59	24.45	6.14	42.26	26.35	15.91	31.19	30.75	0.44
Average capital gearing ratios:													
For equity issues:					35.26	30.24	5.01	26.78	30.16	-4.40	31.05	33.51	1.03
For debt issues:					28.43	27.72	0.71	32.52	30.48	1.73	33.94	30.56	4.50
For convertibles:					27.63	23.10	4.53	50.95	24.30	26.65	42.34	27.60	14.74

Capital gearing has been calculated as:

(1) $321+309/322+309 \times 100$ (see below for Datastream codes)

i.e. Long-term debt + short-term debt / Equity + debt

where equity = ordinary shares, preference shares and reserves

debt = long-term debt and short-term debt

(item 322 is total capital employed and comprises equity and long-term debt as defined above).

actual CG was 28.43% compared to 27.72% for the industry average; and for convertibles the actual CG was 27.63% compared to 23.10% for the industry average. The equity issuing companies and the convertible issuing companies as groups therefore had average CGs about 5% and 4.5% higher than their industry averages respectively. The debt issuing groups were more or less the same as the industry average.

In the year of issue (Yr 0), the equity issuing companies fall slightly below the industry average, whilst the debt issuing group move slightly ahead of it. It is noticeable that the convertible group's average CG moves ahead of the industry sectors average substantially (it doubles). In Yr +1, the year following the year of issue, the equity issuing group's CG remains slightly below the industry average, the debt issuing group's CG is slightly ahead, and the convertibles are substantially ahead of their industry sectors average.

Apart from the convertibles, it can be seen that on average, companies tend to make issues which push the gearing into line with the industry averages, or which bring them back into line with them.

FIG. 7.4 : CAPITAL GEARING RATIOS FOR INDUSTRY SECTORS
FOR EQUITY ISSUING COMPANIES

Capital Gearing %

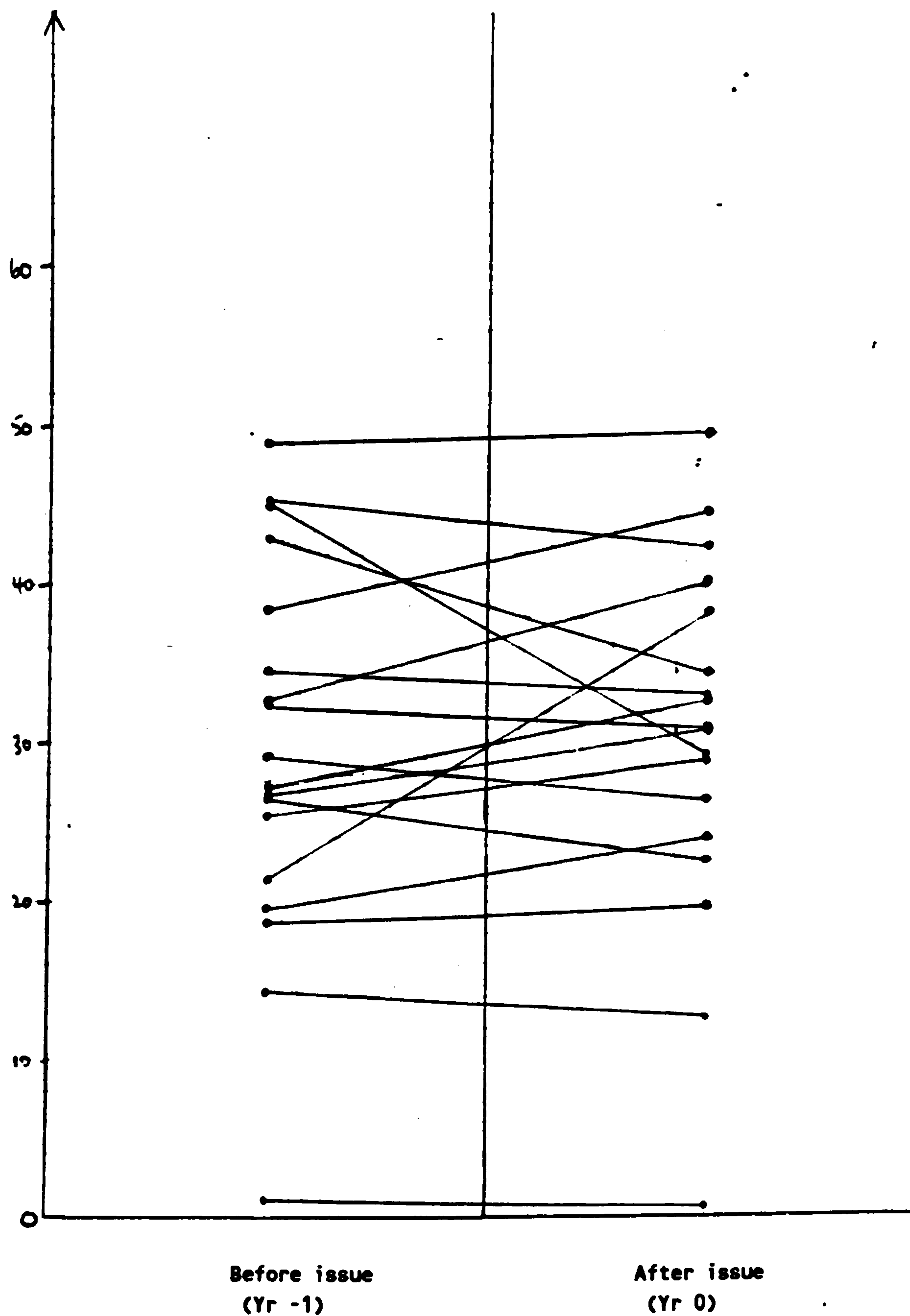
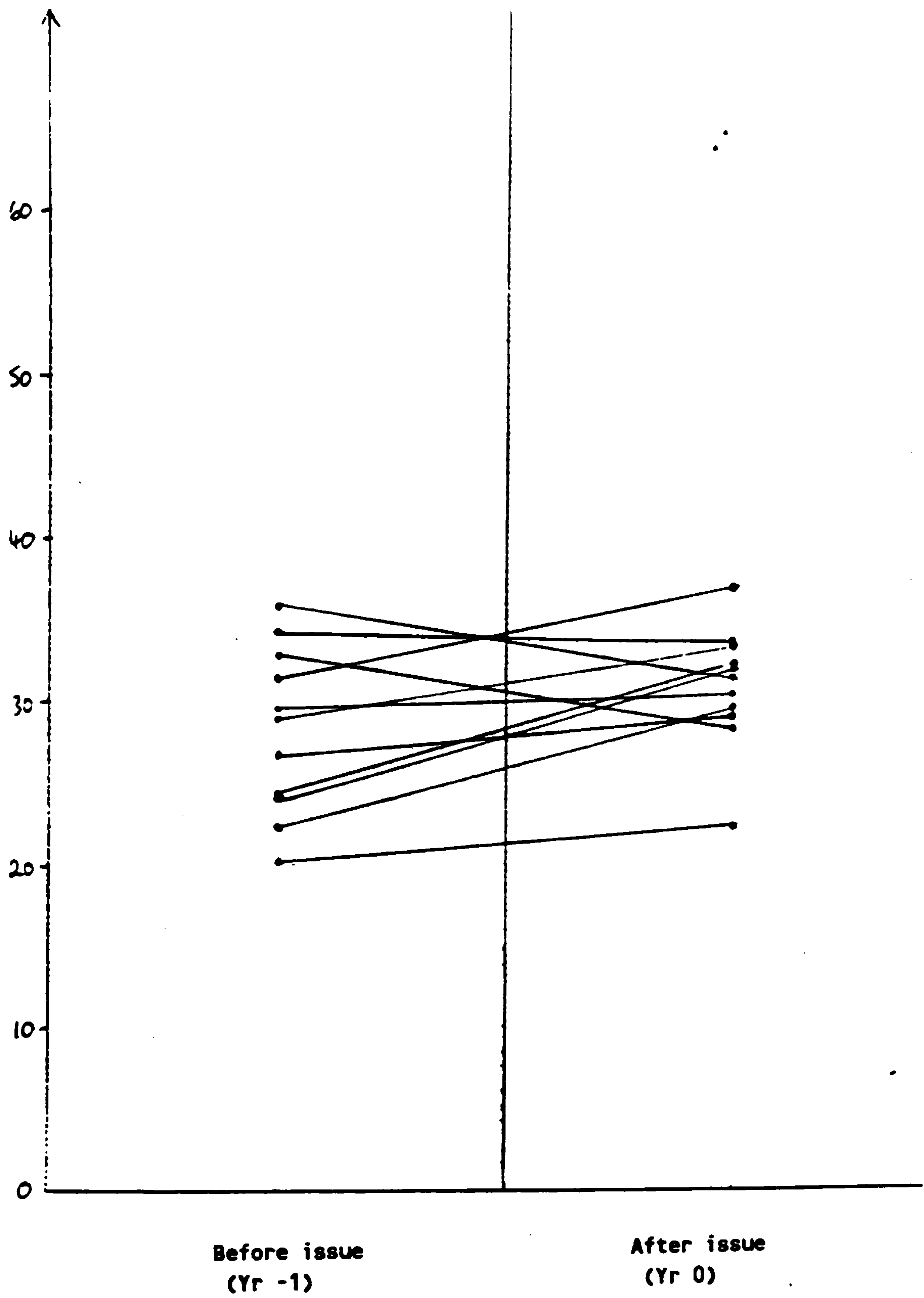


FIG. 7.5 : CAPITAL GEARING RATIOS FOR INDUSTRY SECTORS
FOR DEBT ISSUING COMPANIES

Capital Gearing %



Figs. 7.4 and 7.5 show the industry sector CG ratios for companies making equity and debt issues respectively. The change in CG ratios is shown for the year prior to capital issue and the year following.

The range of values for the industry sector CG ratios is larger for those relating to the equity issuing companies than the debt issuing companies. This a similar pattern to that shown in Figs. 7.1 and 7.2.

7-2-5 Capital Gearing Ratios for Hypothetical Issues and Industry Sector

An interesting adjunct would be to examine the effect of the hypothetical issues on CGs in relation to the industry CGs. This is discussed below with reference to Table 7.3.

It can be seen that if the equity issuing group had issued debt, then the average CG would have been 52.65% in Yr 0 and 54.90% in Yr +1, compared to an industry average for all companies issuing equity of 30.16% and 33.51% in Yrs 0 and +1 respectively. If the debt issuing group had issued equity, then their CGs would have been 22.39% and 25.61% in Yrs 0 and +1 respectively,

TABLE 7.3 : COMPARISON OF CAPITAL GEARING RATIOS FOR THE HYPOTHETICAL ISSUE
AND THE INDUSTRY SECTOR

Company	Ind Sec	Mth	Year 0	Year +1	Ind.CG Yr-1(%)	Hyp.CG Yr0 (%)	Ind.CG Yr0 (%)	Diff.bet.Hyp. & Ind(Yr0)	Hyp.CG Yr1 (%)	Ind.CG Yr1 (%)	Diff.bet.Hyp. & Ind(Yr1)
								X			X
1 Anglia Secure Homes	House	Sep	90	91	26.68	64.79	30.88	33.91	83.49	27.91	55.58
2 Bimac	Missu	Mar	92	93	30.71	91.96	n/av	n/av	n/av	n/av	n/av
3 Bowater	Packp	Dec	90	91	42.90	58.52	34.63	23.90	57.64	35.23	22.41
4 Bouthorpe	Eletr	Dec	87	88	14.23	45.39	12.67	32.72	53.86	17.25	36.61
5 Casket	Gentr	Mar	91	92	25.89	72.04	28.99	43.05	64.70	n/av	n/av
6 Cater Allen	Disct	Apr	91	92	1.15	23.30	0.81	22.49	20.37	n/av	n/av
7 Community Hospital Grp	Hlthc	Jun	91	92	45.61	29.41	42.71	-13.31	n/av	n/av	n/av
8 Cookson Grp	Oindm	Dec	91	92	33.46	35.05	40.29	-5.24	n/av	n/av	n/av
9 De La Rue	Print	Mar	92	93	32.73	53.36	n/av	n/av	n/av	n/av	n/av
10 Domino Printing	Print	Oct	91	92	27.12	59.31	32.73	26.58	n/av	n/av	n/av
11 Eurotunnel	Trftr	Dec	90	91	38.26	74.06	44.86	29.21	80.46	50.69	29.77
12 Jeyes	Persh	Dec	89	90	18.62	50.57	19.94	30.63	62.51	33.89	28.62
13 Kwik Fit	Mdist	Feb	89	90	48.85	54.26	49.94	4.32	72.35	48.26	24.09
14 Lovell, Y.J.	Cnstr	Sep	91	92	32.31	64.52	30.61	33.91	n/av	n/av	n/av
15 Midland Bank	Banks	Dec	87	88	34.41	59.16	33.15	26.01	52.38	34.38	18.00
16 Regellan	Prope	Mar	92	93	42.92	57.73	n/av	n/av	n/av	n/av	n/av
17 Renold	Mmang	Mar	85	86	29.11	47.05	26.37	20.68	45.43	27.31	18.12
18 Richards	Txmis	Sep	89	90	19.65	15.73	24.04	-8.31	14.20	23.91	-9.71
19 Sketchley	Laund	Mar	91	92	44.97	68.22	29.20	39.02	58.14	n/av	n/av
20 Tay Homes	House	Jun	87	88	26.24	53.16	22.74	30.42	61.48	24.93	36.55
21 Tibbet & Britten	Trftr	Dec	89	90	21.64	47.74	38.25	9.49	41.55	44.86	-3.31
22 Westbury	House	Feb	92	93	27.91	33.05	n/av	n/av	n/av	n/av	n/av
23 Allied Lyons	Brews	Feb	89	90	24.44	18.88	32.31	-13.43	36.89	32.70	4.19
24 Asda	Fdret	Apr	87	88	20.27	16.38	22.35	-5.97	9.98	22.27	-12.29
25 Asda	Fdret	Apr	89	90	22.27	17.21	29.40	-12.19	37.98	32.34	5.64
26 Bass	Brews	Sep	89	90	24.44	17.37	32.31	-14.94	27.64	32.70	-5.06
27 Blue Circle	Cment	Dec	88	89	28.96	28.31	33.58	-5.27	33.54	34.37	-0.83
28 British Land	Prope	Mar	87	88	29.32	41.95	28.37	13.58	27.30	27.06	0.24
29 British Land	Prope	Mar	92	93	42.92	50.95	n/av	n/av	n/av	n/av	n/av
30 British Steel	Steel	Mar	92	93	8.62	7.85	n/av	n/av	n/av	n/av	n/av
31 City Site Estates	Prope	Sep	87	88	29.32	18.86	28.37	-9.51	26.36	27.06	-0.70
32 Dares Estates	Prope	Dec	87	88	29.32	20.38	28.37	-7.99	28.99	27.06	1.93
33 Forte	Hotel	Jan	90	91	35.94	23.30	31.41	-8.11	23.22	32.62	-9.40
34 Land Securities	Prope	Mar	87	88	29.32	11.29	28.37	-17.08	16.89	27.06	-10.17
35 Lasmco	Oilep	Dec	86	87	34.28	39.54	33.66	5.88	38.05	30.33	7.72
36 Lasmco	Oilep	Dec	89	90	31.56	24.76	37.17	-12.41	33.82	39.40	-5.58
37 MEPC	Prope	Sep	86	87	26.69	30.90	29.32	1.58	27.91	28.37	-0.46
38 Taylor Woodrow	Cnstr	Dec	89	90	24.16	17.23	32.11	-14.88	21.58	32.31	-10.73
39 Vaux	Brews	Sep	89	90	24.44	7.63	32.31	-24.68	6.72	32.70	-25.98
40 Whitbread	Brews	Feb	91	92	32.70	10.15	28.25	-18.10	12.88	n/av	n/av
41 Helical Bar	Prope	Jan	88	89	28.37	63.71	27.06	36.65	64.84	30.02	34.82
42 Next	Mults	Jan	88	89	16.49	46.87	19.49	27.38	31.00	22.03	8.97
43 Worcester Grp	Mmang	Dec	90	91	24.45	42.26	26.35	15.91	31.19	30.75	0.44
Average capital gearing ratios:											
For equity issues:					30.24	52.65	30.16	21.08	54.90	33.51	23.34
For debt issues:					27.72	22.39	30.48	-8.97	25.61	30.56	-4.10
For convertibles:					23.10	50.95	24.30	26.65	42.34	27.60	14.74

Capital gearing has been calculated as:

(1) $321+309/322+309 \times 100$ (see below for Datastream codes)

i.e. Long-term debt + short-term debt / Equity + debt

where equity = ordinary shares, preference shares and reserves
debt = long-term debt and short-term debt

(item 322 is total capital employed and comprises equity and long-term debt as defined above).

compared to an industry average of 30.48% and 30.56%. The convertible issues do not change on the hypothetical figures for the reasons discussed above. These findings show that had the alternative issue been made, then the companies would have moved a considerable way from their industry average. This is particularly significant for the companies which originally issued equity - if they had issued debt, their average CG would have been some 40% more than the industry average CG.

The examination of the capital gearing ratios discussed above would lend some support to the premise that companies examine their capital gearing ratio when considering making a capital issue, and that the effect on the capital gearing ratio, both in terms of the absolute value and relative to the industry sector is taken into account.

7-2-6 Capital Gearing and Size of Issue

The size of the capital issue may also have an influence on the type of capital issue. It may, for example, be easier to raise smaller amounts by issuing debt and larger amounts by issuing equity.

In Fig. 7.6 the CG for all companies for the year prior to issue is shown on the y axis; whilst on the horizontal axis is the size of the issue, calculated as $([\text{proceeds of issue} / \text{total assets}] \times 100)$. The latter proportion for equity issuing companies being on the right of the y axis and for debt issuing companies on the left.

Except for two 'outliers' on the debt issues, it would appear to be the case that the amount of an equity issue tends to be a larger proportion of the total assets of the business. In general this seems to be true whatever the level of capital gearing.

Fig. 7.7 combines the size criteria for both equity issuing and debt issuing companies, and shows the size of the issue $([\text{proceeds of issues in relation to the total assets of the company}] \times 100)$ against total assets. The proceeds of the majority of issues are for less than 20% of the total assets of the company.

7-2-7 Statistical Comparison of Capital Gearing Measures for Equity and Debt Issues

The analysis above has highlighted some notable differences in CGs between companies which issued

FIG. 7.6 : CAPITAL GEARING AND SIZE OF CAPITAL ISSUE

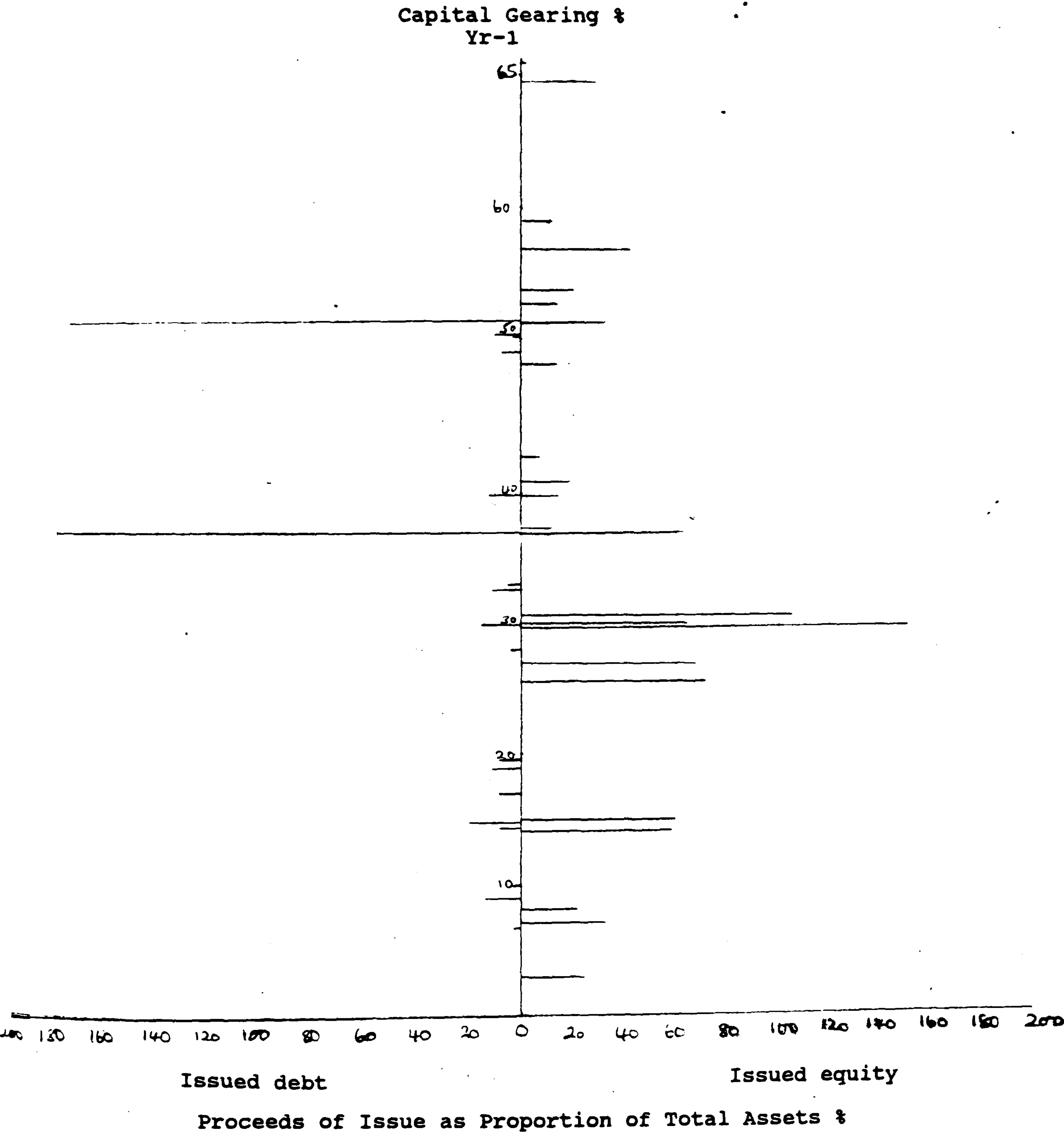
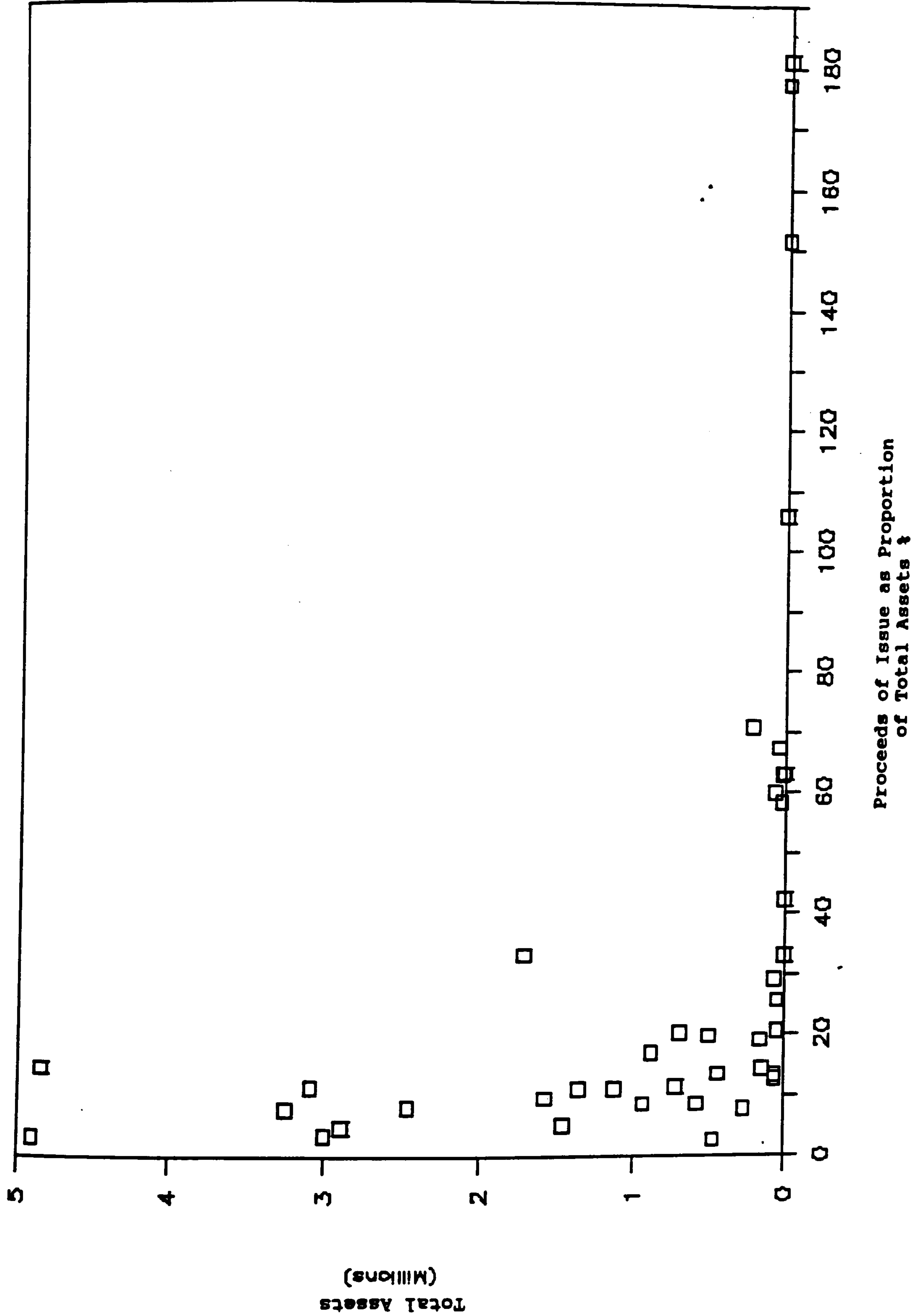


FIG. 7.7. : SIZE OF CAPITAL ISSUES IN RELATION TO TOTAL ASSETS



equity and those which issued debt.

The CGs for the year before the capital issue for the companies which subsequently issued equity, and those which subsequently issued debt, were found to be significantly different from each other at the 1% level (see Table 7.3B). Similarly, the industry sector CGs were also significantly different for these two groups at the 2% level (see Table 7.3B).

The above findings would seem to imply that examination of a company's CG and its industry sector CG would provide a meaningful indication of the choice of capital issue at a particular point in time.

7-3 Impact on Income Gearing & Interest Cover Ratios

7-3-1 Perceived Influence of Income Gearing

Income gearing is arguably of more relevance than capital based measures founded on unadjusted historical cost principles, because it reflects more clearly the 'economic reality' of the debt servicing costs over the reporting period.

**TABLE 7.3B : STATISTICAL COMPARISON OF CAPITAL GEARING MEASURES
FOR EQUITY AND FOR DEBT ISSUES**

Paired 't' Test						

Source Table	Year -1	Sd(E)	Sd (D)	Se	Degrees of Freedom	Signif- icance (based on 2tt)
Individual Companies						

7.2	CG (orig. issue)	17.4720	14.9259	5.1237	38	0.01
Industry Sectors						

7.2	CG (Ind. Sec.)	11.1009	7.0277	2.8888	38	0.02

Note : CG = Capital gearing ratio

Sd(E) = standard deviation of CG (Yr-1) for all the companies
which issued equity in the following year

Sd(D) = standard deviation of CG (Yr-1) for all the companies
which issued debt in the following year

Se = standard error

The income gearing ratio was defined as:

$$\frac{\text{Interest Payable}}{\text{Earnings before interest and tax}} \times 100$$

The income gearing ratios for the actual and hypothetical issues are discussed below.

7-3-2 Income Gearing Ratios for Actual and Hypothetical Issues

Table 7.4 compares the actual income gearing ratio with the hypothetical gearing ratio which would have arisen on a reconstruction. For all the income gearing comparisons (and the interest cover comparisons discussed below) the hypothetical reconstruction is based on the results obtained at the benchmark + 2% as the coupon on debt usually falls in the range +1% to +3%, with most in the +2% band (see Table 6.3, Chapter 6).

For Yr -1, the average actual income gearing ratio was 41.71% for the equity issuing companies, 18.03% for the debt issuing companies, and 3.28% for the convertible issuing companies. In Yr 0, the equity issuing companies had an average interest gearing ratio of 17.98%; the

TABLE 7.4 : COMPARISON OF INTEREST GEARING RATIOS - ACTUAL COMPARED TO HYPOTHETICAL ISSUE

Company	Ind Sec	Mth	Year		Co.IG	Co.IG	Hyp.IG	Diff.bet.Co.Co.IG		Hyp.IG	Diff.bet.Co.	
			0	1	Yr-1(%)	Yr0 (%)	Yr0(%)	& Hyp.Yr0	Yr-1(%)	Yr-1(%)	& Hyp.(Yr-1)	
1 Anglia Secure Homes	House	Sep	90	91	1493.73	-482.06	-501.38	19.32	-59.83	-70.92	11.10	
2 Bimac	Missu	Mar	92	93	11.57	16.58	25.97	-9.39	n/av	n/av	n/av	
3 Bowater	Packp	Dec	90	91	29.25	33.08	38.64	-5.57	32.39	43.65	-11.25	
4 Bouthorpe	Eletr	Dec	87	88	4.17	2.94	5.68	-2.74	3.28	16.34	-13.06	
5 Casket	Gentr	Mar	91	92	-2371.93	92.29	113.60	-21.30	48.40	67.94	-19.54	
6 Cater Allen	Disct	Apr	91	92	n/av	n/av	n/av	n/av	n/av	n/av	n/av	
7 Community Hospital Grp	Hlthc	Jun	91	92	2.67	1.29	4.99	-3.70	n/av	n/av	n/av	
8 Cookson Grp	Oindm	Dec	91	92	40.69	43.97	54.69	-10.71	n/av	n/av	n/av	
9 De La Rue	Print	Mar	92	93	19.78	12.31	21.34	-9.03	n/av	n/av	n/av	
10 Domino Printing	Print	Oct	91	92	9.57	6.09	6.09	0.00	n/av	n/av	n/av	
11 Eurotunnel	Trftr	Dec	90	91	98.62	99.88	102.79	-2.91	100.03	121.21	-21.17	
12 Jeyes	Perah	Dec	89	90	32.12	30.34	30.34	0.00	16.14	37.13	-20.99	
13 Kwik Fit	Mdist	Feb	89	90	6.83	5.97	20.55	-14.58	24.45	43.51	-19.06	
14 Lovell, Y.J.	Cnstr	Sep	91	92	41.15	-48.86	-55.54	6.69	n/av	n/av	n/av	
15 Midland Bank	Banks	Dec	87	88	31.33	-60.83	-69.00	8.17	21.87	30.64	-8.77	
16 Regalian	Prope	Mar	92	93	n/av	n/av	n/av	n/av	n/av	n/av	n/av	
17 Renold	Mmang	Mar	85	86	100.00	50.55	50.55	0.00	32.74	43.61	-10.87	
18 Richards	Taxis	Sep	89	90	3.27	17.43	25.72	-8.30	7.58	21.21	-13.62	
19 Sketchley	Laund	Mar	91	92	129.54	571.68	740.14	-168.46	33.13	64.32	-31.20	
20 Tay Homes	House	Jun	87	88	18.88	8.25	8.25	0.00	7.42	19.12	-11.70	
21 Tibbet & Britten	Trftr	Dec	89	90	10.50	11.76	23.61	-11.85	12.48	26.10	-13.62	
22 Westbury	House	Feb	92	93	1122.67	-53.02	-70.63	17.61	n/av	n/av	n/av	
23 Allied Lyons	Brews	Feb	89	90	24.93	22.65	22.65	0.00	22.92	19.59	3.33	
24 Asda	Fdret	Apr	87	88	0.83	0.10	0.10	0.00	1.24	1.24	0.00	
25 Asda	Fdret	Apr	89	90	1.24	0.76	0.31	0.46	25.65	20.04	5.61	
26 Bass	Brews	Sep	89	90	9.14	12.85	11.07	1.78	25.38	21.77	3.62	
27 Blue Circle	Cment	Dec	88	89	20.47	16.66	16.11	0.55	19.40	13.80	5.61	
28 British Land	Prope	Mar	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	
29 British Land	Prope	Mar	92	93	n/av	n/av	n/av	n/av	n/av	n/av	n/av	
30 British Steel	Steel	Mar	92	93	8.30	-450.00	-320.62	-129.38	n/av	n/av	n/av	
31 City Site Estates	Prope	Sep	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	
32 Dares Estates	Prope	Dec	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	
33 Forte	Hotel	Jan	90	91	20.82	27.79	24.74	3.06	34.48	30.78	3.71	
34 Land Securities	Prope	Mar	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	
35 Lasso	Oilcp	Dec	86	87	21.80	89.29	81.08	8.21	48.64	41.42	7.22	
36 Lasso	Oilcp	Dec	89	90	66.74	38.98	29.13	9.85	40.80	32.48	8.32	
37 MEPC	Prope	Sep	86	87	n/av	n/av	n/av	n/av	n/av	n/av	n/av	
38 Taylor Woodrow	Cnstr	Dec	89	90	9.70	15.60	14.22	1.37	23.42	21.32	2.09	
39 Vaux	Brews	Sep	89	90	11.44	14.81	9.01	5.80	18.78	4.16	14.62	
40 Whitbread	Brews	Feb	91	92	20.96	14.69	13.93	0.77	19.27	13.56	5.70	
41 Helical Bar	Prope	Jan	88	89	n/av	n/av	n/av	n/av	n/av	n/av	n/av	
42 Next	Multa	Jan	88	89	4.19	7.76	5.71	2.04	29.04	22.49	6.55	
43 Worcester Grp	Mmang	Dec	90	91	2.37	17.58	17.58	0.00	22.07	22.07	0.00	

Average income gearing ratios:

For equity issues:	41.72	17.98	28.82	-10.84	21.55	35.68	-14.14
For debt issues:	18.03	-16.32	-8.19	-8.13	25.45	20.01	5.44
For convertible issues:	3.28	12.67	11.65	1.02	25.56	22.28	3.27

Interest gearing has been calculated as:

$$(\text{Interest/Earnings before interest and tax}) \times 100$$

debt issuing companies an interest gearing ratio of -16.32% (although this is +23.11%, if one company's unusual income gearing of -450.00 is excluded); and convertibles an average interest gearing ratio of 12.67%. This would compare to an average income gearing of 28.82% if the equity issuing companies had issued debt; -8.19% if the debt issuing companies had issued equity (+20.21% if the unusual income gearing of -320.62 is excluded). The only convertible to be affected by the hypothetical reconstruction would be Next plc, where a convertible loan would be replaced in the reconstruction by equity, so less interest would be payable, resulting in the interest gearing decreasing for Next from 7.76% to 5.71%. This pattern is also reflected in Yr +1.

It can be seen that if the equity issuing group had issued debt, then the average interest gearing ratio for their group would have increased substantially.

There are some extreme values for the equity issuing companies, particularly for the year prior to the capital issue (Yr-1), although these do tend to average out to a certain extent (for example, values of +1493.73, +1122.67, and -2371.93). This makes a diagrammatic represent-

ation difficult; it should be noted that these extreme values seem to occur more often for the equity issuing companies.

7-3-3 Income Gearing Ratios for Actual Issues and Industry Sector

A comparison of the actual income gearing ratios with industry sectors is made in Table 7.5. In Yr -1, the income gearing for those companies which went on to issue equity in the following year was 41.72%, compared to an industry average income gearing ratio of 36.58%. When the companies subsequently issue equity in Yr 0, the income gearing ratio falls to 17.98% compared to an industry average income gearing ratio of 40.52% in Yr 0,; and 21.55% compared to an industry average income gearing ratio of 54.01% in Yr +1. So the equity issuing group does end up having an income gearing ratio which is considerably less than the average income gearing for the industry sectors represented by those companies having made equity issues.

The average income gearing ratio for the debt issuing group is 18.03% in Yr -1, comparing with an industry income gearing of 16.62%. In Yr 0, there is a -16.32% income gearing ratio, but this

TABLE 7.5 : COMPARISON OF INTEREST GEARING RATIOS - ACTUAL COMPARED TO INDUSTRY SECTOR

Company	Ind Sec	Mth	Year 0	Year 1	Co.IG Yr-1(%)	Ind.IG Yr-1(%)	Diff.bet.Co.&Ind. Yr-1	Co.IG Yr0 (%)	Ind.IG Yr0(%)	Diff.bet.Co.&Ind. Yr0	Co.IG Yr+1(%)	Ind.IG Yr+1(%)	Diff.bet.Co.&Ind.(Yr+1)
1 Anglia Secure Homes	House	Sep	90	91	1493.73	17.67	1476.06	-482.06	42.11	-524.17	-59.83	330.1	-389.93
2 Bimac	Misc	Mar	92	93	11.57	26.46	-14.89	16.58	n/av	n/av	n/av	n/av	n/av
3 Bowater	Packp	Dec	90	91	29.25	18.45	10.80	33.08	21.13	11.95	32.39	26.44	7.95
4 Bouthorpe	Eletr	Dec	87	88	4.17	6.85	-2.68	2.94	6.33	-3.39	3.28	6.95	-3.67
5 Casket	Genr	Mar	91	92	-2371.93	19.66	-2391.59	92.29	20.20	72.09	48.40	n/av	n/av
6 Cater Allen	Diact	Apr	91	92	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
7 Community Hospital Grp	Hlthc	Jun	91	92	2.67	23.51	-20.84	1.29	23.59	-22.30	n/av	n/av	n/av
8 Cookson Grp	Oindm	Dec	91	92	40.69	19.34	21.35	43.97	17.45	26.52	n/av	n/av	n/av
9 De La Rue	Print	Mar	92	93	19.78	21.46	-1.68	12.31	n/av	n/av	n/av	n/av	n/av
10 Domino Printing	Print	Oct	91	92	9.57	18.17	-8.60	6.09	21.46	-15.37	n/av	n/av	n/av
11 Eurotunnel	Trftr	Dec	90	91	98.62	25.33	73.29	99.88	35.59	64.29	100.03	47.63	52.40
12 Jeyes	Persh	Dec	89	90	32.12	12.11	20.01	30.34	15.39	14.95	16.14	20.17	-4.03
13 Kuik Fit	Mdist	Feb	89	90	6.83	23.49	-16.66	5.97	38.36	-32.39	24.43	59.29	-34.86
14 Lovell, Y.J.	Cnstr	Sep	91	92	41.15	33.86	7.29	-48.86	291.85	-340.71	n/av	n/av	n/av
15 Midland Bank	Banks	Dec	87	88	31.33	21.51	9.82	-60.83	37.85	-98.68	21.87	15.4	6.47
16 Regalian	Prope	Mar	92	93	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
17 Renold	Mmang	Mar	85	86	100.00	28.53	71.47	50.55	22.25	28.30	32.74	17.43	15.31
18 Richards	Txmle	Sep	89	90	3.27	15.79	-12.52	17.43	20.54	-3.11	7.58	26.50	-18.92
19 Sketchley	Laund	Mar	91	92	129.54	36.57	92.97	571.68	35.18	536.50	33.13	n/av	n/av
20 Tay Homes	House	Jun	87	88	18.88	21.39	-2.51	8.25	14.28	-6.03	7.42	10.63	-3.21
21 Tibbet & Britten	Trftr	Dec	89	90	10.50	11.36	-0.86	11.76	25.33	-13.57	12.48	35.59	-23.11
22 Westbury	House	Feb	92	93	1122.67	330.10	792.57	-53.02	n/av	n/av	n/av	n/av	n/av
23 Allied Lyons	Brews	Feb	89	90	24.93	16.40	8.53	22.65	22.56	0.09	22.92	24.44	-1.52
24 Asda	Fdret	Apr	87	88	0.83	5.91	-5.08	0.10	4.90	-4.80	1.24	5.21	-3.97
25 Asda	Fdret	Apr	89	90	1.24	5.21	-3.97	0.76	8.45	-7.69	25.65	13.91	11.74
26 Bass	Brews	Sep	89	90	9.14	16.40	-7.26	12.85	22.56	-9.71	25.38	24.44	0.94
27 Blue Circle	Cment	Dec	88	89	20.47	15.18	5.29	16.66	14.21	2.45	19.40	15.98	3.42
28 British Land	Prope	Mar	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
29 British Land	Prope	Mar	92	93	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
30 British Steel	Steel	Mar	92	93	8.30	13.27	-4.97	-450.00	n/av	n/av	n/av	n/av	n/av
31 City Site Estates	Prope	Sep	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
32 Dares Estates	Prope	Dec	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
33 Forte	Hotel	Jan	90	91	20.82	26.97	-6.15	27.79	28.80	-1.01	34.48	41.56	-7.08
34 Land Securities	Prope	Mar	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
35 Laseo	Oilep	Dec	86	87	21.80	13.31	8.49	89.29	70.44	18.85	48.64	26.53	22.11
36 Laseo	Oilep	Dec	89	90	66.74	31.93	34.81	38.98	28.43	10.55	40.80	26.91	13.89
37 NEPC	Prope	Sep	86	87	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
38 Taylor Woodrow	Cnstr	Dec	89	90	9.70	13.99	-4.29	15.60	19.98	-4.38	23.42	33.86	-10.44
39 Vaux	Brews	Sep	89	90	11.44	16.40	-4.96	14.81	22.56	-7.75	18.78	24.44	-5.66
40 Whitbread	Brews	Feb	91	92	20.96	24.44	-3.48	14.69	24.16	-9.67	19.27	n/av	n/av
41 Helical Bar	Prope	Jan	88	89	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
42 Next	Multa	Jan	88	89	4.19	7.83	-3.64	7.76	7.31	0.45	29.04	11.99	17.05
43 Worcester Grp	Mmang	Dec	90	91	2.37	13.45	-11.08	17.58	15.08	2.50	22.07	23.21	-1.14

Average income gearing ratios:

For equity issues:	41.72	36.58	5.14	17.98	40.52	-17.95	21.55	54.01	-35.96
For debt issues:	18.03	16.62	1.41	-16.32	24.28	-1.17	25.43	23.73	2.34
For convertible issues:	3.28	10.64	-7.36	12.67	11.20	1.47	25.56	17.60	7.96

Income gearing has been calculated as:

(Interest/Earnings before interest and tax) x 100

is 23.11% if the unusual figure of -450.00 is excluded, this would then compare with an industry average income gearing of 24.28%. So these figures tend to be much more in line with industry average income gearing ratios. This would appear to suggest that the companies which issued equity tend to keep below industry average income gearing ratios, whilst those issuing debt tend to be slightly above industry average interest gearing ratios. Whilst it is of course dangerous to argue from the general to the particular given the relatively small differences in the averages, the view expressed in the previous sentence is supported by the statistical findings shown in Table 7.9B, and discussed below.

7-3-4 Income Gearing Ratios for Hypothetical Issues and Industry Sector

A comparison of industry income gearing ratios and income gearing ratios that would have arisen if the hypothetical issues had been made is shown in Table 7.6.

The average income gearing ratio for the equity issuing group, if they had chosen to issue debt instead, is 28.82% for Yr 0 and 35.68% for Yr +1,

TABLE 7.6 : COMPARISON OF INTEREST GEARING RATIOS - HYPOTHETICAL ISSUE
COMPARED TO INDUSTRY SECTOR

Company	Ind Sec	Mth	Yr 0	Yr 1	Hyp.IG Yr0(X)	Ind.IG Yr0 (X)	Diff.bet.Ind. & Hyp.Yr0	Hyp.IG Yr+1(X)	Ind.IG Yr+1(X)	Diff.bet.Co. & Hyp.(Yr+1)
1 Anglia Secure Homes	House	Sep	90	91	-501.38	42.11	543.49	-70.92	330.10	401.02
2 Bimac	Missu	Mar	92	93	25.97	n/av	n/av	n/av	n/av	n/av
3 Bowater	Packp	Dec	90	91	38.64	21.13	-17.51	43.65	24.44	-19.21
4 Bouthorpe	Eletr	Dec	87	88	5.68	6.33	0.65	16.34	6.95	-9.39
5 Casket	Gentr	Mar	91	92	113.60	20.20	-93.40	67.94	n/av	n/av
6 Cater Allen	Disct	Apr	91	92	n/av	n/av	n/av	n/av	n/av	n/av
7 Community Hospital Grp	Hlthc	Jun	91	92	4.99	23.59	18.60	n/av	n/av	n/av
8 Cookson Grp	Oindm	Dec	91	92	54.69	17.45	-37.24	n/av	n/av	n/av
9 De La Rue	Print	Mar	92	93	21.34	n/av	n/av	n/av	n/av	n/av
10 Domino Printing	Print	Oct	91	92	6.09	21.44	15.37	n/av	n/av	n/av
11 Eurotunnel	Trftr	Dec	90	91	102.79	35.59	-67.20	121.21	47.63	-73.58
12 Jeyes	Perah	Dec	89	90	30.34	15.39	-14.95	37.13	20.17	-16.96
13 Kuik Fit	Mdist	Feb	89	90	20.55	38.36	17.81	43.51	59.29	15.78
14 Lovell, Y.J.	Cnstr	Sep	91	92	-55.54	291.85	347.39	n/av	n/av	n/av
15 Midland Bank	Banks	Dec	87	88	-69.00	37.85	106.85	30.64	15.40	-15.24
16 Regalian	Prope	Mar	92	93	n/av	n/av	n/av	n/av	n/av	n/av
17 Renold	Mmng	Mar	85	86	50.55	22.25	-28.30	43.61	17.43	-26.18
18 Richards	Txmia	Sep	89	90	25.72	20.54	-5.18	21.21	26.50	5.29
19 Sketchley	Laund	Mar	91	92	740.14	35.18	-704.96	64.32	n/av	n/av
20 Tay Homes	House	Jun	87	88	8.25	14.28	6.03	19.12	10.63	-8.49
21 Tibbet & Britten	Trftr	Dec	89	90	23.61	25.33	1.72	26.10	35.59	9.49
22 Westbury	House	Feb	92	93	-70.63	n/av	n/av	n/av	n/av	n/av
23 Allied Lyons	Brews	Feb	89	90	22.65	22.56	-0.09	19.59	24.44	4.85
24 Asda	Fdret	Apr	87	88	0.10	4.90	4.80	1.24	5.21	3.97
25 Asda	Fdret	Apr	89	90	0.31	8.45	8.14	20.04	13.91	-6.13
26 Bass	Brews	Sep	89	90	11.07	22.56	11.49	21.77	24.44	2.67
27 Blue Circle	Cment	Dec	88	89	16.11	14.21	-1.90	13.80	15.98	2.18
28 British Land	Prope	Mar	87	88	n/av	n/av	n/av	n/av	n/av	n/av
29 British Land	Prope	Mar	92	93	n/av	n/av	n/av	n/av	n/av	n/av
30 British Steel	Steel	Mar	92	93	-320.62	n/av	n/av	n/av	n/av	n/av
31 City Site Estates	Prope	Sep	87	88	n/av	n/av	n/av	n/av	n/av	n/av
32 Dares Estates	Prope	Dec	87	88	n/av	n/av	n/av	n/av	n/av	n/av
33 Forte	Hotel	Jan	90	91	24.74	28.80	4.06	30.78	41.56	10.78
34 Land Securities	Prope	Mar	87	88	n/av	n/av	n/av	n/av	n/av	n/av
35 Lams	Oilap	Dec	86	87	81.08	70.44	-10.64	41.42	26.53	-14.89
36 Lams	Oilap	Dec	89	90	29.13	28.43	-0.70	32.48	26.91	-5.57
37 MEPC	Prope	Sep	86	87	n/av	n/av	n/av	n/av	n/av	n/av
38 Taylor Woodrow	Cnstr	Dec	89	90	14.22	19.98	5.76	21.32	33.86	12.54
39 Vaux	Brews	Sep	89	90	9.01	22.56	13.55	4.16	24.44	20.28
40 Whitbread	Brews	Feb	91	92	13.93	24.16	10.23	13.56	n/av	n/av
41 Helical Bar	Prope	Jan	88	89	n/av	n/av	n/av	n/av	n/av	n/av
42 Next	Multa	Jan	88	89	5.71	7.31	1.60	22.49	11.99	-10.50
43 Worcester Grp	Mmng	Dec	90	91	17.58	15.08	-2.50	22.07	23.21	1.14

Average income gearing ratios:

For equity issues:	28.82	40.52	5.24	35.68	54.01	23.87
For debt issues:	-8.19	24.28	4.06	20.01	23.73	3.07
For convertible issues:	11.65	11.20	-0.45	22.28	17.60	-4.68

Interest gearing has been calculated as:

(Interest/Earnings before interest and tax) x 100

these compare with industry income gearing ratios for the group of 40.52% and 54.01%, which are considerably higher. For debt issuing companies, if they had reconstructed with equity, then the income gearing ratio would have been -8.19% for Yr 0 (20.21% if the income gearing for British Steel of -320.62% is omitted) and 20.01% for Year +1, compared to 24.28% and 23.73% for the industry income gearing ratios for the group. The convertible issues group are very similar to the industry income gearing in Yr 0, differing slightly, being 4.68% more, in Yr +1.

7-3-5 Interest Cover Ratios for Actual and Hypothetical Issues

Another measure often used in relation to interest is the interest cover ratio, calculated as:

$$\frac{\text{Earnings before interest + Tax}}{\text{Interest}}$$

A comparison of the interest cover on the actual and hypothetical issues is made in Table 7.7.

It is interesting to note that the average interest cover in Yr -1 for those companies which

TABLE 7.7 : COMPARISON OF INTEREST COVER RATIOS - ACTUAL COMPARED
TO HYPOTHETICAL ISSUE

Company	Ind Sec	Mth	Yr 0	Yr 1	Co.IC Yr-1	Co.IC Yr0	Hyp.IC Yr0	Diff.bet.Co.Co.IC & Hyp.Yr0	Yr+1	Hyp.IC Yr+1	Diff.bet.Co. & Hyp.(Yr+1)
1 Anglia Secure Homes	House	Sep	90	91	0.07	-0.21	-0.20	-0.01	-1.67	-1.41	-0.26
2 Bimec	Missu	Mar	92	93	8.64	6.03	3.85	2.18	n/av	n/av	n/av
3 Bowater	Packp	Dec	90	91	3.42	3.02	2.59	0.44	3.09	2.29	0.80
4 Bowthorpe	Eletr	Dec	87	88	23.96	33.99	17.59	16.40	30.46	6.12	24.34
5 Casket	Gentr	Mar	91	92	-0.04	1.08	0.88	0.20	2.07	1.47	0.59
6 Cater Allen	Disct	Apr	91	92	n/av	n/av	n/av	n/av	n/av	n/av	n/av
7 Community Hospital Grp	Hlthc	Jun	91	92	37.51	77.50	20.03	57.47	n/av	n/av	n/av
8 Cookson Grp	Oinda	Dec	91	92	2.46	2.27	1.83	0.45	n/av	n/av	n/av
9 De La Rue	Print	Mar	92	93	5.06	8.12	4.69	3.44	n/av	n/av	n/av
10 Domino Printing	Print	Oct	91	92	10.45	16.43	16.43	0.00	n/av	n/av	n/av
11 Eurotunnel	Trftr	Dec	90	91	1.01	1.00	0.97	0.03	1.00	0.83	0.17
12 Jeyes	Persh	Dec	89	90	3.11	3.30	3.30	0.00	6.20	2.69	3.50
13 Kwik Fit	Mdist	Feb	89	90	14.65	16.75	4.87	11.88	4.09	2.30	1.79
14 Lovell, Y.J.	Cnstr	Sep	91	92	2.43	-2.05	-1.80	-0.25	n/av	n/av	n/av
15 Midland Bank	Banks	Dec	87	88	3.19	-1.64	-1.45	-0.19	4.57	3.26	1.31
16 Regalian	Props	Mar	92	93	n/av	n/av	n/av	n/av	n/av	n/av	n/av
17 Renold	Mmng	Mar	85	86	1.00	1.98	1.98	0.00	3.05	2.29	0.76
18 Richards	Txmis	Sep	89	90	30.58	5.74	3.89	1.85	13.19	4.72	8.47
19 Sketchley	Laund.	Mar	91	92	0.77	0.17	0.14	0.04	3.02	1.55	1.46
20 Tay Homes	House	Jun	87	88	5.30	12.12	12.12	0.00	13.47	5.23	8.24
21 Tibbet & Britten	Trftr	Dec	89	90	9.52	8.50	4.24	4.27	8.01	3.83	4.18
22 Westbury	House	Feb	92	93	0.09	-1.89	-1.42	-0.47	n/av	n/av	n/av
23 Allied Lyons	Brews	Feb	89	90	4.01	4.41	4.41	0.00	4.36	5.10	-0.74
24 Asda	Fdret	Apr	87	88	119.86	961.00	961.00	0.00	80.74	80.74	0.00
25 Asda	Fdret	Apr	89	90	80.74	130.79	323.99	-193.20	3.90	4.99	-1.09
26 Bass	Brews	Sep	89	90	10.95	7.78	9.03	-1.25	3.94	4.59	-0.65
27 Blue Circle	Cment	Dec	88	89	4.88	6.00	6.21	-0.21	5.15	7.25	-2.09
28 British Land	Props	Mar	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av
29 British Land	Props	Mar	92	93	n/av	n/av	n/av	n/av	n/av	n/av	n/av
30 British Steel	Steel	Mar	92	93	12.04	-0.22	-0.31	0.09	n/av	n/av	n/av
31 City Site Estates	Props	Sep	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av
32 Dares Estates	Props	Dec	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av
33 Forte	Hotel	Jan	90	91	4.80	3.60	4.04	-0.44	2.90	3.25	-0.35
34 Land Securities	Props	Mar	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av
35 Lasso	Oilep	Dec	86	87	4.59	1.12	1.23	-0.11	2.06	2.41	-0.36
36 Lasso	Oilep	Dec	89	90	1.50	2.57	3.43	-0.87	2.45	3.08	-0.63
37 MEPC	Props	Sep	86	87	n/av	n/av	n/av	n/av	n/av	n/av	n/av
38 Taylor Woodrow	Cnstr	Dec	89	90	10.31	6.41	7.03	-0.62	4.27	4.69	-0.42
39 Vaux	Brews	Sep	89	90	8.74	6.75	11.10	-4.35	5.32	24.05	-18.73
40 Whitbread	Brews	Feb	91	92	4.77	6.81	7.18	-0.37	5.19	7.37	-2.18
41 Helical Bar	Props	Jan	88	89	n/av	n/av	n/av	n/av	n/av	n/av	n/av
42 Next	Mults	Jan	88	89	23.88	12.89	17.51	-4.62	3.44	4.45	-1.00
43 Worcester Grp	Mmng	Dec	90	91	42.24	5.69	5.69	0.00	4.53	4.53	0.00

Average income cover ratios:

For equity issues:	8.16	9.61	4.73	4.89	6.96	2.71	4.26
For debt issues:	22.27	94.75	111.53	-16.78	10.94	13.41	-2.48
For convertible issues:	33.06	9.29	11.60	-2.31	3.99	4.49	-0.50

Interest cover has been calculated as:

Earnings before interest and tax /Interest

(including any change in interest for hypothetical issues).


subsequently issued equity is the lowest of all types of issue, being 8.16 compared to debt 22.27 and convertibles 33.06. The average interest cover for those companies which made equity issues is nearly double the value it would have been on a reconstruction for debt in Yr 0, and over double in Yr +1.

The average interest cover for those companies which issued debt actually increased in Yr 0, jumping from 22.27 in Yr -1, to 94.75. This increase in average interest cover is attributable to Asda which capitalised much of its interest in this period, thus reducing the amount of interest passing through the profit and loss account, and hence increasing interest cover. Interest cover would have increased slightly for the convertible issues if equity had been issued instead.

The caveat should be made that the average interest cover ratios should be interpreted with caution due to possible aggregation problems.

The averaging of individual companies' interest cover ratios may not produce representative results due to scale problems. This is illustrated in the example below:

Example:

	<u>Firms</u>			
	(A)	(B)	(C)	AGGREG.
	£	£	£	£
EBIT	1000	100	10	1110
INTEREST	<u>100</u>	<u>1</u>	<u>5</u>	<u>106</u>
INTEREST				
COVER	10	100	2	10.47
				
AVERAGE				
INT. COVER		37.33		10.47

The average interest cover ratios for each of equity, debt and convertible issues were recalculated on an aggregate basis and the results are shown in Table 7.7B.

Whilst the absolute figures are different for the average interest cover ratios shown in Table 7.7B (aggregate basis) compared to those in Table 7.7 (non-aggregate basis), the overall trend of the ratios is the same with the interest cover being lowest in Yr-1 for those companies which subsequently issued equity.

Figs. 7.8 and 7.9 show the distribution of

TABLE 7.7B : AVERAGE INTEREST COVER RATIOS BASED ON AGGREGATE DATA

	Co. IC Yr-1	Co. IC Yr0	Hyp. IC Yr0	Co. IC Yr+1	Hyp. IC Yr+1
Equity issues	2.71	0.50	0.44	2.42	1.85
Debt issues	6.68	5.62	6.81	4.51	5.79
Conv. issues	25.56	12.21	18.85	3.50	4.45

Interest cover has been calculated as:

Total earnings before interest and tax/Total interest

(including any change in interest for hypothetical issues)

Note: Co. IC = actual interest cover

Hyp.IC = interest cover incorporating the hypothetical reconstruction

Yr-1 = year prior to capital issue

Yr 0 = year of capital issue

Yr+1 = year following capital issue

interest cover ratios for the equity issuing companies and debt issuing companies respectively.

Fig. 7.8 highlights that many of the equity issuing companies have low interest cover; and that for some companies a debt issue would have resulted in a substantial drop in interest cover.

Fig. 7.9 illustrates that the interest cover ratios for the debt issuing companies are mainly 'bunched' between 2 and 12 times, with a couple of extreme outliers.

Fig. 7.10 combines the information from Figs. 7.8 and 7.9. It shows the change in interest cover ratios for both companies issuing equity and those issuing debt. On the vertical axis is the interest cover for Yr-1 for all the companies, whilst the interest cover after the capital issue is shown on the horizontal axis, with equity issues on the right of the y axis and debt issues on the left.

The interest cover ratios for the equity issuing companies would seem to be more variable than those for the debt issuing companies. The lower interest cover of the equity issuing companies

FIG. 7.8 : INTEREST COVER RATIOS FOR EQUITY ISSUING COMPANIES

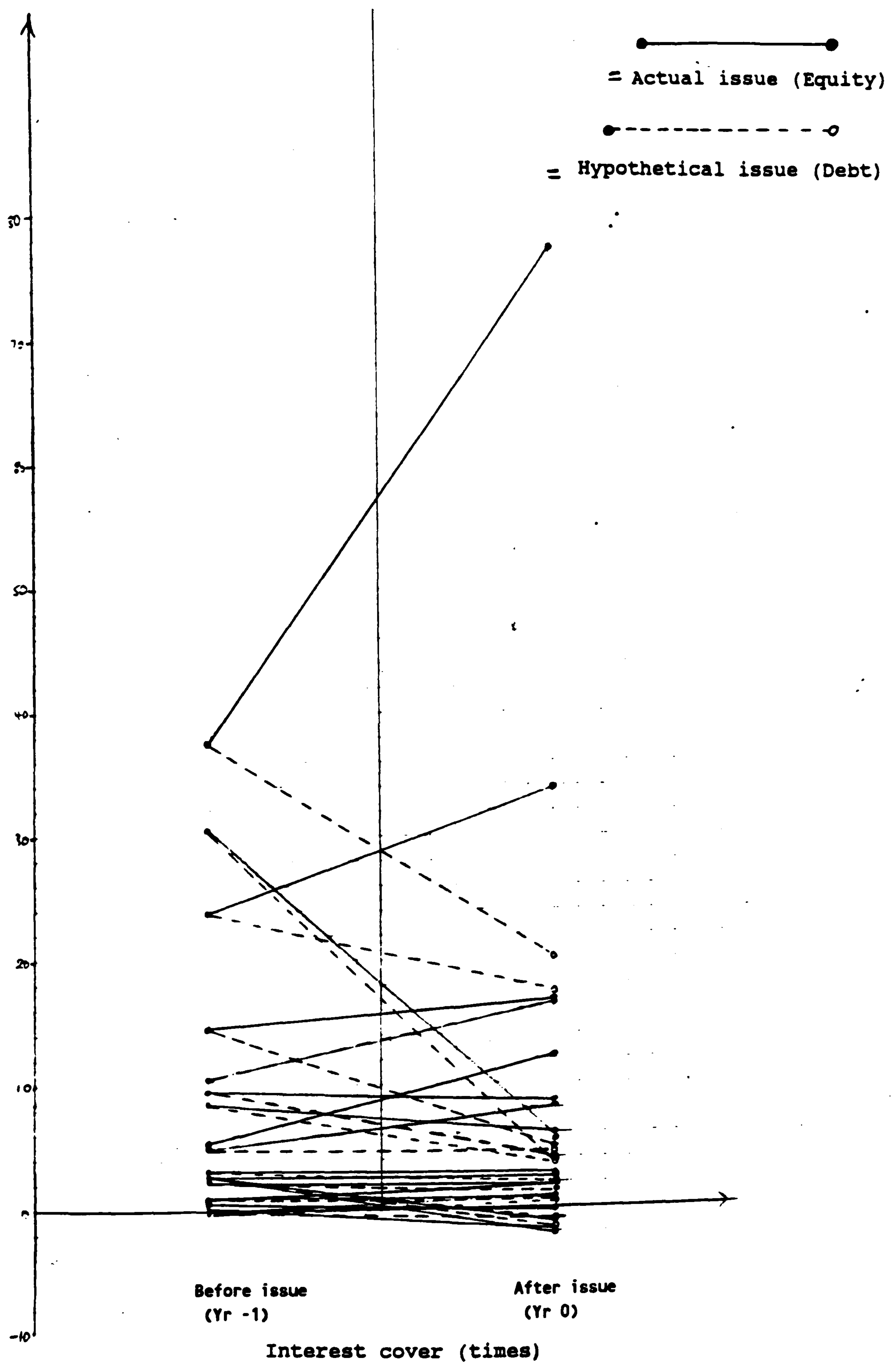


FIG. 7.9 : INTEREST COVER RATIOS FOR DEBT ISSUING COMPANIES

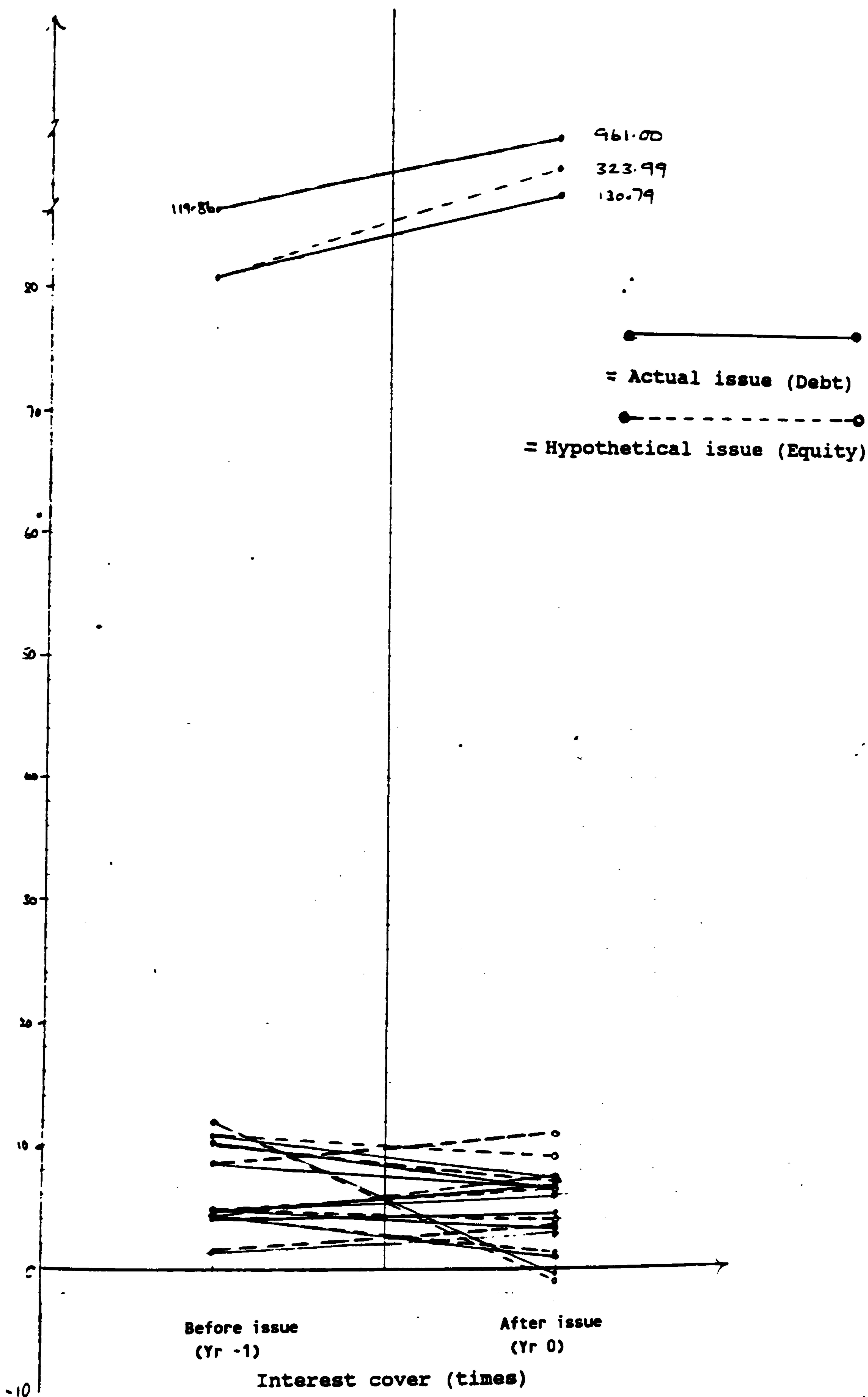
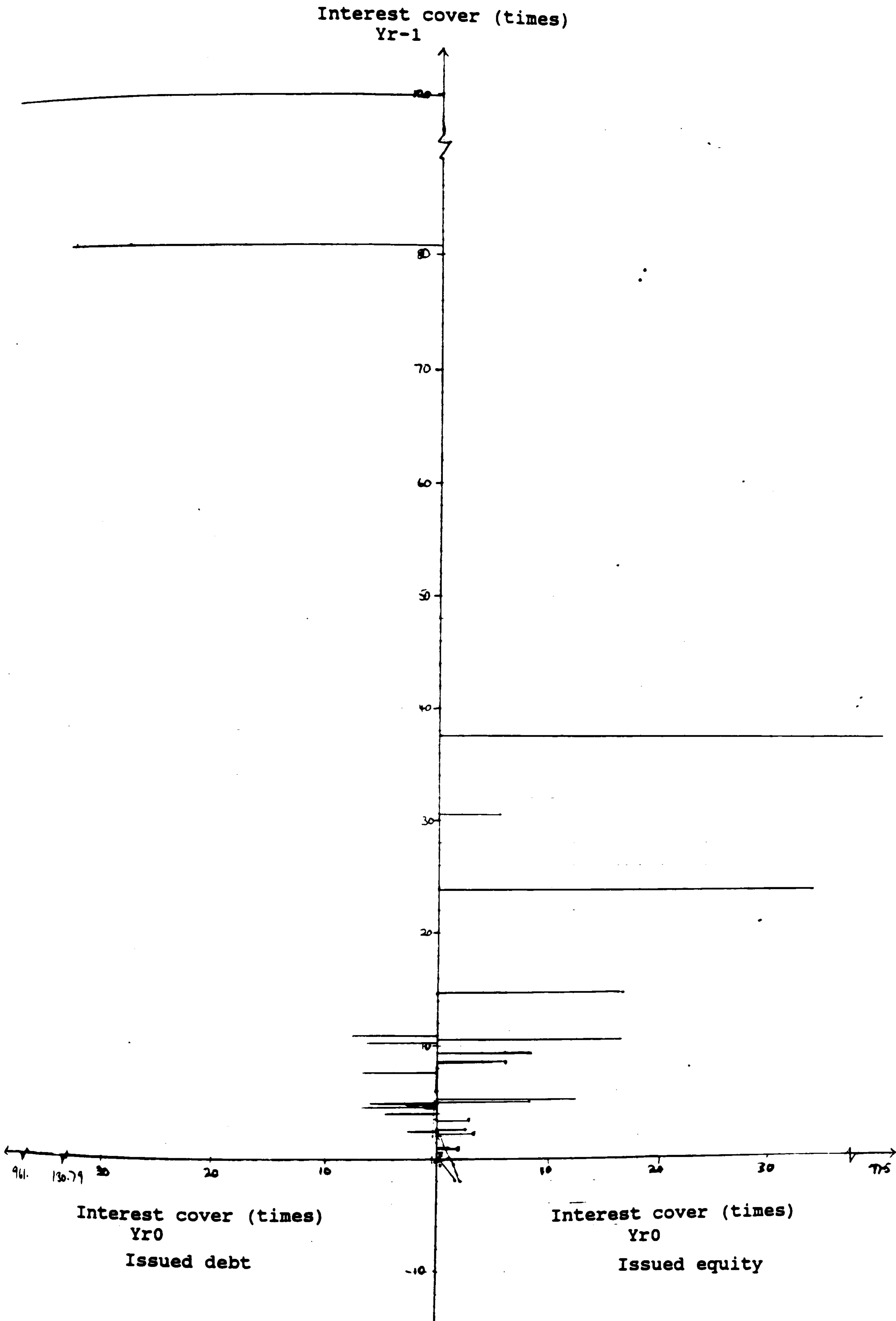


FIG. 7.10 : INTEREST COVER RATIOS FOR EQUITY AND DEBT ISSUING COMPANIES



may be indicative of financial distress, and would be in accord with the premise mentioned in earlier chapters, that companies tend to issue equity when they are experiencing financial difficulties.

7-3-6 Interest Cover Ratios for Actual Issues and Industry Sector

A comparison of the actual interest cover ratios compared to the industry sector interest cover ratios (Table 7.8) shows that the companies in the sample tended to have an average interest cover ratio in excess of the average industry interest cover. This was particularly the case for debt issues.

This would seem to imply that the debt issuing companies in particular do not wish to have an interest cover ratio below their industry average.

7-3-7 Interest Cover Ratios for Hypothetical Issues and Industry Sector

Finally, Table 7.9 compares the hypothetical interest cover to the industry sector. The average interest cover for the debt remains high,

TABLE 7.8 : COMPARISON OF INTEREST COVER RATIOS - ACTUAL COMPARED TO INDUSTRY SECTOR

Company	Ind Sec	Mth	Year		Co.IC	Ind.IC	Diff.bet.Co.Co.IC		Ind.IC	Diff.bet.Co.Co.IC		Ind.IC	Diff.bet.
			0	1			&Ind. Yr-1	Yr0		&Ind. Yr0	Yr+1		Co.&Ind.(Yr+1)
1 Anglia Secure Homes	House	Sep	90	91	0.07	5.66	-5.59	-0.21	2.37	-2.58	-1.67	0.30	-1.97
2 Bimac	Missu	Mar	92	93	8.64	3.78	4.86	6.03	n/av	n/av	n/av	n/av	n/av
3 Bowater	Packp	Dec	90	91	3.42	5.42	-2.00	3.02	4.73	-1.71	3.09	4.09	-1.00
4 Bouthorpe	Eletr	Dec	87	88	23.96	14.60	9.36	33.99	15.79	18.20	30.46	14.39	16.07
5 Casket	Centr	Mar	91	92	-0.04	5.09	-5.13	1.08	4.95	-3.87	2.07	n/av	n/av
6 Cater Allen	Disct	Apr	91	92	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
7 Community Hospital Grp	HLthc	Jun	91	92	37.51	4.25	33.26	77.50	4.24	73.26	n/av	n/av	n/av
8 Cookson Grp	Oinda	Dec	91	92	2.46	5.17	-2.71	2.27	5.73	-3.46	n/av	n/av	n/av
9 De La Rue	Print	Mar	92	93	5.06	4.66	0.40	8.12	n/av	n/av	n/av	n/av	n/av
10 Domino Printing	Print	Oct	91	92	10.45	5.50	4.95	16.43	4.66	11.77	n/av	n/av	n/av
11 Eurotunnel	Trftr	Dec	90	91	1.01	3.95	-2.94	1.00	2.81	-1.81	1.00	2.10	-1.10
12 Jeyes	Perah	Dec	89	90	3.11	8.26	-5.15	3.30	6.50	-3.20	6.20	4.96	1.24
13 Kuik Fit	Mdist	Feb	89	90	14.65	4.31	10.34	16.75	2.65	14.10	4.09	1.70	2.39
14 Lovell, Y.J.	Cnstr	Sep	91	92	2.43	2.95	-0.52	-2.05	0.34	-2.39	n/av	n/av	n/av
15 Midland Bank	Banks	Dec	87	88	3.19	4.65	-1.46	-1.64	2.64	-4.28	4.57	6.49	-1.92
16 Regalian	Props	Mar	92	93	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
17 Renold	Mang	Mar	85	86	1.00	3.51	-2.51	1.98	4.49	-2.51	3.05	5.74	-2.69
18 Richards	Txmis	Sep	89	90	30.58	6.33	24.25	5.74	4.87	0.87	13.19	3.77	9.42
19 Sketchley	Laund	Mar	91	92	0.77	2.73	-1.96	0.17	2.84	-2.67	3.02	n/av	n/av
20 Tay Homes	House	Jun	87	88	5.30	4.68	0.62	12.12	7.00	5.12	13.47	9.40	4.07
21 Tibbet & Britten	Trftr	Dec	89	90	9.52	8.80	0.72	8.50	3.95	4.55	8.01	2.81	5.20
22 Westbury	House	Feb	92	93	0.09	0.30	-0.21	-1.89	n/av	n/av	n/av	n/av	n/av
23 Allied Lyons	Brews	Feb	89	90	4.01	6.10	-2.09	4.41	4.43	-0.02	4.36	4.09	0.27
24 Asda	Fdret	Apr	87	88	119.86	16.92	102.94	961.00	20.41	940.59	80.74	19.19	61.55
25 Asda	Fdret	Apr	89	90	80.74	19.19	61.55	130.79	11.84	118.95	3.90	7.19	-3.29
26 Bass	Brews	Sep	89	90	10.95	6.10	4.85	7.78	4.43	3.35	3.94	4.09	-0.15
27 Blue Circle	Cment	Dec	88	89	4.88	6.59	-1.71	6.00	7.04	-1.04	5.15	6.26	-1.11
28 British Land	Props	Mar	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
29 British Land	Props	Mar	92	93	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
30 British Steel	Steel	Mar	92	93	12.04	7.54	4.50	-0.22	n/av	n/av	n/av	n/av	n/av
31 City Site Estates	Props	Sep	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
32 Dares Estates	Props	Dec	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
33 Forte	Notel	Jan	90	91	4.80	3.71	1.09	3.60	3.47	0.13	2.90	2.41	0.49
34 Land Securities	Props	Mar	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
35 Lasso	Oilcp	Dec	86	87	4.59	7.51	-2.92	1.12	1.42	-0.30	2.06	3.77	-1.71
36 Lasso	Oilcp	Dec	89	90	1.50	3.13	-1.63	2.57	3.52	-0.95	2.45	3.72	-1.27
37 MEPC	Props	Sep	86	87	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
38 Taylor Woodrow	Cnstr	Dec	89	90	10.31	7.15	3.16	6.41	5.00	1.41	4.27	2.95	1.32
39 Vaux	Brews	Sep	89	90	8.74	6.10	2.64	6.75	4.43	2.32	5.32	4.09	1.23
40 Whitbread	Brews	Feb	91	92	4.77	4.09	0.68	6.81	4.14	2.67	5.19	n/av	n/av
41 Helical Bar	Props	Jan	88	89	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
42 Next	Mults	Jan	88	89	23.88	12.77	11.11	12.89	13.68	-0.79	3.44	8.34	-4.90
43 Worcester Grp	Mang	Dec	90	91	42.24	7.44	34.80	5.69	6.63	-0.94	4.53	4.31	0.22

Average interest cover ratios:

For equity issues:	8.16	5.23	2.93	9.61	4.74	5.85	6.96	5.07	2.70
For debt issues:	22.27	7.84	14.42	94.75	6.38	97.01	10.94	5.78	5.73
For convertible issues:	33.06	10.11	22.95	9.29	10.16	-0.87	3.99	6.33	-2.34

If the unusually large interest cover figures for Asda of 961 and 130.79 are excluded, then the interest cover is:

4.52

Interest cover has been calculated as:

Earnings before interest and tax/Interest

TABLE 7.9 : COMPARISON OF INTEREST COVER RATIOS - HYPOTHETICAL ISSUE
COMPARED TO INDUSTRY SECTOR

Company	Ind Sec	Mth	Yr 0	Yr 1	Ind.IC Yr-1 (%)	Hyp.IC Yr0(%)	Ind.IC Yr0 (%)	Diff.bet.Ind. IC & Hyp.Yr0	Hyp.IC Yr+1(%)	Ind.IC Yr+1(%)	Diff.bet.Ind. IC & Hyp.(Yr+1)
1 Anglia Secure Homes	House	Sep	90	91	5.66	-0.20	2.37	2.57	-1.41	0.30	1.71
2 Bimac	Missu	Mar	92	93	3.78	3.85	n/av	n/av	n/av	n/av	n/av
3 Bowater	Packp	Dec	90	91	5.42	2.59	4.73	2.14	2.29	4.09	1.80
4 Bouthorpe	Eletr	Dec	87	88	14.6	17.59	15.79	-1.80	6.12	14.39	8.27
5 Casket	Gentr	Mar	91	92	5.09	0.88	4.95	4.07	1.47	n/av	n/av
6 Cater Allen	Disct	Apr	91	92	n/av	n/av	n/av	n/av	n/av	n/av	n/av
7 Community Hospital Grp	Hlthc	Jun	91	92	4.25	20.03	4.24	-15.79	n/av	n/av	n/av
8 Cookson Grp	Oinda	Dec	91	92	5.17	1.83	5.73	3.90	n/av	n/av	n/av
9 De La Rue	Print	Mar	92	93	4.66	4.69	n/av	n/av	n/av	n/av	n/av
10 Domino Printing	Print	Oct	91	92	5.5	16.43	4.66	-11.77	n/av	n/av	n/av
11 Eurotunnel	Trfrt	Dec	90	91	3.95	0.97	2.81	1.84	0.83	2.10	1.27
12 Jeyes	Persh	Dec	89	90	8.26	3.30	6.50	3.20	2.69	4.96	2.27
13 Kwik Fit	Mdist	Feb	89	90	4.31	4.87	2.65	-2.22	2.30	1.70	-0.60
14 Lovell, Y.J.	Cnstr	Sep	91	92	2.95	-1.80	0.34	2.14	n/av	n/av	n/av
15 Midland Bank	Banks	Dec	87	88	4.65	-1.45	2.64	4.09	3.26	6.49	3.23
16 Regalian	Props	Mar	92	93	n/av	n/av	n/av	n/av	n/av	n/av	n/av
17 Renold	Mmeng	Mar	85	86	3.51	1.98	4.49	2.51	2.29	5.74	3.45
18 Richards	Txmis	Sep	89	90	6.33	3.89	4.87	0.98	4.72	3.77	-0.95
19 Sketchley	Laund	Mar	91	92	2.73	0.14	2.84	2.70	1.55	n/av	n/av
20 Tay Homes	House	Jun	87	88	4.68	12.12	7.00	-5.12	5.23	9.40	4.17
21 Tibbet & Britten	Trfrt	Dec	89	90	8.8	4.24	3.95	-0.29	3.83	2.81	-1.02
22 Westbury	House	Feb	92	93	0.3	-1.42	n/av	n/av	n/av	n/av	n/av
23 Allied Lyons	Brews	Feb	89	90	6.1	4.41	4.43	0.02	5.10	4.09	-1.01
24 Asda	Fdret	Apr	87	88	16.92	961.00	20.41	-940.59	80.74	19.19	-61.55
25 Asda	Fdret	Apr	89	90	19.19	323.99	11.84	-312.15	4.99	7.19	2.20
26 Bass	Brews	Sep	89	90	6.1	9.03	4.43	-4.60	4.59	4.09	-0.50
27 Blue Circle	Cment	Dec	88	89	6.59	6.21	7.04	0.83	7.25	6.26	-0.99
28 British Land	Props	Mar	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av
29 British Land	Props	Mar	92	93	n/av	n/av	n/av	n/av	n/av	n/av	n/av
30 British Steel	Steel	Mar	92	93	7.54	-0.31	n/av	n/av	n/av	n/av	n/av
31 City Site Estates	Props	Sep	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av
32 Dares Estates	Props	Dec	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av
33 Forte	Hotel	Jan	90	91	3.71	4.04	3.47	-0.57	3.25	2.41	-0.84
34 Land Securities	Props	Mar	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av
35 Lasso	Oilep	Dec	86	87	7.51	1.23	1.42	0.19	2.41	3.77	1.36
36 Lasso	Oilep	Dec	89	90	3.13	3.43	3.52	0.09	3.08	3.72	0.64
37 MEPC	Props	Sep	86	87	n/av	n/av	n/av	n/av	n/av	n/av	n/av
38 Taylor Woodrow	Cnstr	Dec	89	90	7.15	7.03	5.00	-2.03	4.69	2.95	-1.74
39 Vaux	Brews	Sep	89	90	6.1	11.10	4.43	-6.67	24.05	4.09	-19.96
40 Whitbread	Brews	Feb	91	92	4.09	7.18	4.14	-3.04	7.37	n/av	n/av
41 Helical Bar	Props	Jan	88	89	n/av	n/av	n/av	n/av	n/av	n/av	n/av
42 Next	Mults	Jan	88	89	12.77	17.51	13.68	-3.83	4.45	8.34	3.89
43 Worcester Grp	Mmeng	Dec	90	91	7.44	5.69	6.63	0.94	4.53	4.31	-0.22

Average income cover ratios:

For equity issues:	5.23	4.73	4.74	-0.40	2.71	5.07	2.15
For debt issues:	7.84	111.53	6.38	-115.32	13.41	5.78	-8.24
For convertible issues:	10.11	11.60	10.16	-1.44	4.49	6.33	1.84

Interest cover has been calculated as:

Earnings before interest and tax /Interest

(Any changes in interest arising from the hypothetical issues
have been taken into account).

due to the large interest cover ratios of Asda which arise as a result of capitalising the bulk of its interest payments. Otherwise, for the equity and convertible issues, the average interest cover would be slightly more than the average industry interest cover in the year of issue, and then in the year following the year of issue, would drop slightly below it.

As mentioned earlier, the average interest cover ratios based on aggregate data may be different to those calculated by averaging individual companies' interest cover ratios. Table 7.7B discussed previously shows that this is the case for the hypothetical issues, although the general trend is still the same, with the equity issuing companies having a lower average interest cover than the debt issuing companies.

7-3-8 Statistical Comparison of Income Gearing Measures for Equity and Debt Issues

The analysis above has highlighted some notable differences in income gearing ratios (IGs) and interest cover ratios (ICs) between companies which issued equity and those which issued debt.

The IGs for the year before the capital issue for

the companies which subsequently issued equity, and those which subsequently issued debt, were found to be significantly different from each other at the 1% level. The industry sector IGs were also significantly different for these two groups at the 1% level.

Similarly, the IC ratios for the year before the capital issue for the companies which subsequently issued equity, and those which subsequently issued debt, were found to be significantly different from each other at the 1% level. However, the industry sector ICs were not found to be significantly different for the two groups. The statistical analysis is summarised in Table 7.9B.

The above findings would seem to infer that examination of a company's IG and IC is useful in determining whether that company will choose to issue equity or debt, particularly if the industry sector IG is used in conjunction with the individual company's IG.

**TABLE 7.9B : STATISTICAL COMPARISON OF INCOME GEARING MEASURES
FOR EQUITY AND FOR DEBT ISSUES**

Paired 't' Test						

Source Table	Year -1	Sd(E)	Sd (D)	Se	Degrees of Freedom	Significance (based on 2tt)
Individual Companies						

7.5	IG (Orig. issue)	644.2113	16.0216	137.3982	30	0.01
7.8	IC (Orig. issue)	10.2107	31.1658	7.6616	30	0.01
Industry Sectors						

7.5	IG (Ind. Sec.)	65.3908	9.9546	14.1374	30	0.01
7.8	IC (Ind. Sec.)	3.0672	5.3945	1.4298	30	n/a

Note : IG = Income gearing ratio
IC = Income cover ratio

Sd(E) = standard deviation of IG, or IC, (Yr-1) for all the companies which issued equity in the following year

Sd(D) = standard deviation of IG, or IC, (Yr-1) for all the companies which issued debt in the following year

Se = standard error

n/a = not significant

7-4 Impact on Dividend Cover

7-4-1 Perceived Importance of Dividend Cover

The analysis of the capital issues questionnaire in Chapters 3 and 4 showed that the effect of a capital issue on a company's ability to maintain, or increase, its dividend level was considered to be an important factor in deciding on the type of capital issue.

7-4-2 Actual Dividend Per Share

Table 7.10 shows the dividend per share for each company in the sample for the year before issue, the year of issue and the year following issue. It is then assumed that the dividend per share for each particular year is to be maintained on the reconstruction.

7-4-3 Dividend Cover for Actual and Hypothetical Issues

When calculating the dividend cover for the reconstructions, it has been assumed that the dividend per share is maintained, although (as explained below) this will lead to a change in the aggregate dividend.

TABLE 7.10 : DIVIDEND PER SHARE UNDER ORIGINAL ISSUE

Company	Mth	Yr 0	Yr 1	Co.Div.P/ Sh.,Yr-1	Co.Div.P/ Sh.,Yr0	Co.Div.P/ Sh.,Yr+1
Anglia Secure Homes	Sep	90	91	0.00	0.00	0.00
Bimec	Mar	92	93	0.05	0.05	n/av
Bowater	Dec	90	91	0.58	0.47	0.47
Bowthorpe	Dec	87	88	0.36	0.12	0.15
Casket	Mar	91	92	0.00	0.00	0.02
Cater Allen	Apr	91	92	n/av	n/av	n/av
Community Hospital Grp	Jun	91	92	0.17	0.13	n/av
Cookson Grp	Dec	91	92	0.13	0.02	n/av
De La Rue	Mar	92	93	0.28	0.27	n/av
Domino Printing	Oct	91	92	0.21	0.29	n/av
Eurotunnel	Dec	90	91	0.00	0.00	n/av
Jeyes	Dec	89	90	0.12	0.16	0.19
Kwik Fit	Feb	89	90	0.12	0.07	0.06
Lovell, Y.J.	Sep	91	92	0.25	0.00	n/av
Midland Bank	Dec	87	88	1.04	0.00	0.75
Regalian	Mar	92	93	0.08	0.00	n/av
Renold	Mar	85	86	n/av	n/av	n/av
Richards	Sep	89	90	0.13	0.09	0.09
Sketchley	Mar	91	92	0.00	0.00	0.08
Tay Homes	Jun	87	88	n/av	0.27	0.47
Tibbet & Britten	Dec	89	90	0.16	0.17	0.22
Westbury	Feb	92	93	0.00	0.00	n/av
Allied Lyons	Feb	89	90	0.38	0.43	0.48
Asda	Apr	87	88	n/av	0.11	0.13
Asda	Apr	89	90	0.13	0.14	0.10
Bass	Sep	89	90	0.87	1.08	1.09
Blue Circle	Dec	88	89	0.48	0.57	0.29
British Land	Mar	87	88	n/av	n/av	0.17
British Land	Mar	92	93	0.11	0.11	n/av
British Steel	Mar	92	93	0.10	0.00	n/av
City Site Estates	Sep	87	88	n/av	0.04	0.15
Dares Estates	Dec	87	88	n/av	0.02	0.04
Forte	Jan	90	91	0.22	0.23	0.19
Land Securities	Mar	87	88	n/av	n/av	0.19
Lasmo	Dec	86	87	n/av	0.10	0.12
Lasmo	Dec	89	90	0.11	0.23	0.21
MEPC	Sep	86	87	n/av	n/av	0.17
Taylor Woodrow	Dec	89	90	0.41	0.23	0.17
Vaux	Sep	89	90	0.40	0.18	0.20
Whitbread	Feb	91	92	11.38	12.64	9.64
Helical Bar	Jan	88	89	0.98	0.22	0.46
Next	Jan	88	89	n/av	0.16	0.11
Worcester Grp	Dec	90	91	0.14	0.09	0.10
Average for equity issues:				0.18	0.11	0.23
Average for debt issues:				1.33	1.07	0.83
Average for convertible issues:				0.56	0.16	0.22

In a reconstruction from equity to debt, the aggregate dividend will be reduced (interest on debt being substituted for the dividend on the shares which the debt replaces). In a reconstruction from debt to equity, there will be an increase in the aggregate dividend (an increase in dividend now substituting for the interest on the debt which the share issue replaces).¹

Table 7.11 shows the effect on dividend cover of the reconstruction issue - in nearly every case, the alternative financing instrument would have resulted in a drop in dividend cover.

7-4-4 Statistical Analysis of Dividends and Dividend Cover

Table 7.11B shows that there is no statistically significant difference between the dividend per share for the equity issuing companies and the debt issuing companies; nor is there a significant difference for the dividend cover for equity issuing companies and debt issuing companies.

¹As expected the effect of a reconstruction of equity with debt results in an increase in expenses above the line (as interest is shown above the line); whilst in a reconstruction from debt to equity the effect is below the line (as dividends are below the line).

TABLE 7.11 : COMPARISON OF DIVIDEND COVER UNDER ORIGINAL ISSUE
AND HYPOTHETICAL ISSUE

Company	Mth	Yr 0	Yr 1	Co.Div Cov,Yr-1	Co.Div Cov,Yr0	Hyp.Div Cov,Yr0	Diff.Co. & Hyp.Yr0	Co.Div Cov,Yr+1	Hyp.Div Cov,Yr+1	Diff.Co.& Hyp.Yr+1
1 Anglia Secure Homes	Sep	90	91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 Bimac	Mar	92	93	3.49	3.11	1.09	2.02	n/av	n/av	n/av
3 Bowater	Dec	90	91	3.14	2.24	1.18	1.06	2.16	1.07	1.09
4 Bouthorpe	Dec	87	88	4.42	3.81	1.12	2.69	3.83	1.02	2.81
5 Casket	Mar	91	92	0.00	1.58	0.00	1.58	3.63	1.19	2.44
6 Cater Allen	Apr	91	92	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7 Community Hospital Grp	Jun	91	92	3.33	2.40	1.30	1.10	n/av	n/av	n/av
8 Cookson Grp	Dec	91	92	2.16	0.29	0.47	-0.18	n/av	n/av	n/av
9 De La Rue	Mar	92	93	2.03	1.89	1.16	0.73	n/av	n/av	n/av
10 Domino Printing	Oct	91	92	3.95	3.93	0.99	2.94	n/av	n/av	n/av
11 Eurotunnel	Dec	90	91	0.00	0.00	0.00	0.00	n/av	n/av	n/av
12 Jeyes	Dec	89	90	2.92	3.02	1.08	1.94	3.04	0.83	2.21
13 Kuik Fit	Feb	89	90	4.23	3.02	1.11	1.91	2.49	0.94	1.55
14 Lovell, Y.J.	Sep	91	92	2.76	0.00	0.00	0.00	n/av	n/av	n/av
15 Midland Bank	Dec	87	88	3.84	0.00	0.00	0.00	3.27	1.52	1.75
16 Regalian	Mar	92	93	1.89	0.00	0.00	0.00	n/av	n/av	n/av
17 Renold	Mar	85	86	0.00	0.00	*	*	2.25	*	2.25
18 Richards	Sep	89	90	2.62	2.28	1.01	1.27	2.29	1.03	1.26
19 Sketchley	Mar	91	92	0.00	0.00	0.00	0.00	2.59	0.90	1.69
20 Tay Homes	Jun	87	88	4.02	4.75	1.35	3.40	5.90	1.17	4.73
21 Tibbet & Britten	Dec	89	90	2.59	2.34	1.13	1.21	2.40	1.05	1.35
22 Westbury	Feb	92	93	0.00	0.00	0.00	0.00	n/av	n/av	n/av
23 Allied Lyons	Feb	89	90	2.90	2.86	0.90	1.96	2.80	0.93	1.87
24 Asda	Apr	87	88	2.81	3.24	0.93	2.31	3.06	0.88	2.18
25 Asda	Apr	89	90	3.06	3.00	0.95	2.05	2.17	1.03	1.14
26 Bass	Sep	89	90	3.71	3.84	0.92	2.92	3.48	0.95	2.53
27 Blue Circle	Dec	88	89	3.17	2.84	0.87	1.97	2.67	1.00	1.67
28 British Land	Mar	87	88	3.00	3.55	*	*	4.24	0.97	3.27
29 British Land	Mar	92	93	1.85	1.78	1.14	0.64	n/av	n/av	n/av
30 British Steel	Mar	92	93	1.10	0.00	0.00	0.00	n/av	n/av	n/av
31 City Site Estates	Sep	87	88	n/av	4.58	0.96	11.36	*	0.76	*
32 Dares Estates	Dec	87	88	n/av	3.29	0.90	2.39	3.20	0.94	2.26
33 Forte	Jan	90	91	2.61	2.68	0.98	1.70	1.90	0.98	0.92
34 Land Securities	Mar	87	88	n/av	n/av	*	*	1.52	0.99	0.53
35 Lasso	Dec	86	87	n/av	1.37	0.86	0.51	1.61	0.94	0.67
36 Lasso	Dec	89	90	1.16	2.02	0.98	1.04	2.49	1.02	1.47
37 MEPC	Sep	86	87	n/av	n/av	*	*	1.47	1.00	0.47
38 Taylor Woodrow	Dec	89	90	2.73	2.57	0.98	1.59	1.76	0.96	0.80
39 Vaux	Sep	89	90	2.47	2.37	0.89	1.48	2.25	0.95	1.30
40 Whitbread	Feb	91	92	2.89	2.89	0.04	2.85	2.10	0.04	2.06
41 Helical Bar	Jan	88	89	49.21	6.44	0.83	5.61	7.96	0.70	7.26
42 Next	Jan	88	89	2.30	2.72	0.95	1.77	1.46	1.01	0.45
43 Worcester Grp	Dec	90	91	3.64	2.23	0.35	1.88	2.43	0.44	1.99
Average for equity issues:				2.15	1.58	0.62	1.03	2.60	0.89	1.78
Average for debt issues:				2.57	2.68	0.82	2.32	2.45	0.90	1.54
Average for convertible issues:				18.38	3.80	0.71	3.09	3.95	0.71	3.24

**TABLE 7.11B : STATISTICAL COMPARISON OF DIVIDENDS AND DIVIDEND COVER
FOR EQUITY AND FOR DEBT ISSUES**

Paired 't' Test -----						
Source Table	Year -1	Sd(E)	Sd (D)	Se	Degrees of Freedom	Signif- icance (based on 2tt)
7.10	Div. per share	0.2377	2.5737	0.6087	38	n/a
7.11	Div. Cover	1.6105	1.3119	0.4621	37	n/a

Note : Sd(E) = standard deviation of Divs. (Yr-1) for all the companies
which issued equity in the following year

Sd(D) = standard deviation of Divs. (Yr-1) for all the companies
which issued debt in the following year

Se = standard error

n/a = not significant

7-5 Impact on Rates of Return

7-5-1 Influence of Rate of Return

The possibility that the rate of return may have a bearing on the finance issue question was raised briefly in Chapter 6. The study by Baumol et al (1970), for example, raised the possibility that funds from different sources may earn a different return, with new equity earning the highest return - a finding that was attributed by Baumol et al to the disciplining effect of the new issues market.

In order to see the rate of return as a possible explanatory variable for the method of finance chosen it is necessary only to reverse this argument - i.e. one might conjecture that a company may look to the rate of return on the proposed investment project to guide them in their choice of finance.

There are a number of problems with the Baumol et al analysis, in particular identifying the rate of return on the project rather than the firm as a whole.

The Baumol-type rate of return analysis has not been carried further as there are problems:

(i) retentions - Baumol et al treated retained earnings as cash (when of course profit is often very different from cash). If the earnings after tax are too high, then retained earnings (capital) will be too high, and this leads to a lower inferred rate of return. This is illustrated in the extract below:

Example:

	£	
EBIT	<u>1000</u>	
EAT	500	
less dividends	<u>(300)</u>	
Retained earnings	<u>200</u>	{not cash}

Return in cash = (Rate of return) (Capital)

$$\begin{array}{ccc}
 & \downarrow & \uparrow \\
 & & \\
 & = 12\% \times \text{£}1000 = \text{£}1200 & \text{or} \\
 & = 10\% \times \text{£}1200 = \text{£}1200 &
 \end{array}$$

(ii) comparing returns on debt and equity financed projects under conventional accounting makes the returns on debt look lower. An example will illustrate this point:

	<u>Equity</u>	<u>Debt</u>
	£	£
Existing earnings	1000	1000
New earnings	<u>100</u>	<u>100</u>
Total earnings	1100	1100
less interest	<u>0</u>	<u>10</u>
Profit before tax	1100	1090
Tax @ 50%	<u>(550)</u>	<u>(545)</u>
Net profit	<u>550</u>	<u>545</u>

Capital Employed:

Share capital

(£1 shares)	800	700
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Debenture	0	100
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Rate of return

(after int.& tax)	68.75%	68.13%
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Of course the difference in rates of return would be accentuated when larger earnings and interest figures were involved.

The rates of return for the companies in the sample were calculated as follows:

$$r = \frac{\text{Earnings before interest and tax} \times 100}{\text{Capital employed}}$$

The rate of return is better calculated on a before tax basis when performing a time series of the profitability of one company as tax rates change over time, and one is looking at the profitability of the underlying assets and not the vagaries of the tax system.

Perhaps for cross-sectional purposes tax should be included, as it is widely suggested in the literature that it may be an important factor in the debt-equity decision, for example, Modigliani and Miller (1963).

However, it was decided to exclude it in this instance because the object was to view the return on assets in the context of a steady state (since once put in place the finance would generally extend into the distant future) and incorporating the underlying current tax charge is likely to be distortionary since this is the product of past financial decisions.

In other words, the current tax charge is not simply a function of the existing finance arrangements. It reflects a range of taxable transactions, for example, the purchase of plant and equipment over the preceding years.

Also calculating the rate of return before interest and tax overcomes the problem discussed above relating to the distortionary effect of conventional accounting on the rate of return on debt.

7-5-2 Actual Rates of Return

The rates of return for each company for the year prior to the issue, the year of issue, and the year following are shown in Table 7.12.

The average rate of return for the equity issuing companies in Yr -1 is 16.10%, for debt issuing companies 14.13%, and for companies issuing convertibles 22.72%. For the year of issue, the equity issuing companies are still ahead of the debt issuing companies with an average return of 12.19%, compared to 11.79% for debt issuing companies; whilst companies issuing convertibles earn a return of 21.03%. This situation would appear to change in the year following the year of issue, with the equity issuing companies earning an average rate of return of 8.31% compared to 12.06% for the debt issuing companies. However, the average return for the equity issuing companies is distorted by the -58.89% return for Anglia Secure Homes; if this is

TABLE 7.12 : RATES OF RETURN

Company	Ind Sec	Mth	Year 0	Year 1	Rate of Ret.Yr-1	Rate of Ret.Yr0	Rate of Ret.Yr+1
1 Anglia Secure Homes	House	Sep	90	91	0.44	-2.82	-58.89
2 Bimec	Missu	Mar	92	93	56.45	36.58	n/av
3 Bowater	Packp	Dec	90	91	20.08	20.73	21.98
4 Bowthorpe	Eletr	Dec	87	88	39.39	28.36	38.20
5 Casket	Gentr	Mar	91	92	15.57	26.58	25.86
6 Cater Allen	Disct	Apr	91	92	n/av	n/av	n/av
7 Community Hospital Grp	Hlthc	Jun	91	92	9.36	8.90	n/av
8 Cookson Grp	Oindm	Dec	91	92	22.72	11.48	n/av
9 De La Rue	Print	Mar	92	93	36.05	20.91	n/av
10 Domino Printing	Print	Oct	91	92	24.79	30.16	n/av
11 Eurotunnel	Trftr	Dec	90	91	6.33	4.91	6.86
12 Jeyes	Persh	Dec	89	90	19.70	21.35	24.41
13 Kwik Fit	Mdist	Feb	89	90	32.57	24.50	21.28
14 Lovell, Y.J.	Cnstr	Sep	91	92	18.35	6.60	n/av
15 Midland Bank	Banks	Dec	87	88	12.98	-6.43	15.81
16 Regalian	Props	Mar	92	93	n/av	n/av	n/av
17 Renold	Mmeng	Mar	85	86	7.22	12.04	12.58
18 Richards	Txmis	Sep	89	90	23.26	11.29	9.59
19 Sketchley	Laund	Mar	91	92	5.99	8.63	20.04
20 Tay Homes	House	Jun	87	88	56.93	28.72	38.95
21 Tibbet & Britten	Trftr	Dec	89	90	27.09	18.67	26.15
22 Westbury	House	Feb	92	93	0.11	-9.73	n/av
23 Atlied Lyons	Brews	Feb	89	90	17.77	14.63	14.98
24 Asda	Fdret	Apr	87	88	33.06	24.01	19.31
25 Asda	Fdret	Apr	89	90	19.31	18.25	14.46
26 Bass	Brews	Sep	89	90	13.86	15.62	14.44
27 Blue Circle	Cment	Dec	88	89	14.31	16.89	18.66
28 British Land	Props	Mar	87	88	n/av	n/av	n/av
29 British Land	Props	Mar	92	93	n/av	n/av	n/av
30 British Steel	Steel	Mar	92	93	10.05	3.07	n/av
31 City Site Estates	Props	Sep	87	88	n/av	n/av	n/av
32 Dares Estates	Props	Dec	87	88	n/av	n/av	n/av
33 Forte	Hotel	Jan	90	91	8.41	7.82	7.42
34 Land Securities	Props	Mar	87	88	n/av	n/av	n/av
35 Lasmo	Oilep	Dec	86	87	20.80	7.52	10.41
36 Lasmo	Oilep	Dec	89	90	5.94	9.26	9.99
37 MEPC	Props	Sep	86	87	n/av	n/av	n/av
38 Taylor Woodrow	Cnstr	Dec	89	90	9.41	7.93	8.06
39 Vaux	Brews	Sep	89	90	6.46	6.82	7.52
40 Whitbread	Brews	Feb	91	92	10.14	9.70	7.42
41 Helical Bar	Props	Jan	88	89	n/av	n/av	n/av
42 Next	Mults	Jan	88	89	12.81	23.80	16.78
43 Worcester Grp	Mmeng	Dec	90	91	32.62	18.26	23.54
Average rate of return for equity:					16.10	12.19	8.31
Average rate of return for debt:					14.13	11.79	12.06
Average rate of return for convertibles:					22.72	21.03	20.16

excluded, then the average return for equity issuing companies is 21.81%. It is interesting to note that the companies issuing convertibles have a high rate of return, although the sample for convertibles is too small to enable reliable conclusions to be drawn.

The distribution of the rates of return is shown in Fig. 7.11 for equity issuing companies, and in Fig. 7.12 for debt issuing companies. In each figure, the rates of return are shown for the year prior to the capital issue (Yr-1), the year of the issue (Yr0), and the year following the issue (Yr+1).

The overall rate of return for the companies which issued equity tends to be (a) more volatile and (b) more widely spread, than the rate of return for companies which issued debt.

From Table 7.12B it can be seen that there is a statistically significant difference between the rate of return for the equity issuing companies and the debt issuing companies at the 1% level. This would seem to be supportive of the Baumol et al view.

FIG. 7.11 : RATES OF RETURN FOR EQUITY ISSUING COMPANIES

Rate of Return %

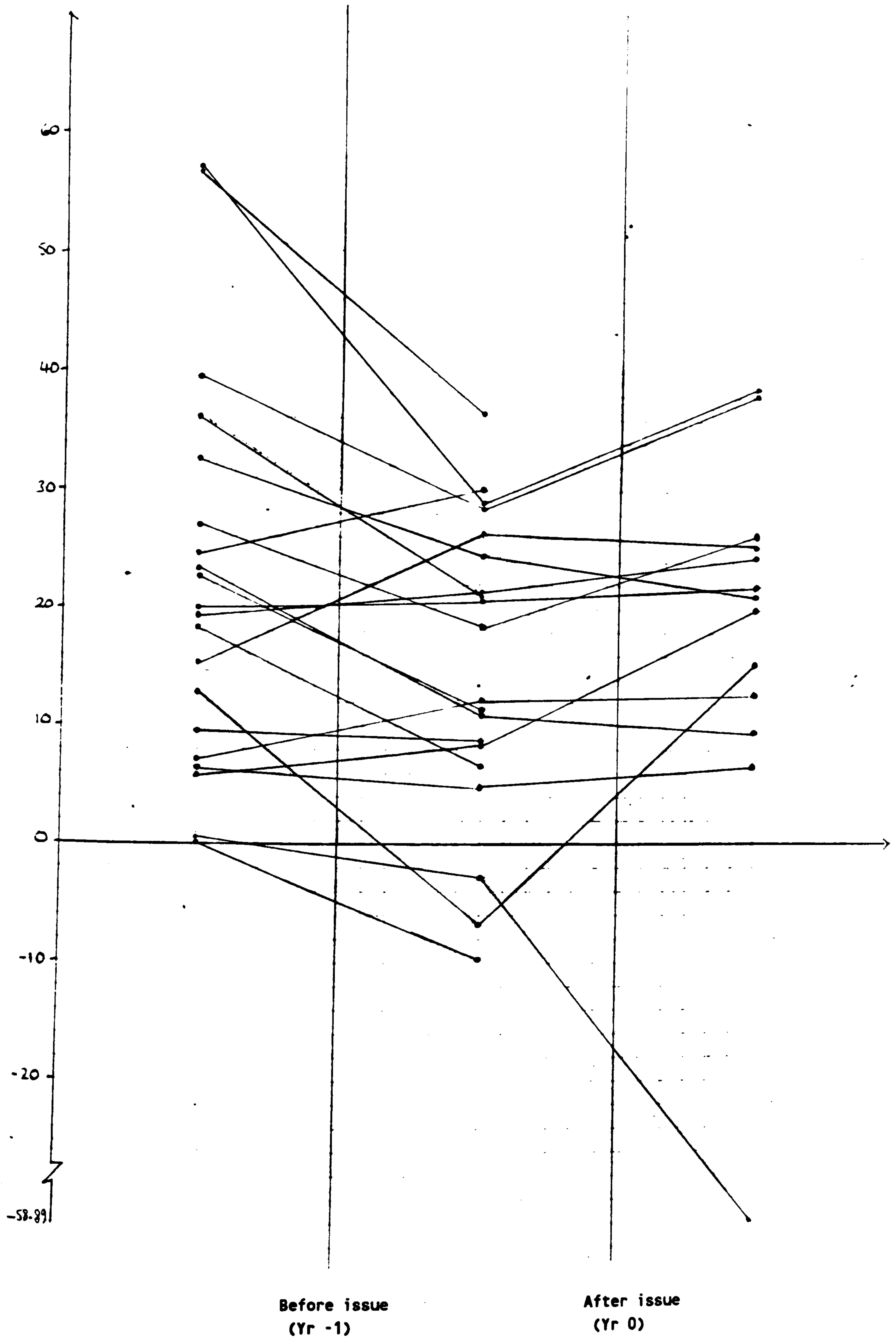
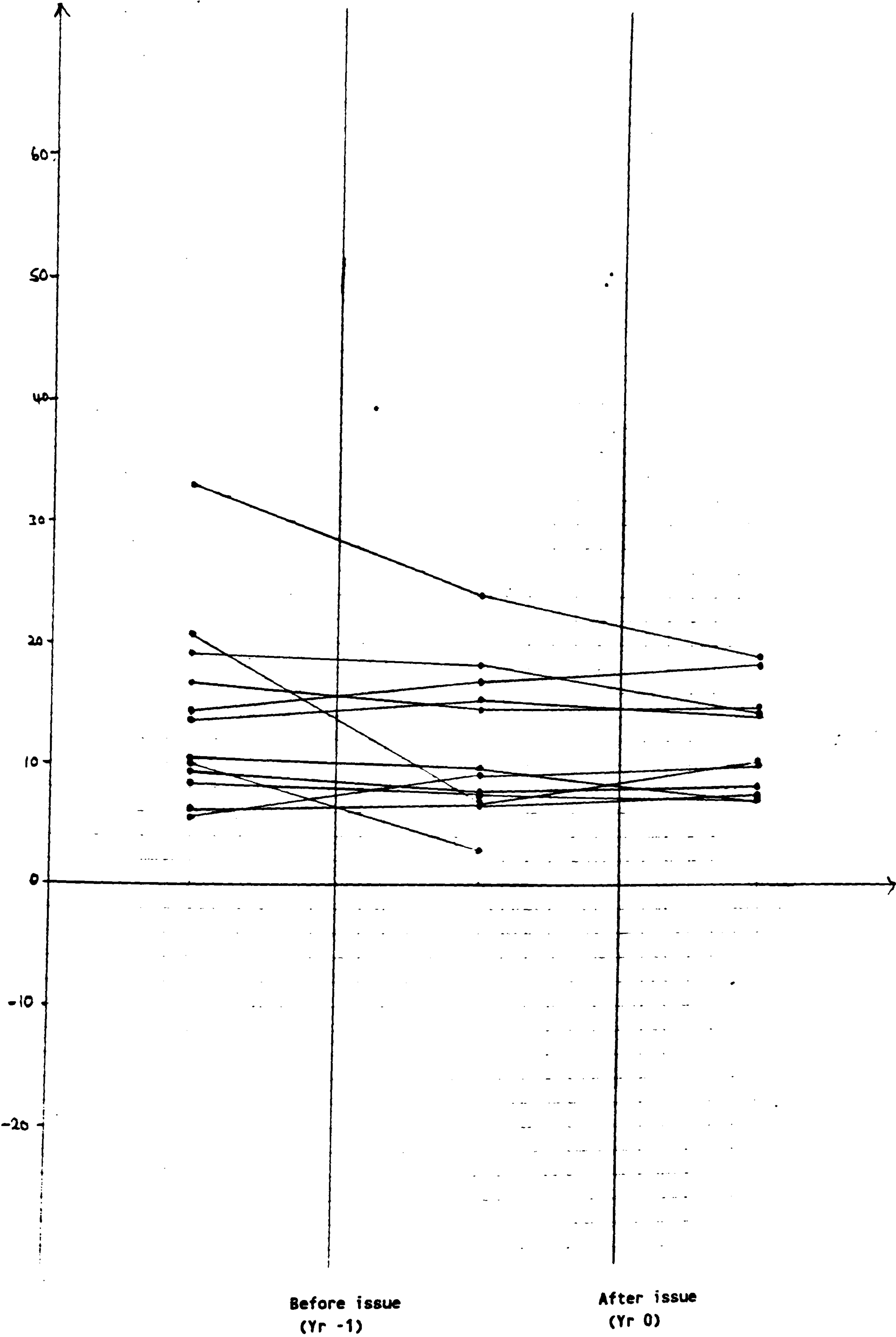


FIG. 7.12 : RATES OF RETURN FOR DEBT ISSUING COMPANIES

Rate of Return %



**TABLE 7.12B : STATISTICAL COMPARISON OF RATES OF RETURN
FOR EQUITY AND FOR DEBT ISSUES**

Paired 't' Test						

Source Table	Year -1	Sd(E)	Sd (D)	Se	Degrees of Freedom	Significance (based on 2tt)
7.12	Rates of Return	16.3517	8.9892	4.0796	30	.001

Note : Sd(E) = standard deviation of Rates of Return (Yr-1) for all the companies which issued equity in the following year

Sd(D) = standard deviation of Rates of Return (Yr-1) for all the companies which issued debt in the following year

Se = standard error

7-6 Influence of Cash Flow Ratio and Tax Ratio

7-6-1 Cash Flow Ratio

The "cash flow ratio" of a business was defined as:

$$\frac{\text{Gross cash flow}}{\text{Total liabilities}}$$

This ratio was found by Beaver (1966) to be the best single discriminator for failed companies.

It should be noted that the top of the cash flow ratio can be high because the cash flow is high, or low because the cash flow is low, but the whole ratio can be affected by the denominator (if there is a high level of debt, then the ratio will be low, and vice versa).

The results in Table 7.13 show that the average cash flow ratio for all the groups in the sample was below the corresponding industry sector cash flows. The group of companies which had the lowest cash flow ratio in the year prior to issue were those which subsequently issued debt, whereas one might expect that companies would not take on more debt if their cash flow ratio was

TABLE 7.13 : COMPARISON OF CASH FLOW RATIOS FOR THE ORIGINAL ISSUE
AND THE INDUSTRY SECTOR

Company	Ind.Sec.	Month	Yr 0	Yr +1	Co.CF Yr -1	Ind.Sec CF Yr-1	Diff.Co.& Ind.Sec Yr-1	Co.CF Yr 0	Ind.Sec CF Yr 0	Diff.Co.& Ind.Sec Yr0	Co.CF Yr +1	Ind.Sec CF Yr+1	Diff.Co.& Ind.Sec Yr+1
1 Anglia Secure Homes	House	Sep	90	91	-0.03	0.09	-0.12	-0.12	0.04	-0.16	-0.32	-0.01	-0.31
2 Bimac	Missu	Mar	92	93	0.10	0.09	0.01	0.14	n/av	n/av	n/av	n/av	n/av
3 Bowater	Packp	Dec	90	91	0.10	0.11	-0.01	0.10	0.09	0.01	0.10	0.09	0.01
4 Bouthorpe	Eletr	Dec	87	88	0.19	0.12	0.07	0.16	0.12	0.04	0.19	0.12	0.07
5 Casket	Centr	Mar	91	92	-0.03	0.09	-0.12	0.04	0.09	-0.05	0.05	n/av	n/av
6 Cater Allen	Disct	Apr	91	92	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
7 Community Hospital Grp	Hlthc	Jun	91	92	0.08	0.13	-0.05	0.07	0.11	-0.04	n/av	n/av	n/av
8 Cookson Grp	Oindm	Dec	91	92	0.09	0.12	-0.03	0.07	0.1	-0.03	n/av	n/av	n/av
9 De La Rue	Print	Mar	92	93	0.14	0.13	0.01	0.12	n/av	n/av	n/av	n/av	n/av
10 Domino Printing	Print	Oct	91	92	0.14	0.12	0.02	0.17	0.13	-0.04	n/av	n/av	n/av
11 Eurotunnel	Trftr	Dec	90	91	0.04	0.08	-0.04	0.02	0.06	-0.04	0.02	0.06	-0.04
12 Jeyes	Perah	Dec	89	90	0.11	0.16	-0.05	0.09	0.13	-0.04	0.11	0.15	-0.04
13 Kwik Fit	Hdist	Feb	89	90	0.15	0.13	0.02	0.12	0.11	0.01	0.07	0.09	-0.02
14 Lovell, Y.J.	Cnstr	Sep	91	92	0.05	0.06	-0.01	0.01	0.02	-0.01	n/av	n/av	n/av
15 Midland Bank	Banks	Dec	87	88	0.01	0.01	0	-0.01	0	-0.01	0.01	0.01	0
16 Regellan	Prope	Mar	92	93	0.03	0.01	0.02	0.02	n/av	n/av	n/av	n/av	n/av
17 Renold	Mmang	Mar	85	86	0.03	0.07	-0.04	0.06	0.09	-0.03	0.06	0.09	-0.03
18 Richards	Txmia	Sep	89	90	0.12	0.1	0.02	0.09	0.07	0.02	0.09	0.08	0.01
19 Sketchley	Laund	Mar	91	92	0.10	0.13	-0.03	0.18	0.16	0.02	0.27	n/av	n/av
20 Tay Homes	House	Jun	87	88	0.11	0.07	0.04	0.10	0.09	0.01	0.11	0.1	0.01
21 Tibbet & Britten	Trftr	Dec	89	90	0.18	0.08	0.1	0.14	0.08	0.06	0.17	0.06	0.11
22 Westbury	House	Feb	92	93	-0.04	-0.01	-0.03	-0.07	n/av	n/av	n/av	n/av	n/av
23 Allied Lyons	Brews	Feb	89	90	0.09	0.09	0	0.08	0.08	0	0.07	0.09	-0.02
24 Asda	Fdret	Apr	87	88	0.15	0.12	0.03	0.13	0.12	0.01	0.12	0.12	0
25 Asda	Fdret	Apr	89	90	0.12	0.12	0	0.12	0.11	0.01	0.07	0.11	-0.04
26 Baco	Brews	Sep	89	90	0.09	0.09	0	0.09	0.08	0.01	0.09	0.09	0
27 Blue Circle	Cment	Dec	88	89	0.11	0.11	0	0.11	0.12	-0.01	0.10	0.12	-0.02
28 British Land	Prope	Mar	87	88	0.03	0.03	0	0.03	0.03	0	0.03	0.03	0
29 British Land	Prope	Mar	92	93	0.01	0.01	0	0.01	n/av	n/av	n/av	n/av	n/av
30 British Steel	Steel	Mar	92	93	0.10	0.09	0.01	0.06	n/av	n/av	n/av	n/av	n/av
31 City Site Estates	Prope	Sep	87	88	-0.01	0.03	-0.04	0.00	0.03	-0.03	-0.01	0.03	-0.04
32 Dares Estates	Prope	Dec	87	88	0.02	0.03	-0.01	0.03	0.03	0	0.03	0.03	0
33 Forte	Hotel	Jan	90	91	0.05	0.05	0	0.04	0.05	-0.01	0.05	0.04	0.01
34 Land Securities	Prope	Mar	87	88	0.03	0.03	0	0.03	0.03	0	0.02	0.03	-0.01
35 Lsamo	Oilep	Dec	86	87	0.16	0.17	-0.01	0.10	0.12	-0.02	0.09	0.12	-0.03
36 Lsamo	Oilep	Dec	89	90	0.07	0.09	-0.02	0.08	0.09	-0.01	0.08	0.09	-0.01
37 MEPC	Prope	Sep	86	87	0.02	0.02	0	0.02	0.03	-0.01	0.02	0.03	-0.01
38 Taylor Woodrow	Cnstr	Dec	89	90	0.04	0.08	-0.04	0.03	0.07	-0.04	0.03	0.06	-0.03
39 Vaux	Brews	Sep	89	90	0.05	0.09	-0.04	0.05	0.08	-0.03	0.05	0.09	-0.04
40 Whitbread	Brews	Feb	91	92	0.06	0.09	-0.03	0.06	0.09	-0.03	0.06	n/av	n/av
41 Helical Bar	Prope	Jan	88	89	0.28	0.03	0.25	0.05	0.03	0.02	0.05	0.02	0.03
42 Next	Multa	Jan	88	89	0.06	0.12	-0.06	0.11	0.11	0	0.09	0.11	-0.02
43 Worcester Grp	Mmang	Dec	90	91	0.14	0.11	0.03	0.09	0.11	-0.02	0.09	0.09	0

Average cash flow ratios:

(i) for equity issues	0.0795	0.0900	-0.0105	0.0714	0.0876	-0.0118	0.0715	0.0764	-0.0209
(ii) for debt issues	0.0661	0.0744	-0.0083	0.0594	0.0725	-0.0100	0.0563	0.0720	-0.0160
(iii) for conv.	0.1600	0.0867	0.0733	0.0833	0.0833	0.0000	0.0767	0.0733	0.0033

- Note (1) Cash flow ratio is defined as gross cash flow/total liabilities
- (2) Yr -1 = year before capital issue
- (3) Yr 0 = year of capital issue
- (4) Yr +1 = year after capital issue
- (5) n/av = cash flow ratio not available

TABLE 7.13B : STATISTICAL COMPARISON OF CASH FLOW RATIO

		Paired 't' Test			Degrees of Freedom	Significance (based on 2tt)
Source Table	Year -1	Sd(E)	Sd (D)	Se		
Individual Companies						

7.13	CF (Orig. issue)	0.0682	0.0492	0.0186	37	n/a
Industry Sectors						

7.13	CF (Ind. Sec.)	0.0486	0.0413	0.0142	37	n/a

Sd(E) = standard deviation of Cash flow ratio (Yr-1) for all the companies which issued equity in the following year

Sd(D) = standard deviation of Cash flow ratio (Yr-1) for all the companies which issued debt in the following year

Se = standard error

n/a = not significant

low.

The cash flow ratios for the equity issuing and debt issuing groups are not statistically significantly different from each other (Table 7.13B).

7-6-2 Tax ratio

Table 7.14 compares the tax ratios for the original issue and the industry sector. The tax ratio is defined as:

Total tax charge

Pre-tax profits

In the year prior to issue, the average tax ratio for the equity group was 28.56%, for the debt group 35.58% and for the convertibles 36.90%. The average industry sector tax ratios for the preceding groups were 34.80%, 35.97%, and 33.87%. The equity group was therefore below the industry average, the convertibles group above, and debt issues almost in line.

One possible explanation for the lower tax ratio of the equity issuing companies, given that this group had a higher average capital gearing ratio

TABLE 7.14 : COMPARISON OF TAX RATIOS FOR THE ORIGINAL ISSUE
AND THE INDUSTRY SECTOR

Company	Ind.Sec.	Yr	Yr	Co.Tax	Ind.Sec.Tax	Diff.bet.Co.	Co.Tax	Ind.Sec.Tax	Diff.bet.Co.	Co.Tax	Ind.Sec.Tax	Diff.bet.Co.
		0	+1	Ratio,Yr-1	Ratio,Yr-1	&Ind.Sec.Yr-1	Ratio,Yr0	Ratio,Yr0	&Ind.Sec.Yr0	Ratio,Yr+1	Ratio,Yr+1	&Ind.Sec.Yr+1
1 Anglia Secure Homes	House	90	91	39.45	35.84	3.61	1.83	36.23	-34.40	0.00	-7.15	7.15
2 Bimac	Misau	92	93	34.00	34.87	-0.87	33.01	n/av	n/av	n/av	n/av	n/av
3 Bowater	Peckp	90	91	34.96	38.00	-3.04	35.01	39.55	-4.54	33.25	33.53	-0.28
4 Bouthorpe	Eletr	87	88	40.47	39.70	0.77	38.94	35.93	3.01	36.47	35.83	0.64
5 Casket	Gentr	91	92	-9.76	35.65	-45.41	33.99	35.50	-1.51	32.83	n/av	n/av
6 Cater Allen	Disct	91	92	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
7 Community Hospital Grp	Hlthc	91	92	30.60	34.82	-4.22	33.75	32.87	0.88	n/av	n/av	n/av
8 Cookson Grp	Oinda	91	92	35.17	35.01	0.16	33.33	33.06	0.27	n/av	n/av	n/av
9 De La Rue	Print	92	93	34.00	34.84	-0.84	32.99	n/av	n/av	n/av	n/av	n/av
10 Domino Printing	Print	91	92	35.79	40.01	-4.22	36.22	34.84	1.38	n/av	n/av	n/av
11 Eurotunnel	Trftr	90	91	0.00	32.92	-32.92	-0.01	34.61	-34.62	0.00	32.69	-32.69
12 Jeyes	Perah	89	90	35.67	36.79	-1.12	39.48	36.19	3.29	35.33	33.72	1.61
13 Kuik Fit	Mdist	89	90	32.42	36.53	-4.11	35.00	35.72	-0.72	35.00	37.62	-2.62
14 Lovell, Y.J.	Cnstr	91	92	35.00	34.78	0.22	803.61	92.45	711.16	n/av	n/av	n/av
15 Midland Bank	Banks	87	88	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
16 Regalian	Prope	92	93	31.92	39.57	-7.65	-86.76	n/av	n/av	n/av	n/av	n/av
17 Renold	Mmang	85	86	n/av	46.91	n/av	45.00	43.04	1.96	39.68	38.96	0.72
18 Richards	Txmia	89	90	34.21	33.54	0.67	28.04	32.67	-4.63	28.10	32.95	-4.85
19 Sketchley	Laund	91	92	13.37	38.86	-25.49	310.75	27.42	283.33	-18.22	n/av	n/av
20 Tay Homes	House	87	88	39.52	37.42	2.10	35.58	35.07	0.51	35.16	35.12	0.04
21 Tibbet & Britten	Trftr	89	90	35.34	36.99	-1.65	35.40	32.92	2.48	34.93	34.61	0.32
22 Westbury	House	92	93	10.56	-7.15	17.71	27.17	n/av	n/av	n/av	n/av	n/av
23 Allied Lyons	Brews	89	90	35.00	35.04	-0.04	35.08	34.44	0.64	34.93	33.79	1.14
24 Asda	Fdret	87	88	39.59	40.19	-0.60	35.00	35.89	-0.89	35.64	35.89	-0.25
25 Asda	Fdret	89	90	35.64	35.89	-0.25	35.01	35.01	0.00	34.98	34.55	0.43
26 Bass	Brews	89	90	36.46	35.04	1.42	33.40	34.44	-1.04	29.96	33.79	-3.83
27 Blue Circle	Cment	88	89	34.99	35.00	-0.01	35.01	34.71	0.30	35.02	34.02	1.00
28 British Land	Prope	87	88	39.81	34.60	5.21	35.00	31.22	3.78	35.00	31.42	3.58
29 British Land	Prope	92	93	33.87	39.57	-5.70	30.33	n/av	n/av	n/av	n/av	n/av
30 British Steel	Steel	92	93	33.90	33.76	0.14	33.96	n/av	n/av	n/av	n/av	n/av
31 City Site Estates	Prope	87	88	n/av	34.60	n/av	91.47	31.22	60.25	-161.40	31.42	-192.82
32 Dares Estates	Prope	87	88	32.52	34.60	-2.08	34.35	31.22	3.13	38.11	31.42	6.69
33 Forte	Hotel	90	91	35.08	35.13	-0.05	34.82	34.55	0.27	34.08	37.68	-3.60
34 Land Securities	Prope	87	88	33.30	34.60	-1.30	28.69	31.22	-2.53	28.67	31.42	-2.75
35 Lasso	Oilcp	86	87	41.21	40.54	0.67	36.14	44.19	-8.05	35.06	37.26	-2.20
36 Lasso	Oilcp	89	90	35.05	37.03	-1.98	35.06	25.29	9.77	34.97	31.26	3.71
37 MEPC	Prope	86	87	34.69	38.01	-3.32	34.42	34.60	-0.18	32.17	31.22	0.95
38 Taylor Woodrow	Cnstr	89	90	33.03	35.06	-2.03	35.01	34.70	0.31	34.99	34.78	0.21
39 Vaux	Brews	89	90	36.14	35.04	1.10	34.78	34.44	0.34	34.90	33.79	1.11
40 Whitbread	Brews	91	92	34.63	33.79	0.84	34.19	32.82	1.37	37.26	n/av	n/av
41 Helical Bar	Prope	88	89	37.13	31.22	5.91	34.63	31.42	3.21	32.73	32.87	-0.14
42 Next	Mults	88	89	38.14	36.14	2.00	35.35	35.49	-0.14	36.04	35.39	0.65
43 Worcester Grp	Mmang	90	91	35.44	34.24	1.20	31.47	34.82	-3.35	33.19	35.83	-2.64
Average tax ratios:												
(i) for equity issues				28.56	34.80	-5.59	77.62	38.63	57.99	27.41	30.79	-3.00
(ii) for debt issues				35.58	35.97	-0.47	37.32	33.75	4.22	22.15	33.58	-12.44
(iii) for conv.				36.90	33.87	3.04	33.82	33.91	-0.09	33.99	34.70	-0.71

Notes (1) Tax ratio is defined as total tax charge/pre-tax profits
(2) Yr -1 = year before the issue
(3) Yr 0 = year of capital issue
(4) Yr +1 = year after capital issue
(5) n/av = tax ratio not available

NB. If the untypically large tax ratios are excluded
(those for Lovell 803.61 and Sketchley 310.75) then the
average tax ratio for equity issues (Yr 0) is:

than the debt issuing group, is that they have more debt interest to set-off against profits, and this results in a lower tax ratio. Alternatively, a greater proportion could be tax exhausted - hence a lower propensity to issue debt.

The difference between tax ratios for the equity issuing companies and for the debt issuing companies is significant at the 1% level for the year prior to the issue; and for the industry sector groups for the equity issuing companies and the debt issuing companies the difference is significant at the 2% level, as shown in Table 7.14B.

In the year of the capital issue, the tax ratio for the equity group jumps up to 77.62%, caused by unusually large figures for Y.J. Lovell and Sketchley. If these are stripped out, then the tax ratio would be 24.33%, compared to an industry average of 38.63%. The tax ratios for debt and convertibles are fairly much in line with industry averages in the year of the capital issue.

TABLE 7.14B : STATISTICAL COMPARISON OF TAX RATIO
FOR EQUITY AND FOR DEBT ISSUES

Paired 't' Test						

Source Table	Year -1	Sd(E)	Sd (D)	Se	Degrees of Freedom	Signif- icance (based on 2tt)
Individual Companies						

7.14	TR (Orig. issue)	16.1432	8.4747	3.9794	34	0.01
Industry Sectors						

7.14	TR (Ind. Sec.)	13.8689	2.1014	2.9981	36	0.02

Note : TR = Tax ratio

Sd(E) = standard deviation of Tax ratio (Yr-1) for all the
 companies which issued equity in the following year

Sd(D) = standard deviation of Tax ratio (Yr-1) for all the
 companies which issued debt in the following year

Se = standard error

7-7 EBIT-EPS in the Context of the Original and Reconstructed Capital Issues

In Chapter 5 several expressions were developed for determining the preferred method of finance based on EBIT-EPS analysis under certain assumptions. These are utilised for the sample of companies for which reconstructions have been carried out above, and the results based on the expressions and based on the reconstructions are compared in Table 7.15.

These expressions all capture binary comparisons. For equity to be preferred to debt, the following expression is used:

$$\frac{(EBIT-I)(\Delta n)}{(n+\Delta n)} > rD$$

(The terms are defined in Section 5-3, Chapter 5).

This formula was also used for a convertible loan issue, where the reconstruction was for ordinary shares.

Debt finance is preferable where the proportion of earnings after interest attributable to the

TABLE 7.15: EBIT-EPS ANALYSIS AND CAPITAL ISSUE CHOICE

Company	EBIT £000	I £000	n 000	Δn 000	EBIT-I £000	$\Delta n/n$	(E)*(F) £000	rD £000	(A)>(G)	DEBT=1 EQUITY=0	DEBT=1 EQUITY=0	ACT.V.REC.SAME RESULT
	(A)	(B)	(C)	(D)	(E)	(F)	(A)	(G)				
1 Anglia Secure Homes	-1527	7361	21020	12016	-8888	0.3637	-3233	295	0	0	0	Y
	-10631	6360	21020	12016	-14149	0.3637	-5146	1180	0	0	0	Y
2 Bimac	7242	1201	82663	24179	6041	0.2263	1367	680	1	1	1	Y
	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
3 Bowater	169000	55900	119200	33734	113100	0.2206	24947	9405	1	1	1	Y
	166700	54000	119200	33734	112700	0.2206	24859	18762	1	1	1	Y
4 Bouthorpe	33510	986	44490	22245	32524	0.3333	10841	919	1	1	1	Y
	41427	1360	44490	22245	40067	0.3333	13356	5409	1	0	0	N
5 Casket	2751	2539	37740	37740	212	0.5000	106	586	0	0	0	Y
	3996	1934	37740	37740	2062	0.5000	1031	781	1	1	1	Y
6 Cater Allen	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
7 Community Hospital Grp.	5890	76	24201	8067	5814	0.2500	1454	218	1	1	1	Y
	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
8 Cookson Grp	61400	27000	364000	80900	34400	0.1818	6255	6579	0	0	0	Y
	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
9 De La Rue	86900	10700	140697	45800	76200	0.2456	18713	7843	1	1	1	Y
	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
10 Domino Printing	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
11 Eurotunnel	202772	202529	332392	199435	243	0.3750	91	5907	0	0	0	Y
	348731	348840	332392	199435	-109	0.3750	-41	73840	0	0	0	Y
12 Jeyes	3392	1029	10760	3240	2363	0.2314	547	0	1	1	1	Y
	4250	686	10760	3240	3564	0.2314	825	892	0	0	0	Y
13 Kuik Fit	19626	1172	85670	34400	18454	0.2865	5287	2861	1	1	1	Y
	20012	4892	85670	34400	15120	0.2865	4332	3815	1	0	0	N
14 Lovell, Y.J.	-13642	6665	58332	23766	-20307	0.2895	-5879	912	0	0	0	Y
	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
15 Midland Bank	-314000	191000	232000	232926	-505000	0.5010	-253003	25666	0	0	0	Y
	887000	194000	232000	232926	693000	0.5010	347190	77776	1	1	1	Y
16 Regalian	-26804	n/av	87829	29276	-26804	0.2500	-6701	1698	0	0	0	Y
	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
17 Renold	9100	4600	40352	24048	4500	0.3734	1680	0	1	1	1	Y
	11300	3700	40352	24048	7600	0.3734	2838	1228	1	1	1	Y
18 Richards	3351	584	13230	3344	2767	0.2018	558	278	1	1	1	Y
	3046	231	13230	3344	2815	0.2018	568	415	1	1	1	Y
19 Sketchley	1116	6380	36223	21729	-5264	0.3749	-1974	1880	0	0	0	Y
	8995	2980	36223	21729	6015	0.3749	2255	2806	0	0	0	Y
20 Tay Homes	3296	272	5325	1775	3024	0.2500	756	0	1	1	1	Y
	5564	413	5325	1775	5151	0.2500	1288	651	1	1	1	Y
21 Tibbet & Britten	10270	1208	26260	6565	9062	0.2000	1812	1217	1	1	1	Y
	13342	1665	26260	6565	11677	0.2000	2335	1817	1	1	1	Y
22 Westbury	-9881	5239	49820	16613	-15120	0.2501	-3781	1740	0	0	0	Y
	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av

Notes: Using expression: if $(EBIT-I)(\Delta n/n) > rD$, then debt is preferred to equity.
where EBIT = Earnings before interest and tax
I = interest
n = total number of shares
 Δn = change in number of shares
r = rate of interest
D = total nominal value of debt

31/33=Y, 2/33=N (11 OF TOTAL 44 = NOT AVAILABLE [n/av])

TABLE 7.15: EBIT-EPS ANALYSIS AND CAPITAL ISSUE CHOICE (cont'd)

Company	EBIT £000 (A)	I £000 (B)	n 000 (C)	Δn 000 (D)	EBIT-I £000 (E)	Δn/n+Δn 000 (F)	(E)*(F) £000 (A)	rD £000 (G)	(A)>(G) DEBT=1 EQUITY=0	DEBT=1 EQUITY=0	ACT.V.REC.SAME RESULT
23 Allied Lyons	649000	147000	729612	86986	502000	0.1065	53474	0	1	1	Y
	733000	143625	729612	86986	589375	0.1065	62782	24375	1	1	Y
24 Asda *	192200	200	1136000	86522	192000	0.0708	13588	0	1	1	Y
	218000	2700	1136000	86522	215300	0.0708	15238	0	1	1	Y
25 Asda	248500	767	1155000	107789	247733	0.0854	21146	1133	1	1	Y
	242500	48606	1155000	107789	193894	0.0854	16550	13594	1	1	Y
26 Bass	607000	67192	341673	34062	539808	0.0907	48936	10808	1	1	Y
	717000	156062	341673	34062	560938	0.0907	50851	25938	1	1	Y
27 Blue Circle	243700	39256	258861	41126	204444	0.1371	28028	1344	1	1	Y
	287600	39675	258861	41126	247925	0.1371	33989	16125	1	1	Y
28 British Land	31419	n/av	139956	8845	31419	0.0594	1868	1319	1	1	Y
	57719	n/av	139956	8845	57719	0.0594	3431	1319	1	1	Y
29 British Land	50488	n/av	225535	66238	50488	0.2270	11462	17188	0	0	Y
	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
30 British Steel	-41939	32062	2000000	149364	-74001	0.0695	-5142	12938	0	0	Y
	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av	n/av
31 City Site Estates	1884	n/av	8948	20038	1884	0.6913	1302	1094	1	0	N
	6303	n/av	8948	20038	6303	0.6913	4357	2625	1	1	Y
32 Dares Estates	7177	n/av	132560	84924	7177	0.3905	2803	2081	1	0	N
	16154	n/av	132560	84924	16154	0.3905	6308	3588	1	1	Y
33 Forte	322400	79746	782648	44580	242654	0.0539	13077	9854	1	1	Y
	290000	89250	782648	44580	200750	0.0539	10819	10750	1	1	Y
34 Land Securities	137545	n/av	503400	75438	137545	0.1303	17926	16945	1	1	Y
	152600	n/av	503400	75438	152600	0.1303	19888	19000	1	1	Y
35 Lasso	43700	33325	122364	44414	10375	0.2663	2763	3375	0	1	N
	72100	29037	122364	44414	43063	0.2663	11468	5063	1	1	Y
36 Lasso	133200	38331	193946	40249	94869	0.1719	16304	12969	1	0	N
	188500	60737	193946	40249	127763	0.1719	21957	15563	1	0	N
37 MEPC	62244	n/av	237508	27574	62244	0.1040	6475	3844	1	1	Y
	87888	n/av	237508	27574	87888	0.1040	9142	7688	1	1	Y
38 Taylor Woodrow	138500	19700	158257	16107	118800	0.0924	10974	1900	1	0	N
	108900	23220	158257	16107	85680	0.0924	7915	2280	1	0	N
39 Vaux	37059	3340	47417	26306	33719	0.3568	12032	2150	1	1	Y
	44110	1834	47417	26306	42276	0.3568	15085	6450	1	1	Y
40 Whitbread	337000	47584	441744	11968	289416	0.0264	7634	2616	1	1	Y
	272000	37306	441744	11968	234694	0.0264	6191	15694	0	0	Y
41 Helical Bar **	7164	n/av	3620	5027	7164	0.5814	8010	204	1	1	Y
	12212	n/av	3620	5027	12212	0.3779	4615	994	1	1	Y
42 Next ***	93742	5354	254590	23256	88388	0.0837	7398	1917	1	0	N
	87800	19750	254590	23256	68050	0.0837	5696	5750	0	0	Y
43 Worcester Grp **	3553	758	23260	48089	2795	0.6740	1884	30	1	1	Y
	5800	1280	23260	48089	4520	0.6740	3046	500	1	1	Y

Notes: Using expression: if $(EBIT-I)(\Delta n/n+\Delta n)>rD$, then debt is preferred.

where EBIT = Earnings before interest and tax

I = interest

n = total number of shares

Δn = change in number of shares

r = rate of interest

D = total nominal value of debt

* = Asda capitalised the relevant interest

** = Helical Bar and Worcester Grp made issues of convertible preference shares. The EBIT-EPS expression for these is:

.. if $PD>(1-T)(EBIT-I)(\Delta n/n+\Delta n)$, then ordinary shares are preferred.

*** Next made a convertible loan issue, the first expression has therefore been used.

27/34=Y, 7/34=N (2 OF TOTAL 36 = NOT AVAILABLE [n/av])

5/6 =Y, 1/6=N

increase in shares under the equity option, exceeds the new interest that would be payable under the debt option.

For the companies which had issued convertible preference shares and where the reconstruction was for ordinary shares, the following expression is used:

$$PD > (1-T) (EBIT-I) \left(\frac{\Delta n}{n+\Delta n} \right)$$

As discussed earlier in Section 5-3, Chapter 5, for ordinary shares to be preferred to preference shares, the preference dividend would have to exceed the proportion of earnings 'belonging' to the new ordinary shares.

In Table 7.15 the 'preferred' method of finance is shown based on (i) the expressions discussed above, and (ii) whether the original method of finance or the reconstruction method results in the higher EPS.

When debt is preferred to equity, then a '1' is coded against that company, whilst for equity a '0' is coded. Similarly, given that the convertible issues were reconstructed with

equity, then if convertibles are preferred to equity, a '1' is coded against that company, whilst for equity a '0' is coded.

A similar coding system was employed when referring back to Tables 6.7-6.10 (Chapter 6), where the EPS was compared both on the original issue and on a reconstruction. For whichever scenario gave the highest EPS, if debt, (or convertibles for companies 41-43), gave the higher EPS a '1' was coded, whilst if equity gave the higher EPS a '0' was coded. This is not stating that debt issues are the same as issues of convertibles, rather that a '0' indicates that an equity issue (ordinary shares) resulted in a higher EPS, whilst a '1' indicates that it was another form of finance (debt, or convertibles) which resulted in a higher EPS.

The results were then compared for each company for the year of issue and the year following issue. From the results of the classification on the EBIT-EPS method and the reconstructions, it was found that for those companies which originally issued equity and for which the reconstruction was for debt, the EBIT-EPS method exhibited the same preference for 31 out of 33 cases (94%); for companies which originally

issued debt and for which the reconstruction was for equity, the EBIT-EPS method was in agreement for 27 out of 34 cases (79%); whilst for companies which originally issued convertibles and for which the reconstruction was for equity, the EBIT-EPS method was in agreement for 5 out of 6 cases (83%).

Summary of Table 7.15

		Actual Issue	
		Equity	Debt
Preferred	Equity	31	7
on EBIT-EPS	Debt	2	27
Analysis		33	34

(ignoring convertibles)

For the companies where the two methods do not provide the same result, it may be partly attributable to the fact that in Table 7.15, the figure used for the increase in the number of shares (Δn) was taken as the whole amount of the new equity issue, rather than the figure that would have been used in a weighted average share calculation for determining EPS. It was felt to be preferable to use the total number of ordinary shares associated with the new issue, so that a

consistent basis was used. Also, it should have only affected the year of issue, as by the following year, the new shares would be included in full in the weighted average.

The findings outlined above provide further confirmation of the influence of EPS in capital issue decisions. It also shows that the expressions derived in Section 5-3 have good predictive ability regarding the debt-equity choice made by companies.

7-8 Conclusions

In this Chapter, the apparent influence of different measures which may affect the debt-equity choice is investigated, using a univariate approach. The findings, in brief, were as follows:

(i) Arising from the comparison made of the capital gearing ratios for the companies making different types of finance issue, there would appear to be evidence of mean reversion and debt capacity with more highly geared companies tending to issue equity, and less highly geared companies issuing debt.

The capital gearing ratios for the year before the capital issue for the companies which subsequently issued equity, and those which subsequently issued debt, were found to be significantly different from each other at the 1% level.

It would also seem that companies tend to make issues which push the gearing into line with the industry averages, or which bring them back into line with them.

There is also some evidence that the amount of equity issues tends to be for a larger proportion of the total assets of the business, than debt issues are.

(ii) Income gearing and interest cover are examined. It was noted that if the equity issuing companies had issued debt, then the average interest gearing ratio for the equity issuing companies would have increased substantially.

The interest cover for those companies which subsequently issued equity was lower than the interest cover for the other types of issue.

The income gearing ratios for the year before the capital issue for the companies which subsequently issued equity and those which issued debt, were significantly different from each other at the 1% level. The same was true of the interest cover ratios.

(iii) An analysis of the effect of a reconstruction (i.e. hypothetical issue) on dividend cover shows that, in the majority of cases, the alternative financing instrument would have resulted in a drop in dividend cover.

(iv) The rates of return for companies which issued equity would appear to be more volatile, and have a wider spread, when compared with debt issues. There is some evidence for the companies which issued equity earning a higher rate of return, a finding consistent with the premise of Baumol et al (1970) that different types of finance earn different rates of return.

(v) In the year prior to the capital issue, the companies which subsequently issued debt, had the lowest average cash flow ratio.

(vi) When analysing the tax ratios, it was found that, in the year prior to issue, the companies

which subsequently issued equity had a lower average tax ratio than those companies which subsequently issued debt or convertibles.

(vii) The formulae derived in Chapter 5 are used to classify the types of issue, based on which would be preferred on the basis of EBIT-EPS analysis. A comparison is made with the original and reconstructed income statements, based on which type of issue gives the higher EPS. The results confirm that the formulae derived in Chapter 5 could prove a useful guide to companies wishing to choose the type of finance which will maximise EPS.

In the next Chapter, a multivariate approach is adopted to investigate further the apparent influence of the different measures discussed in this Chapter.

CHAPTER 8 : REGRESSION MODEL (PROBIT) OF DEBT-EQUITY CHOICE

8-1 Introduction

In the previous Chapter various measures which might influence the debt-equity choice were examined on a 'univariate basis'. In this Chapter, a multivariate approach is adopted using a limited dependent variable method - probit analysis.

In this probit model, debt/equity choice is the dichotomous dependent variable, and various factors which might affect that choice were included as independent variables. The set of variables out of which the independent variables were selected included capital and income gearing ratios, and the elasticity measures of DOL, DFL and DCL which have certain potential benefits (eg DOL and DCL incorporate the operating risk of a firm which purely financial measures do not). The 'cash flow ratio' (i.e. cash flow/total debt) found by Beaver (1966), to be the best single discriminator between failed and non-failed companies, is also investigated.

The results of the probit model were supportive

of a fixation on EPS - whilst the final model included an industry sector variable, and a gearing variable, the independent variable with the most influence was a dummy variable which captured the effect of the debt-equity choice of finance on EPS.

8-2 Probit Analysis

8-2-1 Linear Probability Model

It was decided to model the debt-equity choice by means of a linear probability model. This type of model is used when the dependent variable y is a binary variable taking the value of 1 if the event occurs and 0 if it does not. The debt-equity choice can be represented by y , being a dependent variable which can take only two values: debt (1) or equity (0). y is therefore a dichotomous variable.

The model takes the form:

$$y = \beta'x_i + u_i$$

where $E(u_i) = 0$

The conditional expectation $E(y_i|x_i) = \beta'x_i$. In

this case this is interpreted as the probability that the event will occur given the x_i . The calculated value of y from the regression equation, $y_i = \beta'x_i$, then gives the estimated probability that the event will occur given the particular value of x . In practice, these estimated probabilities can lie outside the admissible range $(0,1)$. Given that y_i takes only 1 or 0 as a value, the residuals in the above equation can take only two values: $1 - \beta'x_i$ and $-\beta'x_i$. Also given that $E(u_i) = 0$, then there is a problem with heteroscedasticity, so the ordinary least squares (OLS) estimates of β would not be efficient.

Goldberger (1964) suggested a procedure, using OLS and weighted least squares, that he thought might overcome the problem. This technique was probit analysis.

However, Maddala (1991) outlined various problems that might still arise, the most important of which concerned the formulation itself - that the conditional expectations $E(y_i | x_i)$ be interpreted as the probability that the event will occur, since in many cases the conditional expectations may lie outside the limits $(0,1)$.

The technique of probit analysis as defined by Goldberger (1964) and Maddala (1991) assumes that there is an underlying response variable y_i defined by the regression relationship:

$$y_i = \beta'x_i + u_i$$

In the model specified below, y_i is the dummy.

8-2-2 Formulation of Probit Model

The following probit model was formulated and run in LIMDEP (a limited dependent variable package):

(a) Dependent variable

The dependent variable is represented by a dummy (DE), where debt = 1, and equity = 0.

The independent variables were all factors which it was thought might influence the debt-equity choice. They are detailed below.

(b) Independent variables

There is no theoretical basis for some particular model form here; rather it is a case of trying to detect influential model variables.

The set of potential explanatory variables is detailed below under the heads of 'dummy independent variables' and 'independent variables'.

Dummy independent variables

Three dummy independent variables were set up to represent the four industry sectors (i.e. $n-1$ dummies), such that:

- (i) 0,0,0 (Z1) represented industry sector 1 (manufacturing);
- (ii) 1,0,0 (Z2) industry sector 2 (service);
- (iii) 0,1,0 (Z3) industry sector 3 (retail and distribution); and
- (iv) 0,0,1 (Z4) industry sector 4 (property and construction).

Another dummy was set up for whichever type of issue, be it on the original or the reconstruction figures, gave the higher EPS (D2). If debt gave the higher EPS it was coded 1; if equity gave the higher EPS it was coded 0.

Independent variables

- (i) the age of the company (AGE);
- (ii) the capital gearing of the company prior to the year of issue (CGPY);
- (iii) the capital gearing of the company for the year of issue (CG0);
- (iv) the income gearing of the company prior to the year of issue (IGPY);
- (v) the income gearing of the company for the year of issue (IG0);
- (vi) the interest cover of the company prior to the year of issue (ICPY);
- (vii) the interest cover of the company for the year of issue (IC0);
- (viii) the degree of operating leverage (DOL) based on the estimates obtained using the Mandelker and Rhee methodology;
- (ix) the degree of financial leverage (DFL) based on the estimates obtained using the Mandelker and Rhee methodology;
- (x) the degree of combined leverage (DCL), estimated from (viii) and (ix) above;
- (xi) the beta of the firm (BETA) obtained from Datastream (calculated by performing a least squares regression between weekly adjusted prices of the stock and the corresponding Datastream market index, using five year's data);

- (xii) the relative size of the issue (RS) calculated as the proceeds of the issue as a proportion of the total assets of the business;
- (xiii) the dividend cover of the company for the year prior to the capital issue (DCPY);
- (xiv) the dividend cover of the company for the year of issue (DC0);
- (xv) the cash flow ratio of the company (CF).
- (xvi) following the analysis in Maddala, a constant (ONE) was included in the probit model.

Most of these variables have been discussed in Chapter 7 (capital and income gearing measures, dividend cover, cash flow ratio and tax ratio); in Chapter 6 (EPS); and in Chapter 5 (degrees of financial, operating, and combined leverage; and beta). The age of the company might also be relevant in the debt-equity choice as older firms may find it easier to issue debt. The size of the issue may also be relevant, a large issue relative to the total assets of the business is probably more likely to be equity.

The variables incorporated into the probit model are detailed in Table 8.1.

Some of the variables are highly related and a correlation matrix is presented and discussed

TABLE 0.1 : CAPITAL ISSUES DATA RUN IN PROBIT ANALYSIS

Co.Count	D(=1)E(=0)	Ind Sec	Ind Sec	Ind Sec	Age	CG	Yr-1	IG	Yr-1	CG	Yr 0	IG	Yr 0	DOL	DFL	DCL	DFL(AVG)	DFLPY	DFLO	Beta	Proceeds/ Tot.Ass.X	Cash Flow Ratio Yr-1	EPS Pref. D=1,E=0	Div Cov Yr -1	Div Cov Yr 0	Int.Cov Yr -1	Int.Cov Yr 0	Proceeds Total of Issue Assets £000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Note: 1-22 = equity issues of ordinary shares
23-40 = debt issues
n/av = data missing for that item

below.

8-3 Correlations of Variables in Probit

Model

8-3-1 Correlation Matrix

Before the probit model was run, a correlation matrix of the independent variables was analysed. The correlations are shown in Table 8.2, as one might expect there are significant correlations between certain variables, notably the measures of gearing (capital gearing, income gearing, interest cover, degree of operating leverage, degree of financial leverage, and degree of combined leverage). The matrix is discussed more fully below.

8-3-2 Correlations between Gearing Measures

As mentioned above, there are strong correlations between the same measure of gearing for the year of capital issue and the year prior to issue. For example, the correlation between CGPY (capital gearing for the year prior to issue) and CG0 (capital gearing for year of issue) is 0.756; between IGPY (income gearing for the year prior to capital issue) and IG0 (income gearing for

TABLE 8.2 : CORRELATION MATRIX OF VARIABLES IN PROBIT ANALYSIS

	1-IS1	2-IS2	3-IS3	4-AGE	5-CGPY
1-IS1	1.0000000				
2-IS2	-.1587768	1.0000000			
3-IS3	-.2474358	-.2750095	1.0000000		
4-AGE	.2631072	-.2226054	-.1918304	1.0000000	
5-CGPY	.1140399	-.0966060	.2601410	-.1074252	1.0000000
	1-IS1	2-IS2	3-IS3	4-AGE	5-CGPY
6-CGO	-.0013664	-.0143795	.3156150	-.1022900	.7561614
7-IGPY	-.2801052	.1308424	-.1921926	-.0254861	-.0672277
8-IG0	.1036108	.2170028	-.6664493	.1616496	-.0150325
9-DOL	-.2754966	.1015349	-.4534071	.1127681	-.1391082
10-DFL	-.4655736	-.1471244	.1859494	-.0109313	.1896925
	6-CGO	7-IGPY	8-IG0	9-DOL	10-DFL
6-CGO	1.0000000				
7-IGPY	-.2217274	1.0000000			
8-IG0	-.2688708	.5315444	1.0000000		
9-DOL	-.3890060	.5271784	.7609842	1.0000000	
10-DFL	.0577319	.0571575	.0696428	.4628101	1.0000000
	1-IS1	2-IS2	3-IS3	4-AGE	5-CGPY
11-DCL	-.2766833	.0979575	-.4542304	.1082214	-.1461734
12-DFL2	.0112060	.1412144	-.6078443	.1373450	-.1277027
13-DFLPY	-.0025744	.2201965	-.6287855	.1071661	-.0906112
14-DFLO	-.0169439	.3098183	-.6153774	.0601190	-.0310388
15-BETA	-.2298004	.0161534	.3203634	-.2540307	.2659883
	6-CGO	7-IGPY	8-IG0	9-DOL	10-DFL
11-DCL	-.3927890	.5267099	.7548681	.9994661	.4625519
12-DFL2	-.3635569	.6397466	.9212842	.8567773	.1960134
13-DFLPY	-.3041493	.6537693	.9430771	.8023982	.0794900
14-DFLO	-.2021055	.6255746	.9100697	.6762987	-.0809566
15-BETA	.2578715	.1019706	-.0772685	.0480650	.1595710
	11-DCL	12-DFL2	13-DFLPY	14-DFLO	15-BETA
11-DCL	1.0000000				
12-DFL2	.8561263	1.0000000			
13-DFLPY	.8017942	.9786162	1.0000000		
14-DFLO	.6757697	.8846143	.9616043	1.0000000	
15-BETA	.0532093	-.0321721	-.0271673	-.0192129	1.0000000

TABLE 8.2 (CONT'D) : CORRELATION MATRIX OF VARIABLES IN PROBIT ANALYSIS

	1-IS1	2-IS2	3-IS3	4-AGE	5-CGPY
16-RS	-.0809793	-.0287275	.2015955	-.2108121	.0760686
17-CF	-.4237239	.0673795	.1046116	-.2890386	.2740290
18-D2	.1720304	-.0637337	-.0993218	-.0212257	.1337540
19-DCPY	-.2173222	.1079688	-.2152733	-.0240650	-.3780649
20-DC0	-.3477146	.0905738	-.0461893	-.2320638	-.2983370
	6-CG0	7-IGPY	8-IG0	9-DOL	10-DFL
16-RS	.0343686	-.1851058	-.1424657	-.1121502	.0601434
17-CF	.2536236	.2094236	.3020863	.2601610	.5623633
18-D2	.2263056	-.1449609	-.0112715	-.0747903	.1398413
19-DCPY	-.3479379	.1457845	.2591334	.2256818	.2313515
20-DC0	-.2370483	-.1293376	.0455409	.1602646	.2597347
	11-DCL	12-DFL2	13-DFLPY	14-DFLO	15-BETA
16-RS	-.1160320	-.1782232	-.1800083	-.1706668	-.0942907
17-CF	.2599647	.3152726	.3202850	.3055398	.1186919
18-D2	-.0701654	-.0168530	-.0561420	-.1023119	.0696962
19-DCPY	.2195451	.3251349	.2716507	.1784966	-.1052331
20-DC0	.1518640	.0507842	.0021436	-.0645760	-.2620314
	16-RS	17-CF	18-D2	19-DCPY	20-DC0
16-RS	1.0000000				
17-CF	.0370153	1.0000000			
18-D2	-.0375117	.1861941	1.0000000		
19-DCPY	.0606684	.2634692	-.1018249	1.0000000	
20-DC0	.4930366	.2388163	.0959770	.5801362	1.0000000

TABLE 8.2 (CONT'D) : CORRELATION MATRIX OF VARIABLES IN PROBIT ANALYSIS

	1-IS1	2-IS2	3-IS3	4-AGE	5-CGPY
• 21-ICPY	-.0023049	.2356109	-.6330596	.0988368	-.1165485
22-IC0	-.0152203	.3357954	-.6142980	.0477400	-.1602860
	6-CG0	7-IGPY	8-IG0	9-DOL	10-DFL
21-ICPY	-.3194570	.6516287	.9407066	.8104572	.0924567
22-IC0	-.2966007	.6111328	.8867739	.7700246	.0903823
	11-DCL	12-DFL2	13-DFLPY	14-DFL0	15-BETA
21-ICPY	.8097623	.9833682	.9980272	.9507273	-.0322454
22-IC0	.7686234	.9285932	.9403830	.8929594	-.0391838
	16-RS	17-CF	18-D2	19-DCPY	20-DC0
21-ICPY	-.1827507	.3199494	-.0419985	.2906841	.0225553
22-IC0	-.1846012	.3015783	.0059112	.2930772	.0661874
	21-ICPY	22-IC0			
21-ICPY	1.0000000				
22-IC0	.9554882	1.0000000			

year of capital issue) it is 0.532; between ICPY (income cover for the year prior to issue) and IC0 (income cover for the year of issue) it is 0.955; and between DFLPY (degree of financial leverage for the year prior to issue) and DFL0 (degree of financial leverage for the year of issue) it is 0.962.

There are fairly weak negative correlations between the measures of capital gearing and income gearing. This is contrary to what might have been expected, as a company with high capital gearing would usually have high interest payments and hence one would expect a positive correlation between capital and income gearing. The absence of the expected correlation could be explained by the fact that, as discussed in Chapter 6, many of the companies which issued debt capitalised the interest relating to the debt. This could also explain the generally negative correlations that were found between capital gearing measures and the elasticity measures of degree of financial leverage.

Another possible explanation is that there is some time effect involved. It may be that some companies take out debt when it is relatively cheap, i.e. when the coupon is low, whilst others

take debt out when it is expensive. The coupon therefore varies depending on when the debt is taken out. One would expect more debt to be taken out when the coupon is low, and this would lead to high capital gearing, whilst on the income gearing measure, the effect would be much less, resulting on lower income gearing, and degree of financial leverage measures.

The income gearing measures have a very strong positive correlation with the degree of operating leverage (DOL) and the various measures of degree of financial leverage (except for DFL, calculated on the Mandelker and Rhee basis). This would seem to indicate that companies with higher degrees of operating and financial leverage are more likely to take on debt.

The strong positive correlations between degree of operating leverage and the measures of degree of financial leverage indicate that operating and financial leverage elasticity measures are complements and not substitutes.

The various correlations between different measures of gearing discussed above could be indicative of multi-collinearity between the variables; for this reason one measure of gearing

only is incorporated in the probit model for any one run.

8-3-3 Correlations with Beta

As expected beta is negatively correlated with age, indicating that older companies tend to be less 'risky'; whilst it is negatively correlated with capital gearing indicating that the more highly geared a company is, the more 'risky' it is perceived as being.

The relationship between beta and the degrees of operating and financial leverage has already been discussed more fully in Chapter 5.

8-3-4 Correlations with Cash Flow Ratio

The correlations between the cash flow ratio and the measures of degree of financial leverage; and between the cash flow ratio and income gearing measures, and capital gearing measures, are positive indicating that companies with higher cash flow feel comfortable with higher levels of debt.

The cash flow ratio is negatively correlated with the age of the company indicating that the older

the company, the less healthy the cash flow ratio.

There is also a substantial negative correlation between the cash flow ratio and the manufacturing sector, indicating that companies in the manufacturing sector do not appear to have healthy cash flow ratios. This is as expected given the state of the UK manufacturing industry.

The cash flow ratio is positively correlated with the dividend cover in the year of capital issue, and it is to be expected that a higher cash flow ratio would, *ceteris paribus*, lead to a higher dividend cover.

8-3-5 Correlations with Size of Issue

The size of the issue is negatively correlated with the age of the company indicating that the older the company the smaller the size of the issue is likely to be.

There is a positive correlation between the size of the issue and the property and construction industry sector, indicating that this sector tends to make larger issues.

There are negative correlations between the size of the issue and the degree of operating leverage, and most of the measures of degree of financial leverage. This could be explained by large issues being made by companies in distress for the purpose of financial reconstruction, in which case the issues would probably not result in the increase in degree of operating leverage, and degree of financial leverage, that might be expected.

The size of the issue is positively correlated with the dividend cover in the year of capital issue, indicating that the effect on dividend cover is likely to be an important consideration in the deciding on the size of the issue.

8-4 Running the Probit Model

The probit model was run many times. This was because there were a large number of possible explanatory independent variables, but only a certain number of these were included on any one run. This was necessary for the following reasons:

(i) in order to ensure that there were enough degrees of freedom, and to try to avoid singular

hessian runs,

(ii) to help avoid any multicollinearity problems.

On each run several combinations of variables were included until some variables could be dropped completely as they did not appear to be significant.

8-5 Results of Probit Analysis

8-5-1 Initial Results

Each time that the probit analysis was run, a different measure of gearing was used so that significantly correlated variables did not affect the regression. The results of these initial runs are shown in Appendix 8-1-1 to 8-1-8.

The most significant variables arising from the runs were the gearing measure (CGPY, IGPY, etc); beta (BETA); the relative size of the issue (RS); and the dummy variable representing the capital issue method which gave the higher EPS (D2).

The regressions were therefore run again omitting in turn, the gearing measure, the beta factor,

the relative size of the issue, and the dummy variable for EPS. Beta and the relative size of the issue seemed to have less significance in these regressions, their t-ratios ultimately not being significant. Table 8.3 is a summary of the key independent variables in the PROBIT analysis, showing combinations of the gearing measures which were found to have explanatory power and the dummy EPS variable. These combinations were all run with and without IS3, the dummy variable representing industry sector 4, which seemed to have most explanatory power of the industry sector dummies.

8-5-2 Final Results

The most important finding is that the independent variable with the highest t-ratio is D2, the dummy variable for the type of capital issue which gives the higher EPS. The model which provides the best predictors of capital issue choice would contain independent variables as follows: capital gearing ratio for the year prior to issue (CGPY), the industry dummy for the property and construction sector (IS3), and the dummy variable for the type of capital issue giving the higher EPS (D2). This correctly classified 31 out of 40 (78%) of the sample. A

TABLE 8.3 : SUMMARY OF KEY INDEPENDENT VARIABLES IN PROBIT ANALYSIS

NO.	VARIABLES	T-RATIOS	NO. CORRECTLY CLASSIFIED (OUT OF 40)
(1)	ICPY D2	-1.770) 2.251)	25
(2)	ICPY D2 IS3	-1.261) 2.268) 0.367)	26
(3)	IG0 D2	-1.992) 2.309)	27
(4)	IG0 D2 IS3	-1.563) 2.284) 0.116)	27
(5)	CGPY D2	-1.780) 2.409)	29
(6)	CGPY D2 IS3	-2.211) 2.686) 1.942)	31
(7)	CG0 D2	0.568) 2.083)	27
(8)	CG0 D2 IS3	0.155) 2.296) 1.280)	27

model specified as before but omitting the industry sector correctly classified 29 out of 40 (73%). A summary of the results for these two sets of variables is shown in Table 8.4.

The implications of the model are discussed below.

8-5-3 The Debt-Equity Choice Probit Model

The following comments can be made regarding the debt-equity choice model, which includes an industry sector dummy, identified in the lower portion of Table 8.4 (it should be borne in mind that the debt-equity choice was represented by '0' for equity and '1' for debt):

(i) D2 (the dummy variable representing the financing method which results in the higher EPS) has a coefficient value of 1.36696. This indicates that a debt issue tends to result in a higher EPS than an equity issue.

(ii) CGPY (the capital gearing ratio for the year prior to issue) has a coefficient value of -0.0324. This indicates that companies with a high capital gearing ratio in the year prior to a capital issue are more likely to issue equity.

TABLE 8.4 : FINAL MODEL OF DEBT-EQUITY CHOICE

Maximum Likelihood Estimates

Log-Likelihood.....	-23.177
Restricted (Slopes=0) Log-L.	-27.526
Chi-Squared (2).....	8.6964
Significance Level.....	.12930E-01

Variable	Coefficient	Std. Error	T-ratio	Prob°t°·x	Mean of X	Std.D.of X
ONE	-.952662E-01	.492120	-.194	.84650	1.00000	.00000
CGPY	-.222463E-01	.131512E-01	-1.692	.09072	32.18600	16.93710
D2	1.14950	.449349	2.558	.01052	.57500	.50064

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

		Predicted	
Actual	TOTAL	0	1
TOTAL	40	25	15
0	22	18	4
1	18	7	11

Maximum Likelihood Estimates

Log-Likelihood.....	-20.994
Restricted (Slopes=0) Log-L.	-27.526
Chi-Squared (3).....	13.064
Significance Level.....	.45009E-02

Variable	Coefficient	Std. Error	T-ratio	Prob°t°·x	Mean of X	Std.D.of X
ONE	-.224956	.521096	-.432	.66596	1.00000	.00000
IS3	1.08487	.541074	2.005	.04496	.30000	.46410
CGPY	-.323886E-01	.149815E-01	-2.162	.03063	32.18600	16.93710
D2	1.36696	.483659	2.826	.00471	.57500	.50064

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

		Predicted	
Actual	TOTAL	0	1
TOTAL	40	23	17
0	22	18	4
1	18	5	13

(iii) IS3 (the industry sector dummy for property and construction) has a coefficient of 1.085. This indicates that companies in this sector are more likely to issue debt.

The t-ratios are 2.826 (D2), -2.162 (CGPY), and 2.005 (IS3). D2 therefore has the largest t-ratio, indicating that the effect on EPS of a particular financing method is one of the most important factors in the deciding on the type of finance.

8-5-4 Testing the Debt-Equity Model

It was decided to test the model against half of the sample of 40, so that a block of observations (13 through to 32, representing 10 equity issues and 10 debt issues) was used as a hold-out sample. Using the model containing the independent variables CGPY, IS3 and D2, 18 out of 20 (90%) of the cases were correctly classified.

Therefore the model containing the capital gearing ratio for the year prior to issue, the property and construction industry sector, and the dummy variable for the effect of the type of capital issue on the EPS would seem to be an efficient predictor of the debt-equity choice.

This is as expected given the findings in previous chapters which seem to show that

(i) both company finance directors, and the wider financial sphere (in particular analysts), place great emphasis on EPS, and

(ii) the effects on capital gearing of a proposed finance issue would appear to be considered in the context of industry 'norms', and that there is some evidence of mean reversion/debt capacity.

8-6 Conclusions

The purpose of this Chapter was to formulate a model using limited dependent variable techniques, to try to determine the influence of various variables on the debt-equity choice.

A probit model was formulated and run for a sample of companies. The results show that the model which is the best predictor of the type of capital issue which might be made by a company is one which takes into account a gearing measure (the best results being obtained from the capital gearing ratio prior to the year of issue); an industry sector measure (though it is fairly robust without this); and the effect of the type of issue on EPS (i.e. which type gives the larger EPS).

The model appears to have useful implications for some of the findings discussed in earlier Chapters. Encouragingly, the factor which seems to have the most significance is the influence of EPS, i.e the effect on the EPS of the company of a particular finance method. This therefore provides support for the argument that EPS has an influence on the debt-equity choice, and that there is functional fixation on EPS.

The next Chapter summarises the position reached based on the analysis in this thesis.

APPENDIX 8-1-1

Maximum Likelihood Estimates

Log-Likelihood.....	-.31311E-06
Restricted (Slopes=0) Log-L.	-21.170
Chi-Squared (9).....	42.340
Significance Level.....	.18996E-06

Variable	Coefficient	Std. Error	T-ratio	Prob>t*x	Mean of X	Std.D.of X
ONE	86.6739	7989.66	.011	.99134	1.00000	.00000
IS1	-9.87058	4048.55	-.002	.99805	.12500	.33601
IS2	30.7260	14775.5	.002	.99834	.18750	.39656
IS3	.358591	1997.20	.000	.99986	.15625	.36890
AGE	.437484E-01	10.1174	.004	.99655	63.62500	67.35929
BETA	-54.4420	5626.14	-.010	.99228	1.09422	.29286
RS	-2.06087	136.403	-.015	.98795	31.92156	33.27026
D2	-10.1515	1670.39	-.006	.99515	.56250	.50402
ICPY	.129510E-01	100.040	.000	.99990	13.44906	24.86025
CF	157.108	20368.1	.008	.99385	.08531	.05814

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

Predicted			
Actual	TOTAL	0	1
TOTAL	32	20	12
0	20	20	0
1	12	0	12

Maximum Likelihood Estimates

Log-Likelihood.....	-.28930E-06
Restricted (Slopes=0) Log-L.	-21.170
Chi-Squared (9).....	42.340
Significance Level.....	.18996E-06

Variable	Coefficient	Std. Error	T-ratio	Prob*t*x	Mean of X	Std.D.of X
ONE	83.9320	7629.99	.011	.99122	1.00000	.00000
IS1	-20.6102	12249.3	-.002	.99866	.12500	.33601
IS2	29.6791	8069.62	.004	.99707	.18750	.39656
IS3	.131824	2075.50	.000	.99995	.15625	.36890
AGE	.393204E-01	9.91496	.004	.99684	63.62500	67.35929
BETA	-52.7924	5179.80	-.010	.99187	1.09422	.29286
RS	-1.99049	153.753	-.013	.98967	31.92156	33.27026
D2	-9.83474	1353.05	-.007	.99420	.56250	.50402
IC0	.146599	154.411	.001	.99924	41.53844	169.79979
CF	149.221	20276.4	.007	.99413	.08531	.05814

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

Predicted			
Actual	TOTAL	0	1
TOTAL	32	20	12
0	20	20	0
1	12	0	12

APPENDIX 8-1-2

Maximum Likelihood Estimates

Log-Likelihood.....	-15.446
Restricted (Slopes=0) Log-L.	-26.917
Chi-Squared (9).....	22.942
Significance Level.....	.63286E-02

Variable	Coefficient	Std. Error	T-ratio	Prob>t ² ·x	Mean of X	Std.D.of X
ONE	1.75749	1.66689	1.054	.29172	1.00000	.00000
IS1	-7.10555	424.593	-.017	.98665	.10256	.30735
IS2	.400749	.814732	.492	.62281	.15385	.36552
IS3	1.11815	1.07776	1.037	.29952	.30769	.46757
AGE	-.523743E-02	.508876E-02	-1.029	.30338	57.12821	62.54101
BETA	-2.45545	1.32298	-1.856	.06345	1.10321	.27751
RS	-.121183E-01	.652526E-02	-1.857	.06329	36.22410	45.93384
D2	1.99734	.680925	2.933	.00335	.58974	.49831
DCPY	.293383	.296522	.989	.32246	2.26179	1.32765
CF	-5.27852	9.36294	-.564	.57291	.07333	.05886

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

Actual	Predicted		
	TOTAL	0	1
TOTAL	39	21	18
0	21	18	3
1	18	3	15

Maximum Likelihood Estimates

Log-Likelihood.....	-12.973
Restricted (Slopes=0) Log-L.	-26.917
Chi-Squared (9).....	27.888
Significance Level.....	.99579E-03

Variable	Coefficient	Std. Error	T-ratio	Prob>t ² ·x	Mean of X	Std.D.of X
ONE	.515583	1.97403	.261	.79395	1.00000	.00000
IS1	-7.00605	389.652	-.018	.98565	.10256	.30735
IS2	.297378	1.04075	.286	.77508	.15385	.36552
IS3	1.73983	1.29416	1.344	.17883	.30769	.46757
AGE	-.697311E-02	.657476E-02	-1.061	.28888	57.12821	62.54101
BETA	-2.18930	1.61344	-1.357	.17481	1.10321	.27751
RS	-.251605E-01	.103149E-01	-2.439	.01472	36.22410	45.93384
D2	2.11904	.892329	2.375	.01756	.58974	.49831
DCO	.776159	.363810	2.133	.03289	2.13256	1.38976
CF	-2.17787	8.30997	-.262	.79326	.07333	.05886

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

Actual	Predicted		
	TOTAL	0	1
TOTAL	39	21	18
0	21	18	3
1	18	3	15

APPENDIX 8-1-3

Maximum Likelihood Estimates

Log-Likelihood.....	-14.093
Restricted (Slopes=0) Log-L.	-26.917
Chi-Squared (9).....	25.648
Significance Level.....	.23319E-02

Variable	Coefficient	Std. Error	T-ratio	Prob't*x	Mean of X	Std.D.of X
ONE	3.52416	2.11365	1.667	.09545	1.00000	.00000
IS1	-7.81816	384.819	-.020	.98379	.10256	.30735
IS2	.412064	.900539	.458	.64727	.15385	.36552
IS3	1.52110	1.13662	1.338	.18081	.30769	.46757
AGE	-.714107E-02	.609369E-02	-1.172	.24125	57.12821	62.54101
CGPY	-.412916E-01	.229373E-01	-1.800	.07183	32.92026	16.50096
BETA	-2.50853	1.49999	-1.672	.09445	1.10321	.27751
RS	-.125040E-01	.684444E-02	-1.827	.06772	36.22410	45.93384
D2	2.15822	.765050	2.821	.00479	.58974	.49831
CF	-2.62379	7.71034	-.340	.73363	.07333	.05886

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

Predicted			
Actual	TOTAL	0	1
TOTAL	39	22	17
0	21	19	2
1	18	3	15

Maximum Likelihood Estimates

Log-Likelihood.....	-15.569
Restricted (Slopes=0) Log-L.	-26.917
Chi-Squared (9).....	22.696
Significance Level.....	.69156E-02

Variable	Coefficient	Std. Error	T-ratio	Prob't*x	Mean of X	Std.D.of X
ONE	1.46713	1.71000	.858	.39091	1.00000	.00000
IS1	-6.34116	274.155	-.023	.98155	.10256	.30735
IS2	.390947	.804554	.486	.62703	.15385	.36552
IS3	1.35442	1.04871	1.292	.19653	.30769	.46757
AGE	-.403590E-02	.482851E-02	-.836	.40324	57.12821	62.54101
CGO	.158958E-01	.186262E-01	.853	.39343	30.04462	16.60732
BETA	-2.62018	1.32158	-1.983	.04741	1.10321	.27751
RS	-.140148E-01	.708439E-02	-1.978	.04790	36.22410	45.93384
D2	1.97982	.692058	2.861	.00423	.58974	.49831
CF	2.26197	7.57756	.299	.76531	.07333	.05886

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

Predicted			
Actual	TOTAL	0	1
TOTAL	39	20	19
0	21	16	5
1	18	4	14

APPENDIX 8-1-4

Maximum Likelihood Estimates

Log-Likelihood.....	-.24715E-06
Restricted (Slopes=0) Log-L.	-21.170
Chi-Squared (9).....	42.340
Significance Level.....	.18996E-06

Variable	Coefficient	Std. Error	T-ratio	Prob>t*x	Mean of X	Std.D.of X
ONE	88.7415	18462.9	.005	.99616	1.00000	.00000
IS1	-12.3786	5983.97	-.002	.99833	.12500	.33601
IS2	27.4386	6457.79	.004	.99661	.18750	.39656
IS3	15.8046	9858.10	.002	.99872	.15625	.36890
AGE	.262338E-01	14.5118	.002	.99856	63.62500	67.35929
IGPY	-.254951E-01	2.71971	-.009	.99252	32.83688	542.82049
BETA	-54.1368	14808.7	-.004	.99708	1.09422	.29286
RS	-1.88992	145.982	-.013	.98967	31.92156	33.27026
D2	-8.88810	2565.14	-.003	.99724	.56250	.50402
CF	109.744	20007.7	.005	.99562	.08531	.05814

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

		Predicted	
Actual	TOTAL	0	1
TOTAL	32	20	12
0	20	20	0
1	12	0	12

Maximum Likelihood Estimates

Log-Likelihood.....	-.30489E-06
Restricted (Slopes=0) Log-L.	-21.170
Chi-Squared (9).....	42.340
Significance Level.....	.18996E-06

Variable	Coefficient	Std. Error	T-ratio	Prob>t*x	Mean of X	Std.D.of X
ONE	91.2531	30612.2	.003	.99762	1.00000	.00000
IS1	-10.1386	13689.2	-.001	.99941	.12500	.33601
IS2	31.0223	7686.03	.004	.99678	.18750	.39656
IS3	8.10905	7355.22	.001	.99912	.15625	.36890
AGE	.450387E-01	28.7485	.002	.99875	63.62500	67.35929
IG0	.148287E-01	14.4202	.001	.99918	5.11937	161.41268
BETA	-58.3711	29542.6	-.002	.99842	1.09422	.29286
RS	-2.11636	197.483	-.011	.99145	31.92156	33.27026
D2	-10.3533	8068.36	-.001	.99898	.56250	.50402
CF	162.608	47648.0	.003	.99728	.08531	.05814

4)

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

		Predicted	
Actual	TOTAL	0	1
TOTAL	32	20	12
0	20	20	0
1	12	0	12

APPENDIX 8-1-5

Maximum Likelihood Estimates

Log-Likelihood.....	-15.559
Restricted (Slopes=0) Log-L.	-25.633
Chi-Squared (9).....	20.149
Significance Level.....	.17017E-01

Variable	Coefficient	Std. Error	T-ratio	Prob>t°·x	Mean of X	Std.D.of X
ONE	2.16987	1.68817	1.285	.19867	1.00000	.00000
IS1	-5.87165	316.339	-.019	.98519	.08108	.27672
IS2	.510056	.898108	.568	.57009	.13514	.34658
IS3	1.05972	1.10750	.957	.33864	.32432	.47458
AGE	-.442198E-02	.496427E-02	-.891	.37306	59.86486	63.07058
DFL	-.133959	.261098	-.513	.60791	1.12042	1.11384
BETA	-2.33980	1.30939	-1.787	.07395	1.11038	.28054
RS	-.125464E-01	.678283E-02	-1.850	.06435	36.73486	47.11353
D2	1.88747	.701675	2.690	.00715	.59459	.49774
CF	-1.28253	7.89466	-.162	.87095	.07405	.06021

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

		Predicted	
Actual	TOTAL	0	1
TOTAL	37	18	19
0	19	14	5
1	18	4	14

APPENDIX 8-1-6

Maximum Likelihood Estimates

Log-Likelihood.....	-.27266E-06
Restricted (Slopes=0) Log-L.	-21.170
Chi-Squared (9).....	42.340
Significance Level.....	.18996E-06

Variable	Coefficient	Std. Error	T-ratio	Prob>t°·x	Mean of X	Std.D.of X
ONE	89.0194	8646.14	.010	.99179	1.00000	.00000
IS1	-9.78067	4523.66	-.002	.99827	.12500	.33601
IS2	49.4619	57597.4	.001	.99931	.18750	.39656
IS3	.356182	2134.51	.000	.99987	.15625	.36890
AGE	.454858E-01	8.79837	.005	.99588	63.62500	67.35929
BETA	-55.8505	5334.38	-.010	.99165	1.09422	.29286
RS	-2.10579	178.137	-.012	.99057	31.92156	33.27026
D2	-10.6684	1790.62	-.006	.99525	.56250	.50402
DFLPY	-.246786	783.190	.000	.99975	3.20188	12.65958
CF	165.120	24218.2	.007	.99456	.08531	.05814

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

Predicted			
Actual	TOTAL	0	1
TOTAL	32	20	12
0	20	20	0
1	12	0	12

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APPENDIX 8-1-8

Least Squares Regression						
Dependent Variable	DE	Number of Observations		29		
Mean of Dep. Var.	.413793	Std. Dev. of Dep. Var.		.501230		
Std. Error of Regr.	.430493	Sum of Sqrd. Residuals		3.521161		
R - squared	.499443	Adjusted R - Squared		.332590		
Variable	Coefficient	Std. Error	T-ratio	Prob>t²·x	Mean of X	Std.D.of X
ONE	.836423	.448663	1.864	.06229	1.00000	.00000
IS1	-.461088	.365050	-1.263	.20656	.06897	.25788
IS2	.875821E-01	.233642	.375	.70777	.17241	.38443
IS3	.183228	.343310	.534	.59354	.17241	.38443
AGE	-.884072E-03	.135372E-02	-.653	.51371	64.51724	67.15420
DOL	-.116267E-02	.223597E-01	-.052	.95853	1.54918	4.00032
BETA	-.385975	.334543	-1.154	.24861	1.10597	.30234
RS	-.858657E-02	.288401E-02	-2.977	.00291	32.87897	34.76933
D2	.334631	.200987	1.665	.09593	.55172	.50612
CF	1.62720	2.15771	.754	.45077	.08966	.05871

Least Squares Regression						
Dependent Variable	DE	Number of Observations		29		
Mean of Dep. Var.	.413793	Std. Dev. of Dep. Var.		.501230		
Std. Error of Regr.	.428223	Sum of Sqrd. Residuals		3.484128		
R - squared	.504707	Adjusted R - Squared		.339610		
Variable	Coefficient	Std. Error	T-ratio	Prob>t²·x	Mean of X	Std.D.of X
ONE	.833112	.446340	1.867	.06197	1.00000	.00000
IS1	-.446069	.359575	-1.241	.21477	.06897	.25788
IS2	.111119	.234350	.474	.63539	.17241	.38443
IS3	.196597	.333004	.590	.55494	.17241	.38443
AGE	-.772397E-03	.136346E-02	-.566	.57105	64.51724	67.15420
DCL	.185758E-02	.410587E-02	.452	.65097	5.35363	21.21498
BETA	-.403224	.331137	-1.218	.22334	1.10597	.30234
RS	-.837710E-02	.290537E-02	-2.883	.00394	32.87897	34.76933
D2	.323370	.199054	1.625	.10426	.55172	.50612
CF	1.57548	2.14904	.733	.46349	.08966	.05871

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CHAPTER 9 : CONCLUSIONS

9-1 Introduction

In Chapter 1 it was argued that there is a widely held perception that excessive weight is given to the Earnings Per Share (EPS) figure by analysts and others. This leads to functional fixation on EPS - an implication of this fixation being that the directors of companies will make decisions which maximise EPS, particularly short-term EPS.

It is argued that this emphasis on EPS extends to the capital issue choice between debt and equity, and that the relative effect of each type of finance on EPS is therefore relevant to the financing decision.

At this point, it is helpful to review the development of the thesis.

9-2 Review of Earlier Chapters

In Chapter 2, after an extensive review of the literature, it was concluded that there is no consensus on optimal financial structure and the related problem of optimal methods of financing.

The analysis tends to concentrate, usually in an

insular fashion, on a single analytical paradigm. The main theoretical perspectives - fundamentalist, agency, 'pecking order', signalling, and functional fixation, were discussed, and the empirical evidence relating to each view was examined.

The empirical studies are often contradictory, and no one approach dominates. However, looking at what actually happens in practice, it would seem that there is an emphasis on EPS, and that the idea of functional fixation on EPS is supported by the hard evidence of company financial reporting procedures. Indeed, as Tweedie and Whittington (1990) state, it is 'the apparently excessive weight given by financial analysts to "bottom line" earnings figures', page 97, which has led to the recent introduction of FRS3 'Reporting Financial Performance'. FRS3 is an attempt to remove this emphasis on EPS.

There is much comment regarding the influence of EPS, both explicit and implicit, in finance decisions. It is therefore likely to be an important factor in the type of finance that is chosen by a company.

It was decided to seek the opinions of company

finance directors, and a questionnaire was sent to them to elicit their views in relation to the factors affecting the debt-equity choice. This was discussed in Chapters 3 and 4.

It was argued that there is a triangular set of influences (firm specific, external, economic factors, and advice of financial intermediaries) which influences the type of finance chosen. The firm specific factors (effect on EPS, dividend level, leverage, etc.) seemed to dominate all the issue types except for debt, for which external economic factors (for example, the level of interest rates), is also perceived as important.

The factor analysis of the questionnaires carried out in Chapter 4 identified two significant factors. Factor 1 is linked to the financial variables of the individual firm, whilst factor 2 places more emphasis on the background aspects of market information. The effect of a particular type of finance on the company's ability to maintain or increase EPS ('Epslevel') is the variable most heavily loaded of any of the variables on either factor.

Overall the finance directors appear to perceive EPS as one of the most important influences on

the type of finance chosen.

In Chapter 5 EBIT-EPS analysis is extended to provide formulae to help a company to decide which method of finance is preferred on the basis of EBIT-EPS analysis. An attempt is made to take account of risk by looking at the 'elasticities' with respect to key risk variables. The degrees of operating and financial leverage were estimated using a variety of techniques.

An original contribution is made in particular by the reconstruction of a sample of company's income statements to determine what the effects of an alternative form of finance would have been. The results are particularly striking for debt, whereby nearly all of the companies which originally issued debt would suffered a reduction in EPS if they had issued equity instead.

In Chapter 7, the effects on key accounting ratios of the original issue and the reconstruction (alternative) issue are compared. There is evidence of mean reversion and debt capacity with more highly geared companies tending to issue equity, and less highly geared companies issuing debt. Companies would also appear to make issues which push their capital

gearing into line with industry averages.

For the year prior to the capital issue, the interest cover of the companies which issued equity in the subsequent year tended to be lower than the interest cover for the companies which subsequently issued debt.

The formulae derived in Chapter 5 are used to classify the types of issue, based on which type would be preferred on the basis of EBIT-EPS analysis. The formulae would appear to be a useful guide in this area.

Finally, in Chapter 8, a limited dependent variable model was developed. Probit analysis was used to model the debt-equity choice. The model which was the best predictor of the type of capital issue made by a company was one which incorporated a capital gearing measure; an industry sector measure; and the effect of the type of issue on EPS. The latter variable appeared to have the most significance in this model.

9-3 Consistency of the Theory with the Evidence

As mentioned earlier, the theories surrounding

the debt-equity choice are many and diffuse. As Myers (1984) stated 'our theories don't seem to explain actual financing behaviour'.

The evidence presented in this thesis shows that an emphasis on EPS is apparent in the attitudes of analysts and, so almost inevitably, in the attitudes of company finance directors. This functional fixation on EPS also appears to impact on the debt-equity choice.

9-4 Conclusions

The perceptions of analysts and finance directors appear to be heavily influenced by the impact of any particular decision on the EPS of a company, particularly short-term EPS.

The findings presented in this thesis show that there appears to be functional fixation on EPS, and that the debt-equity choice is subject to analysis in terms of the effect of a particular type of finance on EPS.

In conclusion, the finance choice can be explained by, or at least is consistent with, the maximisation of EPS. Therefore evidence of functional fixation on EPS is apparent in

financing decisions. An interesting topic for future research is to try to determine the extent to which functional fixation on EPS impacts on other areas of finance and financial accounting.

UNIVERSITY OF NOTTINGHAM
CAPITAL ISSUES QUESTIONNAIRE

Ref.	Date issued __/__/__
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The purpose of this questionnaire is to provide information to see if there are general opinions on company financing decisions.

The information provided by you will be anonymous and will contribute to summary statistics only.

SECTION A

This section asks for background information on your company which will be useful in our analysis of the survey findings. Please answer if you are able to.

1. (i) Age of Company years
- (ii) Turnover of Company £
- (iii) Industry sector (eg Manufacturing, or SIC code)
-

SECTION B

Please answer the following questions about your financial intermediaries and the service that they have provided in relation to any capital issues you have made.

2.

(i)	How would you rate the advice you have received from the financial intermediary:		Very Poor		Neutral		Very good
			1	2	3	4	5
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Merchant Banker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Broker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(ii)	In relation to the service provided, do you consider the fees were:		Extremely Expensive		Neutral		Very Reasonable
			1	2	3	4	5
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Merchant Banker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Broker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Accountant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						

SECTION C

If more than one major capital issue has been made in the last 5 years, please answer this section regarding the most recent issue, and then give details of earlier issues in Section D.

3. The most recent issue was:

Ordinary shares	- new issues	<input type="checkbox"/>
	- rights	<input type="checkbox"/>
Preference shares	- new issue	<input type="checkbox"/>
	- rights issue	<input type="checkbox"/>
Convertible debt		<input type="checkbox"/>
Non-convertible debt		<input type="checkbox"/>
Other - please specify	

4. Please provide the following information if you are able to, regarding the most recent issue.

- (i) What was the total amount of the issue in (a) nominal value and (b) proceeds?
- (ii) What was the (a) nominal value and (b) issue price, per share or per bond (debenture) issued?
- (iii) What type of capital instrument was used?
- (iv) What was the coupon rate *(if appropriate)*?
- (v) What was the redemption date *(if appropriate)*?
- (vi) What were the total issue costs?
- (vii) What was the make-up of the issue costs in (v):

Issuing house

Accountants

Legal fees

Stamp duty

Other costs (including printing) *(please specify)*

5. How important were each of the following in choosing your particular method?
Please rank on a scale from 1 = not at all important to 5 = very important.

*Answer either part (a) or part (b)
for questions (i) - (iii)*

		Not at all Important				Very Important
		1	2	3	4	5
i)	Firm's share price was considered					
	to be a) high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) low	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii)	Stock market prices as a whole					
	were a) high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) low	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii)	The level of interest rates was					
	a) high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) low	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Not at all Important 1	2	3	4	Very Important 5
iv)	Leverage would have been too high if more debt were issued.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
v)	To meet target debt - equity ratio.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
vi)	To signal the firm's strength.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
vii)	Merchant bank/other advisors recommendation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<i>If your company was tax exhausted:</i>					
viii)	Company tax exhausted, so unable to use tax relief on debt interest.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<i>If your company did not issue equity:</i>					
ix)	Did not want to dilute EPS by issuing more equity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
x)	Other - <i>please specify</i>					

6. Has your company also raised finance through significantly increasing bank borrowing?

Not at all	Slightly	Moderately	Substantially
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Was the primary purpose of the most recent issue:

[1]	To fund an acquisition	<input type="checkbox"/>
[2]	To fund an internal project, investment or expansion	<input type="checkbox"/>
[3]	Capital restructuring or loan repayment	<input type="checkbox"/>
	Other - <i>please specify</i>	

8. Who were your merchant bankers/advisors for the issue?

SECTION D

For companies which have made more than one capital issue in the last 5 years.

9.

Date of Issue	Total Nominal Value of Issue	Proceeds of Issue	Type of Capital Investment Issued (eg Convertible 20 year Debt)	Coupon Rate (If applicable)	Purpose of Issue*	Merchant bankers/advisors to the issue

* You may find it helpful to give a number [1], [2] or [3] corresponding to the reasons in Question 7.

10. If you changed merchant bankers/advisors why was this?

11. When making capital issues or acquisitions, please score the following factors in terms of their importance to the method chosen.

	Unimportant				Very Important
	1	2	3	4	5
(i) Maintaining or increasing earnings per share	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(ii) Enhancing the capacity to maintain dividend levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(iii) Prevailing market conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(iv) Behaviour of other companies in the industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(v) Advice of financial advisors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(vi) Attitude of shareholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(vii) Effect on leverage of company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. Were there significant differences in the reasons you would have given for choosing a particular method of raising finance and those given by the financial intermediary?

Yes

☐

No

☐

If there were such differences, please outline them below.

-
13. Would you be interested in taking part in a more detailed one-to-one discussion on your capital issues?

Yes

☐

No

☐

If yes, please give your name, address and telephone number (including extension)

By telephone ☐

In person ☐

SECTION E

This section is for any comments that you may wish to make about your company's capital issues, or any financial advice that you have received.

**A stamped address envelope is enclosed for your reply. Please return to:
Ms C A Mallin BSc ACA, Lecturer in Accounting & Finance, School of Management & Finance,
Social Sciences Building, University of Nottingham, University Park, Nottingham NG7 2RD.**

I look forward to your response and thank you for the time you have taken in completing this questionnaire.

APPENDIX 3-2

LIST 4 - ALL COMPANIES - ALPHABETICAL

Abbey National Building Society Plc	Brandon Hire Plc
ABI Leisure Group Plc	Bredero Properties Plc
ACSIS Group Plc	Britannia Group Plc
Adscene Group Plc	Britannia Security Group Plc
Airtours Plc	British Gas Plc
Aitken Hume International Plc	British Airways plc
Albert Fisher Group Plc	British Island Airways Plc
Alexon Group Plc	British Petroleum Plc
Allied Lyons Plc	British Telecommunications Plc
Alphameric Plc	British Land Plc
Amber Day Holdings Plc	Brixton Estate Plc
Anglia Secure Homes Plc	Brooks Service Group Plc
Anglian Water Plc	Bryant Group Plc
Anglo United Plc	Bunzl Plc
Appleby Westward Group Plc	Burton Group Plc
Appleyard Group Plc	Business Technology Group Plc
Argyll Group Plc	Calor Group Plc
Asda Group Plc	Campbell & Armstrong Plc
Associated Farmers Plc	Cannon Street Investments Plc
Astra Holdings Plc	Capital Radio Plc
ASW Holdings Plc	Capital and Counties Plc
Avesco Plc	Caradon Plc
Avon Rubber Plc	Carbo Plc
B Elliott Plc	Carlton Communications Plc
B.E.T. Plc	Casket Plc
Baker Harris Saunders Group Plc	Caspen Oil Plc
Barbour Index Plc	Cater Allen Ltd
Barclays Bank Plc	Chelsea Man Plc
Barlows Plc	City Sites Estates Plc
Barry Wehmiller International Plc	Clarke-Hooper Plc
Bass Plc	Clinton Cards Ltd
BBA Group Plc	Cluff Resources Plc
BDA Holdings Plc	Clyde Petroleum Plc
Beckenham Group Plc	Coats Viyella Plc
Bellway Plc	Colefax and Fowler Group Plc
Bennett & Fountain Plc	Commercial Union Plc
Benson Group Plc	Community Hospitals Group Plc
Benson Crisps Plc	Conrad David (Sales)
Betacom Plc	Control Techniques Plc
BHH Group Plc	Cook (William) Steel Castings Ltd
BICC Plc	Cookson Group Plc
BIMEC Industries Plc	Copymore Plc
Bioplan Holdings Plc	Corton Beach Plc
Birse Group Plc	Courtaulds Textiles Plc
Blacks Leisure Group Plc	Crossroads Oil
BLP Group Plc	Crown Eyeglass Plc
Blue Circle Industries Plc	Crown Communications Group Plc
Booker Plc	Cullen's Holding Plc
Border Television Plc	Dagenham Motors Group Plc
Bostrom Plc	Dalepak Foods Plc
Bowater Plc	Danbury Group Plc

Dares Estates Plc
 Dawson Group Plc
 De La Rue Thomas & Co Ltd
 Debenham Tewson & Chinnocks Holdings
 Dencora Plc
 Dolphin Packaging Plc
 Domino Printing Sciences Plc
 Donelon Tyson Plc
 Downiebrae Holdings Plc
 Eadie Holdings Plc
 Eagle Trust Plc
 Edinburgh Fund Managers Plc
 Electronic Data Processing Plc
 Enterprise Oil Plc
 Epwin Group Plc
 ERA Group Plc
 Erskine House Group Plc
 Essex Furniture Plc
 Estates and General Investments Plc
 Eurotunnel Plc
 Evered Plc
 Federated Housing Plc
 Fenner J H (Holdings) Plc
 FII Group Plc
 First Technology Plc
 Fisons Plc
 Five Oaks Investments Plc
 Forward Technology Industries Plc
 Forwell Group Plc
 Freeman Group Plc
 Friendly Hotels Plc
 Geest Plc
 Gerrard & National Holdings Plc
 Gestetner Holdings Plc
 Goal Petroleum Plc
 Goldsmiths Group Plc
 Great Portland Estates Plc
 Greycoat Plc
 Guinness Plc
 GWR Group Plc
 Hadleigh Industries Plc
 Haemocell Plc
 Halls Homes & Gardens Plc
 Hampson Industries Plc
 Hanson Trust Plc
 Harding Group Plc
 Harland Simon Group Plc
 Hartons Group Plc
 Hawthorn Leslie Group Plc
 Hays Plc
 Helical Bar Plc
 Hewetson Plc
 Heywood Williams Group Plc

Hi-Tec Sports Plc
 Hickson International Plc
 Holders Technology Plc
 Holmes & Marchant Group Plc
 Horace Clarkson Plc
 Hoskins Brewery Plc
 Hoskyns Group Plc
 Hunterprint Group Plc
 Imperial Chemical Industries Plc
 INOCO Plc
 International Communications & Data
 International Communications Data Plc
 International Media Communications Plc
 Invergordon Distillers Group Plc
 Invicta Sound Plc
 ISA International Plc
 J Sainsbury Plc
 James Crosby Group Plc
 Jeyes Group Ltd
 John Foster & Son Plc
 John Lewis Plc
 Johnson Group Cleaners Plc
 Johnstone Press Plc
 Kembrey Plc
 Ketson Plc
 Kleinwort Benson Group Plc
 Kunwick Holdings Plc
 Kwik-Fit Ltd
 Ladbroke Group Plc
 Land Securities Plc
 Laporte Plc
 Lasmo Trading Ltd
 Lawrence (Walter) Plc
 Laws Stores Plc
 Legal & General Group Plc
 LGW Plc
 Life Sciences International Plc
 Lloyds Chemists Plc
 Lloyds Bank Plc
 Logitek Plc
 London Forfaiting Co Plc
 Low & Bonar Plc
 Lucas Industries Plc
 M L Laboratories
 M L Holdings Plc
 Mallett Plc
 Marks & Spencer Plc
 Marling Industries Plc
 Marshalls Plc
 McLaughlin & Harvey Plc
 Medminster Plc
 MEPC Plc
 Micklegate Group Plc

Midland Bank Plc
Midlands Electricity Plc
MISYS Plc
MMI Plc
Morgan Crucible Plc
Mountleigh Group Plc
Mowat Group Plc
National Westminster Bank Plc
National Home Loans Corporation Plc
Nestle Co. Ltd
Nestor - BNA Plc
Newman-Tonks Group Plc
Next Plc
NMC Group Plc
Norfolk House Group Plc
North Sea Assets
Northumbrian Fine Foods Plc
NSM Plc
NWW Computers Plc
Optim Group Plc
P-E International Plc
Parkfield Group Plc
Peel Holdings Plc
Penny & Giles International Plc
Perkins Foods Plc
Petrocon Group Plc
Plateau Mining Plc
Plc
Polypipe Plc
Portmeirion Potteries Plc
Prism Leisure Corporation Plc
Prowting Plc
Psion Plc
Quadrant Group Plc
Queens Moat Houses Plc
Rank Organisation Plc
Ranks Hovis McDougall Plc
Ratners Group Plc
Rea Brothers Group Plc
Readicut International Plc
Reckitt & Colman Plc
Record Holdings Plc
Redland Plc
Regalian Properties
Resort Hotels Plc
Richmond Oil & Gas Plc
Rolls Royce Plc
Rosehaugh Plc
Royal Bank of Scotland Plc
RTZ Corporation
Saatchi & Saatchi Plc
Savage Group Plc
Scott Pickford Plc

Scottish Television Plc
Scottish Metropolitan Property Plc
Sears Plc
Security Archives Plc
Security Services Plc
Sedgwick Group Plc
Senior Engineering Plc
SEP Industrial Holdings Plc
Serif Cowells Plc
Shandwick Plc
Shani Group Plc
Sidlaw Group Plc
Siebe Plc
Singer and Friedlander Holdings Ltd
Sketchley Plc
South Western Electricity Plc
South West Water Plc
Spandex Plc
Speyhawk Plc
St Ives Group Plc
St Modwen Properties Plc
Standard Chartered Bank Plc
Standard Platforms Holdings Plc
Stat-Plus Group Plc
Sterling Industries Plc
Storehouse Plc
Sun Life Corporation Plc
Sunset & Vine Plc
Sutcliffe Speakman Plc
Swallowfield Plc
Swanyard Studios
T R Energy Plc
Tate & Lyle Plc
Tay Homes Plc
Tesco Plc
TGI Plc
The Pelican Group Plc
The Gardiner Group Plc
The Weir Group Plc
The Wensum Company Plc
Thomson T-Line Plc
Thorntons Plc
Tibbett & Britten Ltd
Tiphook Plc
Tomkins Plc
Tops Estates Plc
Torday & Carlisle Plc
Trace Computers Plc
Trafalgar House Plc
Trillion Plc
TSW - TV South West Ltd
TT Group Plc
UDO Holdings Plc

UK Land Plc
Ultramar Plc
Unichem Plc
Unilever Plc
United Biscuits Plc
Verson International Plc
Vibroplant Plc
Victaulic Plc
Volvo Trucks Plc
Vsel Consortium Plc
Wace Group Plc
Wagon Industrial Holdings Plc
Walter Alexander Plc
Warner Howard Group Plc
Watmoughs (Holdings) Plc
Wellcome Plc
Wescol Group Plc
Westbury Plc
Westland Plc
Wheway Plc
Wickes Group Plc
Wiggins Teape Plc
Williams Holdings Plc
Wilshaw Securities Plc
Wilson Bowden Plc
Wire & Plastic Products Ltd
Worcester Group Plc
WYKO Group Plc
Wyndham Group Plc

**DAMAGED
TEXT
IN
ORIGINAL**

APPENDIX 3-3

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6	0	TURNOVER
7	0	INDSEC
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9	0	ADVBRK
10	0	ADVACC
11	0	ADVOTHER
12	0	COSTMB
13	0	COSTBRK
14	0	COSTACC
15	0	CUSTOTHE
16	0	RECISS1
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18	0	MONTHIS1
19	0	YEARISS1
20	0	RCISTNV1
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27	0	TOTCOST1
28	0	ISSHCOS1
29	0	ACCCOST1
30	0	LEGFEES1
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45	0	OTHER
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54	0	RCISTPR2
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72	0	YEARISS4
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74	0	RCISTPR4
75	0	RCISTYP4
76	0	COUPONR4

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79	U	ADVISO04
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82	U	YEARISS4
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84	U	PCISTPR0
85	U	PCISTYP0
86	U	COUPONR0
87	U	PCISPUR0
88	U	MERCHB05
89	U	ADVISO05
90	U	DAYISS5
91	U	MONTHISS5
92	U	YEARISS5
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94	U	PCISTPR5
95	U	PCISTYP5
96	U	COUPONR5
97	U	PCISPUR5
98	U	MERCHB06
99	U	ADVISO06
100	U	CHANGEND
101	U	EPSLEVEL
102	U	DIVLEVEL
103	U	PREVMKT
104	U	INDOFRAV
105	U	ADVFINAD
106	U	ATTSHAPH
107	U	LEVLPAGE
108	U	FINTDIFF
109	U	VARIABLE LABELS
110	U	CODE 'QUESTIONNAIRE CODE'
111	U	AGE 'AGE OF COMPANY'
112	U	TURNVER 'TURNOVER OF COMPANY'
113	U	INDSFC 'INDUSTRY SECTOR'
114	U	ADVMB 'HOW RATE ADVICE FROM MERCHANT BANKER'
115	U	ADVBRK 'HOW RATE ADVICE FROM BROKER'
116	U	ADVACC 'HOW RATE ADVICE FROM ACCOUNTANT'
117	U	ADVOTHR 'HOW RATE ADVICE FROM OTHER ADVISORS'
118	U	CUSTMB 'SERVICE PROVIDED BY MERCHANT BANKER IN RELATION TO FEES'
119	U	CUSTBRK 'SERVICE PROVIDED BY BROKER IN RELATION TO FEES'
120	U	CUSTACC 'SERVICE PROVIDED BY ACCOUNTANT IN RELATION TO FEES'
121	U	CUSTOTHR 'SERVICE PROVIDED BY OTHER ADVISORS IN RELATION TO FEES'
122	U	RECISS1 'TYPE OF MOST RECENT ISSUE'
123	U	DAYISS1 'DAY OF MOST RECENT ISSUE'
124	U	MONTHISS1 'MONTH OF MOST RECENT ISSUE'
125	U	YEARISS1 'YEAR OF MOST RECENT ISSUE'
126	U	PCISTNV1 'TOTAL AMOUNT IN NOMINAL VALUE OF MOST RECENT ISSUE'
127	U	PCISTPR1 'TOTAL AMOUNT OF PROCEEDS OF MOST RECENT ISSUE'
128	U	PCISTNV1 'NOMINAL VALUE PER SHARE OR BOND ISSUED'
129	U	PCISTPR1 'ISSUE PRICE PER SHARE OR BOND ISSUED'
130	U	PCISTYP1 'TYPE OF CAPITAL INSTRUMENT USED'
131	U	COUPONR1 'COUPON RATE'
132	U	REDUAT1 'REDEMPTION DATE'
133	U	TOTCOST1 'TOTAL ISSUE COSTS'
134	U	ISSHCOS1 'ISSUING HOUSE COSTS'
135	U	ACCCOST1 'ACCOUNTANTS COSTS'
136	U	LEGFEES1 'LEGAL FEES'
137	U	SDUTCOS1 'STAMP DUTY'
138	U	OTHFCOST1 'OTHER COSTS (INCLUDING PRINTING)'
139	U	FIRMSHPH 'FIRMS SHARE PRICE WAS CONSIDERED TO BE HIGH'
140	U	FIRMSHPL 'FIRMS SHARE PRICE WAS CONSIDERED TO BE LOW'
141	U	STKATPH 'STOCK MARKET PRICES AS A WHOLE WERE HIGH'
142	U	STKATPL 'STOCK MARKET PRICES AS A WHOLE WERE LOW'
143	U	INTRATEH 'LEVEL OF INTEREST RATES WAS HIGH'
144	U	INTRATEL 'LEVEL OF INTEREST RATES WAS LOW'
145	U	HIGHLEVH 'LEVERAGE WOULD HAVE BEEN TOO HIGH'
146	U	TARGETDE 'TO MEET TARGET DEBT-EQUITY RATIO'
147	U	SIGNAL 'TO SIGNAL THE FIRMS STRENGTH'
148	U	MSADVREC 'MERCHANT BANK OR OTHER ADVISORS RECOMMENDATION'
149	U	TAXEXH 'IF CO. TAX EXHAUSTED, SO UNABLE TO USE TAX RELIEF ON DEBT INT'
150	U	EPSDILUT 'IF CO. DID NOT ISSUE EQUITY, DID NOT WANT TO DILUTE EPS'
151	U	OTHR 'OTHER REASONS IMPORTANT IN CHOOSING PARTIC. FINANCING METHOD'
152	U	INCRBANK 'FINANCE ALSO RAISED THROUGH INCR. BANK BORROWING'
153	U	PCISPUR1 'PRIMARY PURPOSE OF MOST RECENT ISSUE'
154	U	MERCHB01 'MERCHANT BANKERS FOR MOST RECENT ISSUE'
155	U	ADVISO01 'ADVISORS TO MOST RECENT ISSUE'
156	U	DAYISS2 'DAY OF 2ND MOST RECENT ISSUE'
157	U	MONTHISS2 'MONTH OF 2ND MOST RECENT ISSUE'
158	U	YEARISS2 'YEAR OF 2ND MOST RECENT ISSUE'
159	U	PCISTNV2 'TOTAL NOMINAL VALUE OF 2ND MOST RECENT ISSUE'
160	U	PCISTPR2 'TOTAL PROCEEDS OF 2ND MOST RECENT ISSUE'
161	U	PCISTYP2 'TYPE OF CAPITAL INSTRUMENT ISSUED FOR 2ND MOST RECENT'
162	U	COUPONR2 'COUPON RATE ON 2ND MOST RECENT ISSUE'
163	U	PCISPUR2 'PURPOSE OF 2ND MOST RECENT ISSUE'
164	U	MERCHB02 'MERCHANT BANKER TO 2ND ISSUE'
165	U	ADVISO02 'ADVISORS TO 2ND ISSUE'
166	U	DAYISS3 'DAY OF 3RD MOST RECENT ISSUE'
167	U	MONTHISS3 'MONTH OF 3RD MOST RECENT ISSUE'
168	U	YEARISS3 'YEAR OF 3RD MOST RECENT ISSUE'
169	U	PCISTNV3 'TOTAL NOMINAL VALUE OF 3RD MOST RECENT ISSUE'
170	U	PCISTPR3 'TOTAL PROCEEDS OF 3RD MOST RECENT ISSUE'
171	U	PCISTYP3 'TYPE OF CAPITAL INSTRUMENT ISSUED FOR 3RD MOST RECENT'
172	U	COUPONR3 'COUPON RATE ON 3RD MOST RECENT ISSUE'

173	U	RCISDUP3	'PURPOSE OF 3RD MOST RECENT ISSUE'
174	U	MERCHBK3	'MERCHANT BANKER TO 3RD ISSUE'
175	U	ADVISOR3	'ADVISORS TO 3RD ISSUE'
176	U	DAYISS4	'DAY OF 4TH MOST RECENT ISSUE'
177	U	MONTHISS4	'MONTH OF 4TH MOST RECENT ISSUE'
178	U	YEARISS4	'YEAR OF 4TH MOST RECENT ISSUE'
179	U	RCISTNV4	'TOTAL NOMINAL VALUE OF 4TH MOST RECENT ISSUE'
180	U	RCISTPR4	'TOTAL PROCEEDS OF 4TH MOST RECENT ISSUE'
181	U	RCISTYP4	'TYPE OF CAPITAL INSTRUMENT ISSUED FOR 4TH MOST RECENT'
182	U	COUPONR4	'COUPON RATE ON 4TH MOST RECENT ISSUE'
183	U	RCISPUR4	'PURPOSE OF 4TH MOST RECENT ISSUE'
184	U	MERCHBK4	'MERCHANT BANKER TO 4TH ISSUE'
185	U	ADVISOR4	'ADVISORS TO 4TH ISSUE'
186	U	DAYISS5	'DAY OF 5TH MOST RECENT ISSUE'
187	U	MONTHISS5	'MONTH OF 5TH MOST RECENT ISSUE'
188	U	YEARISS5	'YEAR OF 5TH MOST RECENT ISSUE'
189	U	RCISTNV5	'TOTAL NOMINAL VALUE OF 5TH MOST RECENT ISSUE'
190	U	RCISTPR5	'TOTAL PROCEEDS OF 5TH MOST RECENT ISSUE'
191	U	RCISTYP5	'TYPE OF CAPITAL INSTRUMENT ISSUED FOR 5TH MOST RECENT'
192	U	COUPONR5	'COUPON RATE ON 5TH MOST RECENT ISSUE'
193	U	RCISPUR5	'PURPOSE OF 5TH MOST RECENT ISSUE'
194	U	MERCHBK5	'MERCHANT BANKER TO 5TH ISSUE'
195	U	ADVISOR5	'ADVISORS TO 5TH ISSUE'
196	U	DAYISS6	'DAY OF 6TH MOST RECENT ISSUE'
197	U	MONTHISS6	'MONTH OF 6TH MOST RECENT ISSUE'
198	U	YEARISS6	'YEAR OF 6TH MOST RECENT ISSUE'
199	U	RCISTNV6	'TOTAL NOMINAL VALUE OF 6TH MOST RECENT ISSUE'
200	U	RCISTPR6	'TOTAL PROCEEDS OF 6TH MOST RECENT ISSUE'
201	U	RCISTYP6	'TYPE OF CAPITAL INSTRUMENT ISSUED FOR 6TH MOST RECENT'
202	U	COUPONR6	'COUPON RATE ON 6TH MOST RECENT ISSUE'
203	U	RCISPUR6	'PURPOSE OF 6TH MOST RECENT ISSUE'
204	U	MERCHBK6	'MERCHANT BANKER TO 6TH ISSUE'
205	U	ADVISOR6	'ADVISORS TO 6TH ISSUE'
206	U	CHANGEM3	'CHANGE OF MERCHANT BANKER'
207	U	EPSLEVEL	'MAINTAINING OR INCREASING EPS'
208	U	DIVLEVEL	'ENHANCING THE CAPACITY TO MAINTAIN DIVIDEND LEVELS'
209	U	PREVMKT	'PREVAILING MARKET CONDITIONS'
210	U	INDSEHAV	'BEHAVIOUR OF OTHER COMPANIES IN THE INDUSTRY'
211	U	ADVFINAD	'ADVICE OF FINANCIAL ADVISORS'
212	U	ATTSHAPH	'ATTITUDE OF SHAREHOLDERS'
213	U	LEVERAGE	'EFFECT ON LEVERAGE OF COMPANY'
214	U	FINTDIFF	'DIFFS IN YOUR REASONS FOR PARTIC. FINANCING AND FIN.INTERMED.'
215	U	VALUE LABELS	INDSEC
216	U	1	'MANUFACTURING'
217	U	2	'SERVICE'
218	U	3	'RETAIL AND DISTRIBUTION'
219	U	4	'PROPERTY AND CONSTRUCTION'
220	U	VALUE LABELS	ADVMS TO ADVOTHEP
221	U	1	'VERY POOR'
222	U	2	'POOR'
223	U	3	'NEUTRAL'
224	U	4	'GOOD'
225	U	5	'VERY GOOD'
226	U	VALUE LABELS	CUSTMS TO CUSTOTHE
227	U	1	'EXTREMELY EXPENSIVE'
228	U	2	'EXPENSIVE'
229	U	3	'NEUTRAL'
230	U	4	'REASONABLE'
231	U	5	'VERY REASONABLE'
232	U	VALUE LABELS	PECISS1 RCISTYP1 RCISTYP2 RCISTYP3 RCISTYP4 RCISTYP5 RCISTYP6
233	U	1	'ORDINARY SHARES - NEW ISSUE'
234	U	2	'ORDINARY SHARES - RIGHTS'
235	U	3	'PREFERENCE SHARES - NEW ISSUE'
236	U	4	'PREFERENCE SHARES - RIGHTS'
237	U	5	'CONVERTIBLE DEBT'
238	U	6	'NON-CONVERTIBLE DEBT'
239	U	7	'CONVERTIBLE PREFERENCE SHARES'
240	U	8	'CONVERTIBLE LOAN STOCK'
241	U	9	'EUROBOND'
242	U	10	'SENIOR NOTES OR GUARANTEED NOTES'
243	U	11	'UNSECURED CONVERTIBLE LOAN STOCK'
244	U	VALUE LABELS	FIRMSPH TO OTHER
245	U	1	'NOT AT ALL IMPORTANT'
246	U	2	'NOT IMPORTANT'
247	U	3	'IMPORTANT'
248	U	4	'QUITE IMPORTANT'
249	U	5	'VERY IMPORTANT'
250	U	VALUE LABELS	INCRBANK
251	U	1	'NOT AT ALL'
252	U	2	'SLIGHTLY'
253	U	3	'MODERATELY'
254	U	4	'SUBSTANTIALLY'
255	U	VALUE LABELS	RCISPUR1 RCISPUR2 RCISPUR3 RCISPUR4 RCISPUR5 RCISPUR6
256	U	1	'TO FUND AN ACQUISITION'
257	U	2	'TO FUND AN INTERNAL PROJECT, INVESTMENT OR EXPANSION'
258	U	3	'CAPITAL RESTRUCTURING OR LOAN REPAYMENT'
259	U	4	'OTHER REASON'
260	U	VALUE LABELS	MERCHBK1 MERCHBK2 MERCHBK3 MERCHBK4 MERCHBK5 MERCHBK6 ADVISOR1
261	U		ADVISOR2 ADVISOR3 ADVISOR4 ADVISOR5 ADVISOR6
262	U	1	'SMITH NEW COURT'
263	U	2	'JAMES CAPEL'
264	U	3	'DE WARBURG'
265	U	4	'CAZENOVE'
266	U	5	'COUNTY NATWEST'

```

267 0      6 'KLEINWORT BENSON'
268 0      7 'BARCLAYS DE ZOETE WEDD'
269 0      8 'GREIG MIDDLETON'
270 0      9 'HOARE GOVETT'
271 0     10 'JPS PHILLIPS AND DREW'
272 0     11 'OTHERS'
273 0  VALUE LABELS      CHANGEMB
274 0      0 'NO CHANGE'
275 0      1 'CHANGE'
276 0  VALUE LABELS      EPSLEVEL TO LEVERAGE
277 0      1 'UNIMPORTANT'
278 0      2 'NOT REALLY IMPORTANT'
279 0      3 'IMPORTANT'
280 0      4 'QUITE IMPORTANT'
281 0      5 'VERY IMPORTANT'
282 0  VALUE LABELS      FINIDIFF
283 0      0 'NO DIFFERENCES'
284 0      1 'DIFFERENCES'
285 0  RECODE ADVMB TO CUSTOTHE(0=-86)
286 0  RECODE FIRMSHPH TO OTHER(0=-86)
287 0  MISSING VALUES ALL (-9,-99,-86)
288 0  SAVE OUTFILE=CIDAT1

```

```

17 APR 92 15:31:25      105 VARIABLES,      340 BYTES PER CASE BEFORE COMPRESSION
17 APR 92 15:31:35      75 CASES SAVED

```

```

17 Apr 92   SPSS-X RELEASE 3.0 FOR ICL VME
15:31:35   Cripps Computing Centre      ICL 3980      VME

```

```

PRECEDING TASK REQUIRED      6.22 SECONDS CPU TIME;      11.00 SECONDS ELAPSED.

```

```

289 0  FINISH

```

```

289 COMMAND LINES READ.
0 ERRORS DETECTED.
0 WARNINGS ISSUED.
8 SECONDS CPU TIME.
14 SECONDS ELAPSED TIME.
END OF JOB.

```


APPENDIX 3-4

Extension 3084
Our reference
Our reference



Date 7 January 1992

The Financial Director

School of
Management
and Finance

~ Dear Sir

I recently sent you a questionnaire on Capital Issues asking for information about the financing decisions of your company. I asked for the questionnaire to be returned by 6 December 1991, but so far I have not heard from you.

I would be grateful if you could return the questionnaire in the reply paid envelope that was sent with it, as soon as possible. Should you have mislaid the questionnaire, please contact me on the above number and I will be happy to send you another copy.

Thank you for your help.

Yours faithfully

C A Mallin BSc ACA
Lecturer in Accounting

Social Science
Building
University Park
Nottingham
NG7 2RD

—
Telephone
(0602) 484848

—
Telex
37346
(Uninor G)

—
Facsimile
(0602) 790683

APPENDIX 3-5-1

INDSEC INDUSTRY SECTOR
BY RCISTYPE

		RCISTYPE					
		COUNT					
		EXP VAL					
		ROW PCT	Ordinary	Ordinary	Pref	Debt	ROW
		COL PCT	- new	- right	shares		TOTAL
		TOT PCT	1#	2#	3#	4#	
INDSEC							
	1	#	0	14	2	8	37
MANUFACTURING		#	10.8	12.6	3.0	6.7	37.1%
		#	27.3%	42.4%	6.1%	24.2%	
		#	31.0%	41.2%	25.0%	44.4%	
		#	10.1%	15.7%	2.2%	9.0%	
	2	#	9	8	2	4	22
SERVICE		#	7.2	8.4	2.0	4.4	24.7%
		#	36.4%	36.4%	0.1%	18.2%	
		#	27.5%	23.5%	25.0%	22.2%	
		#	9.0%	9.0%	2.2%	4.5%	
	3	#	7	4	1	1	13
RETAIL AND DISTR		#	4.2	5.0	1.2	2.6	14.6%
		#	53.2%	30.3%	7.7%	7.7%	
		#	24.1%	11.3%	12.5%	5.6%	
		#	7.9%	4.5%	1.1%	1.1%	
	4	#	5	8	3	5	21
PROPERTY AND CON		#	6.8	8.0	1.0	4.2	23.6%
		#	23.8%	36.1%	14.3%	23.8%	
		#	17.2%	23.5%	37.5%	27.8%	
		#	5.6%	9.0%	3.4%	5.6%	
		COLUMN	29	34	5	13	89
		TOTAL	32.6%	38.2%	9.0%	20.2%	100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.		CELLS WITH E.F. < 5	
5.49011	9	0.7897		1.169		9 OF 14 (56.2%)	
STATISTIC		VALUE		SIGNIFICANCE			
CRAMER'S V		0.14340					
CONTINGENCY COEFFICIENT		0.24104					
NUMBER OF MISSING OBSERVATIONS =		0					

APPENDIX 3-5-2

----- C R O S S T A B U L A T I O N O F -----
RCISTYPE
BY FIRM SHPH FIRM SHAPE PRICE WAS CONSIDERED TO BE H

FIRM SHPH
PAGE 1 OF 1

		COUNT	EXP VAL	ROW PCT	COL PCT	TOT PCT	UNIMPORT	NOT IMPO	IMPORT	QUITE IMPORT	VERY IMPORT	ROW TOTAL
							STANT					
			1#	2#	3#	4#	5#					
RCISTYPE												
Ordinary	- new	1	1	1	4	5	5	10				
			3.6	2.4	3.9	1.8	4.2	30.2				
			6.3	6.3	25.0	31.3	31.3					
			8.3	12.5	30.8	83.3	35.7					
			1.9	1.9	7.5	9.4	9.4					
Ordinary	- right	2	5	5	7	1	7	25				
			5.7	3.8	6.1	2.8	6.6	47.2				
			20.0	20.0	28.0	4.0	28.0					
			41.7	62.5	53.8	16.7	50.0					
			9.4	9.4	13.2	1.9	13.2					
Pref	shares	3	1	1	-	-	2	4				
			.9	.6	1.0	.5	1.1	7.5				
			25.0	25.0	-	-	50.0					
			8.3	12.5	-	-	14.3					
			1.9	1.9	-	-	3.8					
Debt		4	5	1	2	-	-	8				
			1.8	1.2	2.0	.9	2.1	15.1				
			62.5	12.5	25.0	-	-					
			41.7	12.5	15.4	-	-					
			9.4	1.9	3.8	-	-					
COLUMN TOTAL			17	8	13	6	14	55				
			22.6	15.1	24.5	11.3	26.4	100.0				

CHI-SQUARE.	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F. < 5
21.50486	12	0.0435	0.453	17 OF 20 (85.0%)
STATISTIC		VALUE	SIGNIFICANCE	

CRAMER'S V	0.36776
CONTINGENCY COEFFICIENT	0.53725
NUMBER OF MISSING OBSERVATIONS =	36

APPENDIX 3-5-4

C R O S S T A B U L A T I O N O F
RCISTYPE
BY STMKTPH STOCK MARKET PRICES AS A WHOLE WERE HIGH
PAGE 1 OF 1

		STMKTPH						
		COUNT						
		EXP VAL						
		ROW PCT	UNIMPORT	NOT IMPO	IMPORT	QUITE	VERY	ROW
		COL PCT	RIANT			IMPORT	IMPORT	TOTAL
		TOT PCT	1#	2#	3#	4#	5#	
RCISTYPE								
Ordinary - new	1	#	4	2	4	5	4	19
		#	5.3	2.3	5.7	3.7	2.0	33.3%
		#	21.1%	10.5%	21.1%	26.3%	21.1%	
		#	25.0%	28.6%	23.5%	45.5%	66.7%	
		#	7.0%	3.5%	7.0%	8.8%	7.0%	
Ordinary - right	2	#	6	4	10	5	1	26
		#	7.3	3.2	7.8	5.0	2.7	45.6%
		#	23.1%	15.4%	38.5%	19.2%	3.8%	
		#	37.5%	57.1%	58.8%	45.5%	16.7%	
		#	10.5%	7.0%	17.5%	8.8%	1.8%	
Pref shares	3	#	1	-	1	-	1	3
		#	.8	.4	.9	.6	.3	5.3%
		#	33.3%	-	33.3%	-	33.3%	
		#	6.3%	-	5.9%	-	16.7%	
		#	1.8%	-	1.8%	-	1.8%	
Debt	4	#	5	1	2	1	-	9
		#	2.5	1.1	2.7	1.7	.9	15.8%
		#	55.6%	11.1%	22.2%	11.1%	-	
		#	31.3%	14.3%	11.8%	9.1%	-	
		#	8.8%	1.8%	3.5%	1.8%	-	
COLUMN TOTAL			16	7	17	11	6	57
			28.1%	12.3%	29.8%	19.3%	10.5%	100.0%

CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F. < 5
11.88187	12	0.4552	0.316	15 OF 20 (75.0%)
STATISTIC		VALUE	SIGNIFICANCE	

CRAMER'S V 0.26360
CONTINGENCY COEFFICIENT 0.41533
NUMBER OF MISSING OBSERVATIONS = 32

APPENDIX 3-5-5

C R O S S T A B U L A T I O N O F
RCISTYPE
BY STKKTPL STOCK MARKET PRICES AS A WHOLE WERE LOW
PAGE 1 OF 1

		STKKTPL							
		COUNT	#						
		EXP VAL	#						
		ROW PCT	#	UNIMPORT	NOT IMPO	IMPORT			
		COL PCT	#	RTANT		QUITE	VERY		
		TOT PCT	#			IMPORT	IMPORT		
				1#	2#	3#	4#	5#	
RCISTYPE									
Ordinary - new	1	#	3	#	-	#	1	#	5
		#	2.0	#	.6	#	1.3	#	13.5%
		#	60.0%	#	-	#	20.0%	#	
		#	27.3%	#	-	#	14.3%	#	
		#	11.1%	#	-	#	3.7%	#	
Ordinary - right	2	#	5	#	1	#	3	#	11
		#	4.5	#	1.2	#	2.9	#	40.7%
		#	45.5%	#	9.1%	#	27.3%	#	
		#	45.5%	#	33.3%	#	42.9%	#	
		#	18.5%	#	3.7%	#	11.1%	#	
Pref shares	3	#	1	#	1	#	2	#	5
		#	2.0	#	.6	#	1.3	#	18.5%
		#	20.0%	#	20.0%	#	40.0%	#	
		#	9.1%	#	33.3%	#	28.6%	#	
		#	3.7%	#	3.7%	#	7.4%	#	
Deot	4	#	2	#	.1	#	1	#	6
		#	2.4	#	.7	#	1.6	#	22.2%
		#	33.3%	#	16.7%	#	16.7%	#	
		#	19.2%	#	33.3%	#	14.3%	#	
		#	7.4%	#	3.7%	#	3.7%	#	
COLUMN TOTAL			11		3		7		27
			40.7%		11.1%		25.9%		100.0%

CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F.<5
0.77754	12	0.8720	0.370	20 OF 20 (100.0%)
STATISTIC		VALUE	SIGNIFICANCE	

CRAMER'S V 0.28926
CONTINGENCY COEFFICIENT 0.44794
NUMBER OF MISSING OBSERVATIONS = 02

APPENDIX 3-5-6

----- C R O S S T A B U L A T I O N O F -----
RCISTYPE
BY INTRATEP LEVEL OF INTEREST RATES WAS HIGH
----- PAGE 1 OF 1

		INTRATEP						
		COUNT						
		EXP VAL						
		ROW PCT	UNIMPORT	NOT IMPO	IMPORT	QUITE	VERY	ROW
		COL PCT	TANT		IMPORT		IMPORT	TOTAL
		TOT PCT	1#	2#	3#	4#	5#	
RCISTYPE								
Ordinary - new	1	#	7	#	5	#	6	19
		#	5.4	#	6.8	#	2.2	35.8%
		#	36.9%	#	26.3%	#	31.6%	
		#	46.7%	#	26.3%	#	100.0%	
Ordinary - right	2	#	6	#	10	#	-	26
		#	7.4	#	9.3	#	2.9	49.1%
		#	23.1%	#	39.5%	#	-	
		#	40.0%	#	52.6%	#	-	
Pref shares	3	#	-	#	2	#	-	2
		#	.6	#	.7	#	.2	3.8%
		#	-	#	100.0%	#	-	
		#	-	#	10.5%	#	-	
Debt	4	#	2	#	2	#	-	6
		#	1.7	#	2.2	#	.7	11.3%
		#	33.3%	#	33.3%	#	-	
		#	13.3%	#	10.5%	#	-	
COLUMN TOTAL			15	1	19	12	6	53
			28.3%	1.9%	35.8%	22.6%	11.3%	100.0%

CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F. < 5
20.90966	12	0.0517	0.038	15 OF 20 (75.0%)
STATISTIC		VALUE	SIGNIFICANCE	

CRAMER'S V 0.36264
CONTINGENCY COEFFICIENT 0.53189
NUMBER OF MISSING OBSERVATIONS = 36

APPENDIX 3-5-7

----- C R O S S T A B U L A T I O N O F -----
RCISTYPE
BY INTRATEL LEVEL OF INTEREST RATES WAS LOW
----- PAGE 1 OF 1

		INTRATEL							
		COUNT	#						
		EXP VAL	#						
		ROW PCT	#	UNIMPORT	NOT IMPO	IMPORT	QUITE	VERY	ROW
		COL PCT	#	PTANT			IMPORT	IMPORT	TOTAL
		TOT PCT	#	1#	2#	3#	4#	5#	
RCISTYPE									
Ordinary - new	1	#	3	#	-	#	3	#	7
		#	1.6	#	.9	#	1.4	#	22.6%
		#	42.9%	#	-	#	42.9%	#	
		#	42.9%	#	-	#	50.0%	#	
		#	9.7%	#	-	#	9.7%	#	
Ordinary - right	2	#	4	#	3	#	2	#	9
		#	2.0	#	1.2	#	1.7	#	29.0%
		#	44.4%	#	33.3%	#	22.2%	#	
		#	57.1%	#	75.0%	#	33.3%	#	
		#	12.9%	#	9.7%	#	6.5%	#	
Pref shares	3	#	-	#	1	#	1	#	5
		#	1.1	#	.6	#	1.0	#	10.1%
		#	-	#	20.0%	#	20.0%	#	
		#	-	#	25.0%	#	16.7%	#	
		#	-	#	3.2%	#	3.2%	#	
Debt	4	#	-	#	-	#	4	#	10
		#	2.3	#	1.3	#	1.9	#	32.3%
		#	-	#	-	#	40.0%	#	
		#	-	#	-	#	57.1%	#	
		#	-	#	-	#	12.9%	#	
COLUMN			7	4	6	7	7	31	
TOTAL			22.6%	12.9%	19.4%	22.6%	22.6%	100.0%	

CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F. < 5
33.47202	12	0.0000	0.645	20 OF 20 (100.0%)
STATISTIC		VALUE	SIGNIFICANCE	

CRAMER'S V 0.59993
CONTINGENCY COEFFICIENT 0.72054
NUMBER OF MISSING OBSERVATIONS = 59

APPENDIX 3-5-8

CROSS TABULATION OF
RCISTYPE
BY PREVMKT PREVAILING MARKET CONDITIONS
PAGE 1 OF 1

		PREVMKT						
		COUNT #						ROW
		EXP VAL #						TOTAL
		ROW PCT #	UNIMPORT	NOT REAL	IMPORT	QUITE	VERY	
		CUL PCT #	LY IMPOR		IMPORT		IMPORT	
		TOT PCT #	1#	2#	3#	4#	5#	
RCISTYPE								
Ordinary - new	1	#	2	#	1	#	6	#
		#	7	#	1.0	#	6.9	#
		#	7.1%	#	3.5%	#	21.4%	#
		#	100.0%	#	33.3%	#	28.6%	#
		#	2.4%	#	1.2%	#	7.1%	#
Ordinary - right	2	#	-	#	2	#	13	#
		#	0	#	1.2	#	8.2	#
		#	-	#	6.1%	#	39.4%	#
		#	-	#	66.7%	#	61.0%	#
		#	-	#	2.4%	#	15.3%	#
Pref shares	3	#	-	#	-	#	1	#
		#	0.2	#	0.3	#	2.0	#
		#	-	#	-	#	12.5%	#
		#	-	#	-	#	4.8%	#
		#	-	#	-	#	1.2%	#
Dept	4	#	-	#	-	#	1	#
		#	0.4	#	0.6	#	4.0	#
		#	-	#	-	#	6.3%	#
		#	-	#	-	#	4.8%	#
		#	-	#	-	#	1.2%	#
COLUMN TOTAL			2	3	21	34	25	85
			2.4%	3.5%	24.7%	40.0%	29.4%	100.0%

CHI-SQUAPE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F. < 5
26.13623	12	0.0103	0.188	13 OF 20 (65.0%)
STATISTIC		VALUE	SIGNIFICANCE	

CRAMER'S V 0.32015
CONTINGENCY COEFFICIENT 0.48495
NUMBER OF MISSING OBSERVATIONS = 4

APPENDIX 3-5-9

----- C R O S S T A B U L A T I O N O F -----
RCISTYPE
BY ADVFINAD ADVICE OF FINANCIAL ADVISORS
----- PAGE 1 OF 1

		ADVFINAD						
		COUNT #						
		EXP VAL #						
		ROW PCT #	UNIMPORT	NOT REAL	IMPORT	QUITE	VERY	ROW
		COL PCT #	LY IMPOR		IMPORT		IMPORT	TOTAL
		TOT PCT #	1#	2#	3#	4#	5#	
RCISTYPE								
Ordinary - new	1	#	2	#	6	#	13	#
		#	1.6	#	4.6	#	11.2	#
		#	7.1%	#	21.4%	#	40.4%	#
		#	40.0%	#	42.9%	#	100.0%	#
		#	2.4%	#	7.1%	#	15.3%	#
Ordinary - right	2	#	-	#	5	#	12	#
		#	1.9	#	5.4	#	11.3	#
		#	-	#	15.2%	#	48.5%	#
		#	-	#	35.7%	#	55.2%	#
		#	-	#	5.9%	#	18.8%	#
Pref shares	3	#	1	#	2	#	3	#
		#	.5	#	1.3	#	2.7	#
		#	12.5%	#	25.0%	#	25.0%	#
		#	20.0%	#	14.3%	#	6.9%	#
		#	1.2%	#	2.4%	#	2.4%	#
Debt	4	#	2	#	1	#	7	#
		#	.9	#	2.6	#	5.5	#
		#	12.5%	#	6.3%	#	43.8%	#
		#	40.0%	#	7.1%	#	24.1%	#
		#	2.4%	#	1.2%	#	8.2%	#
COLUMN TOTAL			5	14	29	34	3	85
			5.9%	16.5%	34.1%	40.0%	3.5%	100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.		CELLS WITH E.F. < 5		
16.02185	12	0.1150		0.282		13 OF 20 (65.0%)		
STATISTIC		VALUE		SIGNIFICANCE				
CRAMER'S V		0.29565						
CONTINGENCY COEFFICIENT		0.41325						
NUMBER OF MISSING OBSERVATIONS =		4						

APPENDIX 3-5-10

CROSS TABULATION OF
RCISTYPE
BY HEADVPEC MERCHANT BANK OR OTHER ADVISORS RECOMMEN
PAGE 1 OF 1

		HEADVPEC											
		COUNT	#										
		EXP VAL	#										
		ROW PCT	#	UNIMPORT	NOT IMP	IMPORT	QUITE	VERY					
		COL PCT	#	RTANT			IMPORT	IMPORT					
		TOT PCT	#	1#	2#	3#	4#	5#					
RCISTYPE													
Ordinary - new	1	#	4	#	2	#	11	#	6	#	3	#	26
		#	3.7	#	3.1	#	9.3	#	8.7	#	1.2	#	31.0%
		#	15.4%	#	7.7%	#	42.3%	#	23.1%	#	11.5%	#	
		#	33.3%	#	20.0%	#	36.7%	#	21.4%	#	75.0%	#	
		#	4.8%	#	2.4%	#	13.1%	#	7.1%	#	3.6%	#	
Ordinary - right	2	#	4	#	6	#	12	#	10	#	1	#	33
		#	4.7	#	3.9	#	11.8	#	11.0	#	1.6	#	39.3%
		#	12.1%	#	18.2%	#	36.4%	#	30.3%	#	3.0%	#	
		#	33.3%	#	60.0%	#	40.0%	#	35.7%	#	25.0%	#	
		#	4.8%	#	7.1%	#	14.3%	#	11.9%	#	1.2%	#	
Pref. shares	3	#	2	#	-	#	1	#	5	#	-	#	6
		#	1.1	#	1.0	#	2.9	#	2.7	#	.4	#	9.5%
		#	25.0%	#	-	#	12.5%	#	62.5%	#	-	#	
		#	16.7%	#	-	#	3.3%	#	17.9%	#	-	#	
		#	2.4%	#	-	#	1.2%	#	6.0%	#	-	#	
Debt	4	#	2	#	2	#	6	#	7	#	-	#	17
		#	2.4	#	2.0	#	6.1	#	5.7	#	.8	#	20.2%
		#	11.8%	#	11.8%	#	35.3%	#	41.2%	#	-	#	
		#	16.7%	#	20.0%	#	20.0%	#	25.0%	#	-	#	
		#	2.4%	#	2.4%	#	7.1%	#	6.3%	#	-	#	
COLUMN TOTAL			12		10		30		28		4		84
			14.3%		11.9%		35.7%		33.3%		4.8%		100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN. E.F.		CELLS WITH E.F. < 5							
-----	-----	-----		-----		-----		-----		-----		-----	
11.98186	12	0.4471		0.381		14 OF		20 (70.0%)					
STATISTIC		VALUE		SIGNIFICANCE									
-----		-----		-----		-----		-----		-----		-----	

APPENDIX 3-5-11

CROSS TABULATION OF
RCISTYPE
BY HIGHLEV
LEVERAGE WOULD HAVE BEEN TOO HIGH
PAGE 1 OF 1

		HIGHLEV						
		COUNT						
		EXP VAL						
		ROW PCT	UNIMPORT	NOT IMPO	IMPORT	QUITE	VERY	ROW
		CUL PCT	PTANT.			IMPORT	IMPORT	TOTAL
		TOT PCT	1#	2#	3#	4#	5#	
RCISTYPE								
Ordinary - new	1	#	6	#	4	#	11	#
		#	6.0	#	2.6	#	9.9	#
		#	23.1%	#	15.4%	#	42.3%	#
		#	28.6%	#	50.0%	#	36.7%	#
Ordinary - right	2	#	7	#	1	#	12	#
		#	8.2	#	3.1	#	11.8	#
		#	22.4%	#	3.2%	#	38.7%	#
		#	33.3%	#	12.5%	#	40.0%	#
Pref shares	3	#	2	#	-	#	4	#
		#	2.1	#	.9	#	3.0	#
		#	25.0%	#	-	#	50.0%	#
		#	9.5%	#	-	#	13.3%	#
Debt	4	#	6	#	3	#	3	#
		#	3.7	#	1.4	#	5.3	#
		#	42.9%	#	21.4%	#	21.4%	#
		#	28.6%	#	37.5%	#	10.0%	#
COLUMN TOTAL			21	5	8	15	30	79
			26.6%	6.3%	10.1%	19.0%	38.0%	100.0%

CHI-SQUAPE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F.< 5
13.58181	12	0.3282	0.506	14 OF 20 (70.0%)
STATISTIC		VALUE	SIGNIFICANCE	

CRAMER'S V 0.23939
CONTINGENCY COEFFICIENT 0.35302
NUMBER OF MISSING OBSERVATIONS = 10

APPENDIX 3-5-12

----- C R O S S T A B U L A T I O N O F -----
RCISTYPE
BY LEVERAGE EFFECT ON LEVERAGE OF COMAPNY
----- PAGE 1 OF 1

		LEVERAGE						
		COUNT						
		EXP VAL						
		ROW PCT	UNIMPORT	NOT REAL	IMPORT	QUITE	VERY	ROW
		COL PCT	LY IMPOR			IMPORT	IMPORT	TOTAL
		TOT PCT	1#	2#	3#	4#	5#	
RCISTYPE								
Ordinary - new	1	#	1	#	3	#	12	#
		#	1.3	#	6.3	#	11.9	#
		#	3.6%	#	29.6%	#	42.9%	#
		#	25.0%	#	42.1%	#	33.3%	#
		#	1.2%	#	9.4%	#	14.1%	#
Ordinary - right	2	#	3	#	5	#	12	#
		#	1.6	#	7.4	#	14.0	#
		#	9.1%	#	15.2%	#	35.4%	#
		#	75.0%	#	26.3%	#	33.3%	#
		#	3.5%	#	5.9%	#	14.1%	#
Pref shares	3	#	-	#	3	#	3	#
		#	.4	#	1.9	#	3.4	#
		#	-	#	37.5%	#	37.5%	#
		#	-	#	15.9%	#	8.3%	#
		#	-	#	3.5%	#	3.5%	#
Debt	4	#	-	#	3	#	9	#
		#	.9	#	3.6	#	6.8	#
		#	-	#	18.8%	#	56.3%	#
		#	-	#	15.8%	#	25.0%	#
		#	-	#	3.5%	#	10.6%	#
COLUMN TOTAL			4	4	19	36	22	85
			4.7%	4.7%	22.4%	42.4%	25.9%	100.0%

CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F. < 5
6.79907	12	0.7200	0.376	13 OF 20 (65.0%)
STATISTIC		VALUE	SIGNIFICANCE	

CRAMER'S V 0.12576
CONTINGENCY COEFFICIENT 0.30628
NUMBER OF MISSING OBSERVATIONS = 4

APPENDIX 3-5-13

----- C R O S T A B U L A T I O N O F -----
RCISTYPE
BY TARGETDE TO MEET TARGET DEBT-EQUITY RATIO
----- PAGE 1 OF 1

		TARGETDE						
		COUNT	#					
		EXP VAL	#					
		ROW PCT	#	UNIMPORT	NOT IMP	IMPORT	QUITE IMPORT	VERY IMPORT
		COL PCT	#	PTANT				
		TOT PCT	#	1#	2#	3#	4#	5#
RCISTYPE								
Ordinary - new	1	#	7	#	4	#	6	#
		#	7.8	#	3.6	#	5.7	#
		#	25.0%	#	14.3%	#	22.2%	#
		#	29.2%	#	36.4%	#	31.6%	#
		#	8.4%	#	4.3%	#	7.2%	#
Ordinary - right	2	#	7	#	4	#	5	#
		#	9.3	#	4.2	#	6.2	#
		#	21.9%	#	12.5%	#	15.6%	#
		#	20.2%	#	36.4%	#	31.3%	#
		#	8.4%	#	4.8%	#	6.0%	#
Pref shares	3	#	1	#	1	#	2	#
		#	2.3	#	1.1	#	1.5	#
		#	12.5%	#	12.5%	#	25.0%	#
		#	4.2%	#	9.1%	#	12.5%	#
		#	1.2%	#	1.2%	#	2.4%	#
Debt	4	#	9	#	2	#	3	#
		#	4.6	#	2.1	#	3.1	#
		#	56.3%	#	12.5%	#	18.8%	#
		#	37.5%	#	18.2%	#	18.8%	#
		#	10.8%	#	2.4%	#	3.6%	#
COLUMN			24		11		14	
TOTAL			28.9%		13.3%		19.3%	
							19	
							22.9%	
							13	
							15.7%	
								83
								100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.		CELLS WITH E.F. < 5		
-----	-----	-----		-----		-----		
11.81743	12	0.4405		1.060		13 OF 20 (65.0%)		
STATISTIC		VALUE		SIGNIFICANCE				
-----		-----		-----		-----		

CRAMER'S V 0.21785
CONTINGENCY COEFFICIENT 0.35303
NUMBER OF MISSING OBSERVATIONS = 6

APPENDIX 3-5-14

CROSS TABULATION OF
RCISTYPE
BY SIGNAL TO SIGNAL THE FIRMS STRENGTH
PAGE 1 OF 1

		SIGNAL					ROW TOTAL
		COUNT #					
		EAP VAL #					
		ROW PCT #	UNIMPORT	NOT IMPO	IMPORT	QUITE IMPORT	
		COL PCT #	RTANT			VERY IMPORT	
		TOT PCT #	1#	2#	3#	4#	5#
RCISTYPE							
Ordinary - new	1	#	2	#	13	#	25
		#	4.3	#	9.1	#	30.5%
		#	5.0%	#	52.0%	#	
		#	14.3%	#	43.3%	#	
		#	2.4%	#	15.9%	#	
Ordinary - right	2	#	5	#	12	#	33
		#	5.6	#	12.1	#	40.2%
		#	15.2%	#	36.4%	#	
		#	35.7%	#	40.0%	#	
		#	6.1%	#	14.6%	#	
Pref shares	3	#	3	#	1	#	3
		#	1.4	#	2.9	#	9.6%
		#	37.5%	#	12.5%	#	
		#	21.4%	#	3.3%	#	
		#	3.7%	#	1.2%	#	
Jeot	4	#	4	#	4	#	16
		#	2.7	#	5.9	#	19.5%
		#	25.0%	#	25.0%	#	
		#	29.6%	#	13.3%	#	
		#	4.9%	#	4.0%	#	
COLUMN TOTAL			14	9	30	20	92
			17.1%	11.0%	36.6%	24.4%	100.0%
CHI-SQUARE		D.F.	SIGNIFICANCE		MIN E.F.	CELLS WITH E.F.< 5	
10.53415		12	0.5692		0.878	14 OF 20 (70.0%)	
STATISTIC			VALUE		SIGNIFICANCE		
CRAMER'S V			0.20693				
CONTINGENCY COEFFICIENT			0.33740				
NUMBER OF MISSING OBSERVATIONS =			7				

APPENDIX 3-5-15

----- C R O S S T A B U L A T I O N O F -----
RCISTYPE
BY TAXEAM IF CO. TAX EXHAUSTED, SO UNABLE TO USE T .
----- PAGE 1 OF 1 -----

		TAXEXH											
		COUNT	#										
		EXP VAL	#										
		ROW PCT	#	UNIMPORT	NOT IMPO	IMPORT	QUITE	VERY					DJW
		COL PCT	#	PTANT		IMPORT		IMPORT	IMPORT			TOTAL	
		TOT PCT	#	1#	2#	3#	4#	5#					
RCISTYPE													
	1	#	10	#	2	#	-	#	1	#	-	#	13
Ordinary - new		=	10.0	#	1.1	#	.3	#	1.1	#	.6	#	27.7%
		#	76.9%	#	15.4%	#	-	#	7.7%	#	-	#	
		#	27.8%	#	50.0%	#	-	#	25.0%	#	-	#	
		#	21.3%	#	4.3%	#	-	#	2.1%	#	-	#	
	2	#	14	#	1	#	1	#	3	#	1	#	20
Ordinary - right		=	15.3	#	1.7	#	.4	#	1.7	#	.0	#	42.6%
		#	70.0%	#	5.0%	#	5.0%	#	15.0%	#	5.0%	#	
		#	38.0%	#	25.0%	#	100.0%	#	75.0%	#	50.0%	#	
		#	29.8%	#	2.1%	#	2.1%	#	6.4%	#	2.1%	#	
	3	#	3	#	-	#	-	#	-	#	1	#	4
Pref shares		#	3.1	#	.3	#	.1	#	.3	#	.2	#	8.5%
		#	75.0%	#	-	#	-	#	-	#	25.0%	#	
		#	8.3%	#	-	#	-	#	-	#	50.0%	#	
		#	6.4%	#	-	#	-	#	-	#	2.1%	#	
	4	#	9	#	1	#	-	#	-	#	-	#	10
Debt		#	7.7	#	.9	#	.2	#	.9	#	.4	#	21.3%
		#	90.0%	#	10.0%	#	-	#	-	#	-	#	
		#	25.0%	#	25.0%	#	-	#	-	#	-	#	
		#	19.1%	#	2.1%	#	-	#	-	#	-	#	
COLUMN TOTAL			36		4		1		4		2		47
			76.6%		8.5%		2.1%		8.5%		4.3%		100.0%

<u>CHI-SQUARE</u>	<u>D.F.</u>	<u>SIGNIFICANCE</u>	<u>MIN E.F.</u>	<u>CELLS WITH E.F. < 5</u>
10.31891	12	0.5880	0.085	17 OF 20 (-85.0%)
STATISTIC		VALUE	SIGNIFICANCE	

CRAMER'S V	0.27052
CONTINGENCY COEFFICIENT	0.42430
NUMBER OF MISSING OBSERVATIONS =	42

APPENDIX 3-5-16

----- C R O S S T A B U L A T I O N O F -----
RCISTYPE
BY INDBEHAV BEHAVIOUR OF OTHER COMPANIES IN THE INDU
----- PAGE 1 OF 1

		INDBEHAV									
		COUNT	#								
		EXP VAL	#								
		ROW PCT	#	UNIMPORT	NOT REAL IMPORT	QUITE					
		COL PCT	#	LY IMPOR		IMPORT					
		TOT PCT	#	1#	2#	3#	4#				
RCISTYPE		-----+-----+-----+-----+-----+-----+-----+-----									
Ordinary - new	1	#	7	#	13	#	7	#	1	#	22
		#	6.7	#	12.0	#	7.7	#	1.7	#	33.3%
		#	25.0%	#	46.4%	#	25.0%	#	3.6%	#	
		#	35.0%	#	36.1%	#	30.4%	#	20.0%	#	
		#	8.3%	#	15.5%	#	8.3%	#	1.2%	#	
+-----+-----+-----+-----+-----+-----+-----+-----											
Ordinary - right	2	#	10	#	13	#	7	#	2	#	32
		#	7.5	#	13.7	#	8.8	#	1.9	#	38.1%
		#	31.3%	#	40.6%	#	21.9%	#	6.3%	#	
		#	50.0%	#	36.1%	#	30.4%	#	40.0%	#	
		#	11.9%	#	15.5%	#	8.3%	#	2.4%	#	
+-----+-----+-----+-----+-----+-----+-----+-----											
Pref shares	3	#	1	#	3	#	3	#	1	#	8
		#	1.0	#	3.4	#	2.2	#	.5	#	9.5%
		#	12.5%	#	37.5%	#	37.5%	#	12.5%	#	
		#	5.0%	#	2.3%	#	17.0%	#	20.0%	#	
		#	1.2%	#	3.6%	#	3.6%	#	1.2%	#	
+-----+-----+-----+-----+-----+-----+-----+-----											
Debt	4	#	2	#	7	#	6	#	1	#	16
		#	3.3	#	6.9	#	4.4	#	1.0	#	19.0%
		#	12.5%	#	43.2%	#	37.5%	#	6.3%	#	
		#	10.0%	#	19.4%	#	26.1%	#	20.0%	#	
		#	2.4%	#	2.3%	#	7.1%	#	1.2%	#	
+-----+-----+-----+-----+-----+-----+-----+-----											
COLUMN		20	36	23	5	84					
TOTAL		23.9%	42.9%	27.4%	6.0%	100.0%					
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.		CELLS WITH E.F. < 5					
-----	-----	-----		-----		-----					
4.38637	9	0.8842		0.476		9 OF 16 (56.2%)					
STATISTIC		VALUE		SIGNIFICANCE							
-----		-----		-----		-----					

CRAMER'S V 0.13194
CONTINGENCY COEFFICIENT 0.22278
NUMBER OF MISSING OBSERVATIONS = 5

APPENDIX 3-5-17

----- C R O S S T A B U L A T I O N O F -----
RCISTYPE
BY ATTISHARR ATTITUDE OF SHAREHOLDERS
----- PAGE 1 OF 1

		ATTISHARR						
		COUNT #						
		EXP VAL #						
		ROW PCT #	UNIMPORT	NOT REAL	IMPORT	QUITE	VERY	ROW
		COL PCT #	LY IMPOR			IMPORT	IMPORT	TOTAL
		TOT PCT #	1#	2#	3#	4#	5#	
RCISTYPE								
Ordinary - new	1	#	1	3	6	9	9	28
		#	.3	1.3	6.0	12.0	9.3	33.3%
		#	3.6%	10.7%	21.4%	32.1%	32.1%	
		#	100.0%	75.0%	33.3%	25.0%	36.0%	
		#	1.2%	3.6%	7.1%	10.7%	10.7%	
Ordinary - right	2	#	-	-	9	14	10	33
		#	.4	1.6	7.1	14.1	9.8	39.3%
		#	-	-	27.3%	43.4%	30.3%	
		#	-	-	50.0%	38.9%	40.0%	
		#	-	-	10.7%	16.7%	11.0%	
Pref shares	3	#	-	-	-	5	2	2
		#	.1	.4	1.7	3.4	2.4	9.5%
		#	-	-	-	75.0%	25.0%	
		#	-	-	-	15.7%	8.0%	
		#	-	-	-	7.1%	2.4%	
Jeot	4	#	-	1	3	7	4	15
		#	.2	.7	3.2	6.4	4.5	17.9%
		#	-	6.7%	20.0%	46.7%	26.7%	
		#	-	25.0%	16.7%	19.4%	16.0%	
		#	-	1.2%	3.6%	8.3%	4.8%	
COLUMN TOTAL			1	4	18	36	25	84
			1.2%	4.8%	21.4%	42.9%	29.8%	100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.		CELLS WITH E.F. < 5		
-----	-----	-----		-----		-----		
11.30117	12	0.5033		0.095		13 OF 20 (65.0%)		
STATISTIC		VALUE		SIGNIFICANCE				
-----		-----		-----		-----		

CRAMER'S V 0.21177
CONTINGENCY COEFFICIENT 0.34436
NUMBER OF MISSING OBSERVATIONS = 5

APPENDIX 3-5-18

----- C R O S S T A B U L A T I O N O F -----
 RCISTYPE
 BY RCISPUR1 PRIMARY PURPOSE OF MOST RECENT ISSUE
 ----- PAGE 1 OF 1

RCISPU1									
COUNT		#							
EXP VAL		#							
ROW	PCT	#	TO FUND	TO FUND	CAPITAL	OTHER			ROW
COL	PCT	#	ACQUIS	INT EXPN	RESTRUCT	SEASONS			TOTAL
TOT	PCT	#	1#	2#	3#	4#			
RCISTYPE									
1		#	14	#	7	#	6	#	29
Ordinary - new		#	9.1	#	8.1	#	11.1	#	32.6%
		#	42.3%	#	24.1%	#	20.7%	#	
		#	50 -	#	23 -	#	17.6%	#	100 -
		#	15.7%	#	7.9%	#	6.7%	#	2.2%
2		#	8	#	11	#	15	#	34
Ordinary - right		#	10.7	#	9.6	#	13.0	#	39.2%
		#	23.5%	#	32.4%	#	44.1%	#	
		#	28.6%	#	44 -	#	44.1%	#	
		#	9 -	#	12.4%	#	16.9%	#	
3		#	2	#	3	#	3	#	8
Pref shares		#	2.5	#	2.2	#	3.1	#	0 -
		#	25 -	#	37.5%	#	37.5%	#	
		#	7.1%	#	12 -	#	8.8%	#	
		#	2.2%	#	3.4%	#	3.4%	#	
4		#	4	#	4	#	10	#	18
Debt		#	5.7	#	5.1	#	6.9	#	20.2%
		#	22.2%	#	22.2%	#	55.6%	#	
		#	14.3%	#	16 -	#	29.4%	#	
		#	4.5%	#	4.5%	#	11.2%	#	
COLUMN			29		25		34		39
TOTAL			31.5%		28.1%		38.2%		100 -

CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F. < 5
------------	------	--------------	----------	---------------------

STATISTIC	VALUE	SIGNIFICANCE
12.93206	0.1657	0.180
		7 OF 16 (43.7%)

```

CRAMER'S V . . . . . 0.22009
CONTINGENCY COEFFICIENT . . . . . 0.35619
NUMBER OF MISSING OBSERVATIONS = . . . . . 0

```

----- C R O S S T A B U L A T I O N O F -----
RCISTYPE
BY DIVLEVEL ENHANCING THE CAPACITY TO MAINTAIN DIVID

		DIVLEVEL							PAGE	
		COUNT			EXP VAL			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT			TOT PCT			ROW PCT		
		COL PCT								

```
CRAMER'S V                                0.27131
CONTINGENCY COEFFICIENT                   0.42531
NUMBER OF MISSING OBSERVATIONS =          5
```

INDSEC INDUSTRY SECTOR
BY DIVLEVEL ENHANCING THE CAPACITY TO MAINTAIN DIVID

INDSEC	COUNT	EXP VAL	ROW PCT	COL PCT	TOT PCT	DIVLEVEL					ROW TOTAL
						UNIMPORT	NOT REAL	IMPORTANT	QUITE IM	VERY IMP	
						1#	2#	3#	4#	5#	
MANUFACTURING	1	#	#	#	#	2.8	7.1	9.0	10.6	3.5	33
		#	#	#	#	6.1%	24.2%	21.2%	33.3%	15.2%	39.3%
		#	#	#	#	22.6%	44.4%	30.4%	40.7%	55.6%	
		#	#	#	#	2.4%	9.5%	9.3%	13.1%	6.0%	
SERVICE	2	#	#	#	#	1.9	4.5	5.9	6.6	2.3	21
		#	#	#	#	4.8%	19.0%	33.3%	33.3%	9.5%	25.0%
		#	#	#	#	14.3%	22.2%	30.4%	25.9%	22.2%	
		#	#	#	#	1.2%	4.3%	8.3%	8.3%	2.4%	
RETAIL AND DISTR	3	#	#	#	#	.9	2.4	3.0	3.5	1.2	11
		#	#	#	#	27.3%	13.2%	27.3%	18.2%	9.1%	13.1%
		#	#	#	#	42.9%	11.1%	13.0%	7.4%	11.1%	
		#	#	#	#	3.6%	2.4%	3.6%	2.4%	1.2%	
PROPERTY AND CON	4	#	#	#	#	1.6	4.1	5.7	6.1	2.0	19
		#	#	#	#	5.3%	21.1%	31.6%	36.8%	5.3%	22.6%
		#	#	#	#	14.3%	22.2%	26.1%	25.9%	11.1%	
		#	#	#	#	1.2%	4.3%	7.1%	8.3%	1.2%	
COLUMN TOTAL						7	13	23	27	0	84
						8.3%	21.4%	27.4%	32.1%	10.7%	100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE					MIN E.F.		CELLS WITH E.F. < 5		
8.57087	12	0.7391					0.017		13 OF 20 (65.0%)		
STATISTIC		VALUE					SIGNIFICANCE				
CRAMER'S V		0.13442									
CONTINGENCY COEFFICIENT		0.30428									
NUMBER OF MISSING OBSERVATIONS =		5									

APPENDIX 3-5-21

----- C R O S S T A B U L A T I O N O F -----
RCISTYPE
BY EPSDILUT IF CO. DID NOT ISSUE EQUITY, DID NOT WAN
----- PAGE 1 OF 1 -----

		EPSDILUT						
		COUNT #						
		EXP VAL #						
		ROW PCT #	UNIMPORT	NOT IMPD	IMPORT	QUITE IMPORT	VERY IMPORT	ROW TOTAL
		COL PCT #	PTANT					
		TOT PCT #	1#	2#	3#	4#	5#	
RCISTYPE								
Ordinary - new	1	#	1	#	1	#	-	3
		#	1.1	#	.5	#	.6	12.0%
		#	33.3%	#	33.3%	#	-	
		#	11.1%	#	25.0%	#	-	
Ordinary - right	2	#	3	#	-	#	-	3
		#	1.1	#	.5	#	.6	12.0%
		#	100.0%	#	-	#	-	
		#	33.3%	#	-	#	-	
Pref shares	3	#	2	#	1	#	1	4
		#	1.4	#	.5	#	.8	16.0%
		#	50.0%	#	25.0%	#	-	
		#	22.2%	#	25.0%	#	-	
Debt	4	#	3	#	2	#	4	15
		#	5.4	#	2.4	#	3.0	60.0%
		#	20.0%	#	13.3%	#	26.7%	
		#	33.3%	#	50.0%	#	20.0%	
COLUMN TOTAL			6	4	5	5	2	25
			36.0%	16.0%	20.0%	20.0%	8.0%	100.0%

CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F. < 5
10.93297	12	0.5347	0.240	19 OF 20 (95.0%)
STATISTIC		VALUE	SIGNIFICANCE	

CRAMER'S V 0.36160
CONTINGENCY COEFFICIENT 0.55160
NUMBER OF MISSING OBSERVATIONS = 64

APPENDIX 3-5-22

CROSS TABULATION OF
RCISTYPE
BY EPSLEVEL MAINTAINING OR INCREASING EPS
PAGE 1 OF 1

		EPSLEVEL									
		COUNT									
		EXP VAL									
		ROW PCT	UNIMPORT	IMPORT	QUITE	VERY	ROW				
		COL PCT			IMPORT	IMPORT	TOTAL				
		TOT PCT	1#		3#	4#	5#				
RCISTYPE											
Ordinary - new	1	#	1	#	7	#	12	#	3	#	23
		#	.7	#	6.7	#	11.7	#	9.0	#	33.3%
		#	3.6%	#	25.0%	#	42.9%	#	23.6%	#	
		#	50.0%	#	35.0%	#	34.3%	#	29.6%	#	
		#	1.2%	#	8.3%	#	14.3%	#	9.5%	#	
Ordinary - right	2	#	-	#	7	#	15	#	10	#	32
		#	.8	#	7.6	#	13.3	#	10.3	#	38.1%
		#	-	#	21.9%	#	46.9%	#	31.3%	#	
		#	-	#	35.0%	#	42.9%	#	37.0%	#	
		#	-	#	8.3%	#	17.9%	#	11.9%	#	
Pref shares	3	#	-	#	5	#	1	#	2	#	8
		#	.2	#	1.9	#	3.3	#	2.6	#	9.5%
		#	-	#	62.5%	#	12.5%	#	25.0%	#	
		#	-	#	25.0%	#	2.9%	#	7.4%	#	
		#	-	#	6.0%	#	1.2%	#	2.4%	#	
Debt	4	#	1	#	1	#	7	#	7	#	16
		#	.4	#	3.3	#	6.7	#	5.1	#	19.0%
		#	6.3%	#	6.3%	#	43.8%	#	43.8%	#	
		#	50.0%	#	5.0%	#	20.0%	#	25.9%	#	
		#	1.2%	#	1.2%	#	8.3%	#	8.3%	#	
COLUMN TOTAL			2		20		35		27		84
			2.4%		23.8%		41.7%		32.1%		100.0%

CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F. < 5
12.07826	9	.02089	0.190	3 OF 15 (50.0%)
STATISTIC		VALUE	SIGNIFICANCE	

CRAMER'S V 0.21893
CONTINGENCY COEFFICIENT 0.35456
NUMBER OF MISSING OBSERVATIONS = 5

APPENDIX 3-5-23

----- C R O S S T A B U L A T I O N O F -----
INDSEC INDUSTRY SECTOR
BY EPSLEVEL MAINTAINING OR INCREASING EPS

		E.F.S. LEVEL					
	COUNT #						
	EXP. VAL #						
	ROW PCT #	UNIMPORT	IMPORTAN	QUITE IM	VERY IMP		ROW
	COL PCT #	ANT	T	PORTANT	ORTANT		TOTAL
	TOT PCT #	1#	3#	4#	5#		
INDSEC							
	1	#	2 #	3 #	12 #	16 #	33
MANUFACTURING		#	.9 #	7.9 #	13.2 #	10.6 #	30.3%
		#	6.1% #	9.1% #	36.4% #	48.5% #	
		#	100.0% #	15.0% #	34.3% #	59.3% #	
		#	2.4% #	3.6% #	14.3% #	19.0% #	
	2	#	0 #	5 #	10 #	6 #	21
SERVICE		#	.5 #	5.0 #	8.8 #	6.8 #	25.0%
		#	.0% #	23.3% #	47.6% #	28.6% #	
		#	.0% #	25.0% #	28.6% #	22.2% #	
		#	.0% #	6.0% #	11.9% #	7.1% #	
	3	#	0 #	6 #	4 #	1 #	11
RETAIL AND DIST		#	.3 #	2.6 #	4.6 #	3.5 #	13.1%
		#	.0% #	54.5% #	36.4% #	9.1% #	
		#	.0% #	30.0% #	11.4% #	3.7% #	
		#	.0% #	7.1% #	4.9% #	1.2% #	
	4	#	0 #	6 #	9 #	4 #	19
PROPERTY AND CON		#	.5 #	4.5 #	7.9 #	5.1 #	22.4%
		#	.0% #	31.0% #	47.4% #	21.1% #	
		#	.0% #	30.0% #	25.7% #	14.3% #	
		#	.0% #	7.1% #	10.7% #	4.3% #	
	COLUMN		2	20	35	27	84
	TOTAL		2.4%	23.8%	41.7%	32.1%	100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE				MIN E.F.	CELLS WITH E.F. < 5
10.93422	9	0.0498				0.262	8 OF 14 (50.0%)
STATISTIC		VALUE				SIGNIFICANCE	
CRAMER'S V		0.25923					
CONTINGENCY COEFFICIENT		0.40960					
NUMBER OF MISSING OBSERVATIONS =		5					

APPENDIX 3-5-24

----- C R O S S T A B U L A T I O N O F
RCISPUR1 PRIMARY PURPOSE OF MOST RECENT ISSUE
BY EPSLEVEL MAINTAINING OR INCREASING EPS

		EPSLEVEL									
		COUNT	#								
		EXP VAL	#								
		ROW PCT	#	UNIMPORT	IMPORTAN	QUITE IM	VERY IMP				
		COL PCT	#	ANT	T	PORTANT	ORTANT				
		TOT PCT	#	1#	3#	4#	5#				
RCISPUR1											
	1	#	1	#	2	#	10	#	15	#	29
TO FUND ACQUIS		#	.7	#	6.7	#	11.7	#	9.0	#	33.3%
		#	3.6%	#	7.1%	#	35.7%	#	53.6%	#	
		#	50.0%	#	10.0%	#	28.6%	#	55.6%	#	
		#	1.2%	#	2.4%	#	11.0%	#	17.9%	#	
	2	#	0	#	10	#	12	#	2	#	24
TO FUND INT EXPN		#	.6	#	5.7	#	10.0	#	7.7	#	29.6%
		#	.0%	#	41.7%	#	50.0%	#	8.3%	#	
		#	.0%	#	50.0%	#	34.3%	#	7.4%	#	
		#	.0%	#	11.9%	#	14.3%	#	2.4%	#	
	3	#	1	#	8	#	11	#	10	#	30
CAPITAL RESTRUCT		#	.7	#	7.1	#	12.5	#	9.0	#	35.7%
		#	3.3%	#	26.7%	#	36.7%	#	33.3%	#	
		#	50.0%	#	40.0%	#	31.4%	#	37.0%	#	
		#	1.2%	#	9.5%	#	13.1%	#	11.9%	#	
	4	#	0	#	0	#	2	#	0	#	2
OTHER REASONS		#	.0	#	.5	#	.8	#	.6	#	2.4%
		#	.0%	#	.0%	#	100.0%	#	.0%	#	
		#	.0%	#	.0%	#	5.7%	#	.0%	#	
		#	.0%	#	.0%	#	2.4%	#	.0%	#	
		COLUMN	2		20		35		27		84
		TOTAL	2.4%		23.3%		41.7%		32.1%		100.0%

CHI-SQUAPE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F. < 5
-----	-----	-----	-----	-----
19.30031	9	0.0228	0.048	7 OF 16 (43.7%)
STATISTIC		VALUE	SIGNIFICANCE	
-----		-----	-----	

CRAMER'S V 0.27675
CONTINGENCY COEFFICIENT 0.43225
NUMBER OF MISSING OBSERVATIONS = 5

APPENDIX 3-5-25

----- C R O S S T A B U L A T I O N O F -----
EPSLEVEL MAINTAINING OR INCREASING EPS
BY DIVLEVEL ENHANCING THE CAPACITY TO MAINTAIN DIVID

COUNT		DIVLEVEL					ROW
EXP VAL		UNIMPORT	NOT REAL	IMPORTANT	QUITE IM	VERY IMP	
ROW PCT		ANT	LY IMPOR	T	PORTANT	OPTANT	TOTAL
COL PCT							
TOT PCT		1#	2#	3#	4#	5#	
EPSLEVEL							
UNIMPORTANT	1	1	1	0	0	0	2
		.2	.4	.5	.6	.2	2.4%
		50.0%	50.0%	.0%	.0%	.0%	
		14.3%	5.6%	.0%	.0%	.0%	
		1.2%	1.2%	.0%	.0%	.0%	
IMPORTANT	3	4	3	11	2	0	20
		1.7	4.3	5.5	6.4	2.1	23.8%
		20.0%	15.0%	55.0%	10.0%	.0%	
		57.1%	16.7%	47.8%	7.4%	.0%	
		4.8%	3.6%	13.1%	2.4%	.0%	
QUITE IMPORTANT	4	1	10	6	17	1	35
		2.9	7.5	9.6	11.3	3.9	41.7%
		2.9%	28.6%	17.1%	43.6%	2.9%	
		14.3%	55.6%	26.1%	63.0%	11.1%	
		1.2%	11.9%	7.1%	20.2%	1.2%	
VERY IMPORTANT	5	1	4	6	8	3	27
		2.3	5.3	7.4	8.7	2.9	32.1%
		3.7%	14.3%	22.2%	29.6%	29.6%	
		14.3%	22.2%	26.1%	29.6%	88.0%	
		1.2%	4.8%	7.1%	9.5%	9.5%	
COLUMN TOTAL		7	18	23	27	0	75
		9.3%	21.4%	27.4%	32.1%	10.7%	100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.		CELLS WITH E.F. < 5	
39.71555	12	0.0001		0.167		12 OF 20 (60.0%)	
STATISTIC		VALUE		SIGNIFICANCE			
CRAMER'S V		0.39700					
CONTINGENCY COEFFICIENT		0.56560					
NUMBER OF MISSING OBSERVATIONS =		5					

APPENDIX 3-6 CORRELATION OF VARIABLES

The correlation between scores on the variables was analysed using Pearson's correlation coefficient. Care is needed when interpreting the coefficients as high positive correlation could arise when either (i) two variables are considered to be very important on the scoring, or (ii) two variables are considered to be unimportant on the scoring.

The Pearson correlation coefficients are shown in Appendix 3-6. The Pearson correlation coefficient is the number to the right of the top variable of each pair; the number in brackets indicates the number of cases used in calculating the correlation (this will often vary between each different pair of variables because the number of missing cases is not the same for all variables); and 'p=' shows the correlation coefficient (based on its estimate, the sample correlation coefficient 'r') for a one tail test.

Strong correlations between variables are highlighted by 'boxing', and the significance level is also shown.

The variables which have a correlation

coefficient significant at 0.1% or less are:

- (i) Highlevg & Targetde
- (ii) Firmshph & Stmktph
- (iii) Firmshpl & Stmktpl
- (iv) Epslevel & Divlevel
- (v) Epslevel & Leverage
- (vi) Divlevel & Attsharh
- (vii) Divlevel & Leverage
- (viii) Prevmkt & Attsharh

There would be a prior expectation that 'Highlevg' and 'Targetde' would be highly correlated as the decision of 'Leverage would have been too high if more debt were issued' is, it may be reasonably assumed, related to meeting a target-debt equity ratio. Retaining both of these acted as a check of consistency.

Similarly, the high correlation between 'Firmshph' and 'Stmktph', and between 'Firmshpl' and 'Stmktpl' would be expected as, except for stocks with a significant negative beta, the share price of an individual firm would, ceteris paribus, rise or fall as stock market prices as a whole rose or fell.

There is high correlation between the importance

of 'Epslevel' and 'Divlevel'. This is perhaps not surprising given that there are short-term pressures to maintain dividends as there are short-term pressures to maintain earnings. It could be that any increase in EPS would be as a result of financing projects by debt and not by equity, thereby avoiding any increase in the number of ordinary shares. This could help to explain both the correlation between 'Epslevel' and 'Leverage', and between 'Divlevel' and 'Leverage'.

The correlation between the importance of 'Divlevel' and 'Attsharh' is probably attributable to the perception by financial directors that maintenance of dividends is an important component of shareholders' approval. It may be that a declining dividend could signal to shareholders that the company is experiencing declining sales and/or increasing expenses, and if part of the decline in profits were attributable in large interest payments on debt, then this could also tie in with the 'Divlevel' and 'Leverage' relationship mentioned above.

'Prevmkt' and 'Attsharh' are correlated and one would expect that the shareholders' attitudes would be affected by prevailing market conditions

in markets and vice versa.

APPENDIX 3-6 CORRELATION OF VARIABLES

: PEARSON'S CORRELATION COEFFICIENTS

	FIRMSHPH	FIRMSHPL	STMKTPH	STMKTPL	INTRATEH	INTRATEL
FIRMSHPH	1.0000 (53) P= .	1.0000 (9) P= .	<div>●</div> <div>.7459 (49) P= .000</div>	.3224 (11) P= .167	<div>▲</div> <div>.3193 (41) P= .021</div>	-.0918 (16) P= .368
FIRMSHPL	1.0000 (9) P= .	1.0000 (26) P= .	.4232 (13) P= .075	<div>●</div> <div>.9037 (21) P= .000</div>	.4577 (13) P= .056	.3540 (17) P= .082
STMKTPH	.7459 (49) P= .000	.4232 (13) P= .075	1.0000 (57) P= .	1.0000 (11) P= .	<div>■</div> <div>.3371 (41) P= .006</div>	.0282 (17) P= .456
STMKTPL	.3224 (11) P= .167	.9037 (21) P= .000	1.0000 (11) P= .	1.0000 (27) P= .	.4492 (13) P= .062	<div>▼</div> <div>.4112 (17) P= .051</div>
INTRATEH	.3193 (41) P= .021	.4577 (13) P= .056	.3371 (41) P= .006	.4492 (13) P= .062	1.0000 (53) P= .	1.0000 (9) P= .
INTRATEL	-.0918 (16) P= .368	.3540 (17) P= .082	.0282 (17) P= .456	.4112 (17) P= .051	1.0000 (9) P= .	1.0000 (31) P= .
HIGHLEV3	.1950 (50) P= .087	<div>▼</div> <div>.3672 (25) P= .035</div>	-.0013 (53) P= .496	.0565 (27) P= .390	<div>▼</div> <div>.2408 (51) P= .044</div>	-.3013 (27) P= .063
TARGETDE	-.0093 (52) P= .474	.0524 (25) P= .402	-.0511 (55) P= .354	-.2499 (26) P= .109	<div>▲</div> <div>.2984 (53) P= .015</div>	-.2720 (29) P= .077
SIGNAL	.3925 (51) P= .002	.4349 (26) P= .013	.3293 (55) P= .007	.2105 (27) P= .146	.1555 (51) P= .138	-.1242 (30) P= .257
MSADVREC	.1013 (51) P= .240	.1661 (26) P= .209	.1683 (56) P= .052	.2307 (27) P= .123	.0124 (51) P= .466	.1950 (31) P= .145
TAXEAM	-.1240 (26) P= .273	.1903 (17) P= .232	.0383 (29) P= .422	.3394 (16) P= .099	.1939 (31) P= .148	-.0643 (14) P= .414
EPSDILUT	-.4315 (11) P= .093	.0172 (12) P= .479	-.3425 (13) P= .126	.0729 (10) P= .421	.5003 (10) P= .070	.2908 (13) P= .168
OTHER	(0) P= .	(0) P= .	(0) P= .	(0) P= .	(0) P= .	(0) P= .

(COEFFICIENT / (CASES) / 1-TAILED SIG)
 " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

● Significant at 0.1% level

■ Significant at 1% level

▲ Significant at 2.5% level

□ Significant at 5% level

(CONT'D) : PEARSON'S CORRELATION COEFFICIENTS

- - - PEARSON CORRELATION COEFFICIENTS - - -

	HIGHLEV3	TARGETDE	SIGNAL	MBADVREC	TAXEXH	EPSDILUT	OTHER
FIRMSHPH	.1950 (50) P= .097	-.0093 (52) P= .474	.3925 (51) P= .002	.1013 (51) P= .240	-.1240 (25) P= .273	-.4315 (11) P= .093	(0) P= .
FIRMSHPL	.3672 (25) P= .035	.0524 (25) P= .402	.4349 (26) P= .013	.1661 (26) P= .209	.1903 (17) P= .232	.0172 (12) P= .479	(0) P= .
STMKTPH	-.0013 (53) P= .496	-.0511 (56) P= .354	.3283 (55) P= .007	.1883 (56) P= .082	.0383 (29) P= .422	-.3428 (13) P= .126	(0) P= .
STMKTPL	.0565 (27) P= .390	-.2499 (26) P= .109	.2105 (27) P= .146	.2307 (27) P= .123	.3394 (16) P= .099	.0729 (10) P= .421	(0) P= .
INTRATEH	.2408 (51) P= .044	.2984 (53) P= .015	.1555 (51) P= .138	.0124 (51) P= .466	.1939 (31) P= .148	.5003 (10) P= .070	(0) P= .
INTRATEL	-.3013 (27) P= .063	-.2720 (29) P= .077	-.1242 (30) P= .257	.1959 (31) P= .145	-.0643 (14) P= .414	.2908 (13) P= .168	(0) P= .
HIGHLEV3	1.0000 (79) P= .	.6627 (78) P= .000	.2411 (77) P= .017	-.0378 (77) P= .372	-.0372 (46) P= .282	.2374 (22) P= .144	(0) P= .
TARGETDE	.6627 (78) P= .000	1.0000 (23) P= .	.3150 (80) P= .002	.1358 (81) P= .113	.0376 (46) P= .402	.0467 (23) P= .416	(0) P= .
SIGNAL	.2411 (77) P= .017	.3150 (80) P= .002	1.0000 (82) P= .	.2731 (81) P= .007	.1015 (47) P= .249	-.0540 (24) P= .401	(0) P= .
MBADVREC	-.0378 (77) P= .372	.1358 (81) P= .113	.2731 (81) P= .007	1.0000 (84) P= .	.0977 (47) P= .257	.1710 (25) P= .207	(0) P= .
TAXEXH	-.0672 (46) P= .282	.0376 (46) P= .402	.1015 (47) P= .249	.0977 (47) P= .257	1.0000 (47) P= .	-.0921 (20) P= .350	(0) P= .
EPSDILUT	.2374 (22) P= .144	.0467 (23) P= .416	-.0540 (24) P= .401	.1710 (25) P= .207	-.0921 (20) P= .350	1.0000 (25) P= .	(0) P= .
OTHER	(0) P= .	(0) P= .	(0) P= .	(0) P= .	(0) P= .	(0) P= .	1.0000 (0) P= .

(COEFFICIENT / (CASES) / 1-TAILED SIG)

" . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

● Significant at 0.1% level

■ Significant at 1% level

▲ Significant at 2.5% level

□ Significant at 5% level

(CONT'D) : PEARSON'S CORRELATION COEFFICIENTS

- - - PEARSON CORRELATION COEFFICIENTS - - -

	EPSLEVEL	DIVLEVEL	PREVHKT	INDBEHAV	ADVFIND	ATTSHARH	LEVERAGE
EPSLEVEL	1.0000 (84) P= .	.4299 (84) P= .000	.0448 (84) P= .343	.1246 (84) P= .129	.0397 (84) P= .360	.2293 (83) P= .019	.3303 (84) P= .001
DIVLEVEL	.4299 (84) P= .000	1.0000 (84) P= .	.1617 (84) P= .071	.2474 (84) P= .012	.1270 (84) P= .125	.3653 (83) P= .000	.4151 (84) P= .000
PREVHKT	.0448 (84) P= .343	.1617 (84) P= .071	1.0000 (85) P= .	.2886 (84) P= .004	.1643 (85) P= .066	.3468 (84) P= .001	.2119 (85) P= .026
INDBEHAV	.1246 (84) P= .129	.2474 (84) P= .012	.2886 (84) P= .004	1.0000 (84) P= .	.1098 (84) P= .160	.1436 (83) P= .090	.1438 (84) P= .096
ADVFIND	.0397 (84) P= .360	.1270 (84) P= .125	.1643 (85) P= .066	.1098 (84) P= .160	1.0000 (85) P= .	.2320 (84) P= .017	.1830 (85) P= .047
ATTSHARH	.2293 (83) P= .019	.3653 (83) P= .000	.3468 (84) P= .001	.1486 (83) P= .090	.2320 (84) P= .017	1.0000 (84) P= .	.3899 (84) P= .000
LEVERAGE	.3303 (84) P= .001	.4151 (84) P= .000	.2119 (85) P= .026	.1438 (84) P= .096	.1830 (85) P= .047	.3899 (84) P= .000	1.0000 (85) P= .

(COEFFICIENT / (CASES) / 1-TAILED SIG)

" . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

- Significant at 0.1% level
- Significant at 1% level
- ▲ Significant at 2.5% level
- Significant at 5% level

APPENDIX 6-1-1

Example: Anglia Secure Homes ye Sep 1990 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTMETICAL ISSUE					
	-----		-----					
	EQUITY		DEBT ALT.(13.05%)		DEBT ALT.(14.05%)		DEBT ALT. (15.05%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		-2245		-2245		-2245		-2245
INTEREST (ex new fin)	7361		7361		7361		7361	
NEW FINANCE INTEREST	0		274		295		316	
	-----		-----		-----		-----	
TOTAL INTEREST		7361		7635		7656		7677
		-----		-----		-----		-----
Net profit after int		-9606		-9880		-9901		-9922
Pub.pre-tax profit		-8888		-9162		-9183		-9204
basic taxation	-165		-165		-165		-165	
tax change	0		-96		-103		-111	
	-----		-----		-----		-----	
		-165		-261		-268		-276
		-----		-----		-----		-----
Earnings after tax		-8723		-8901		-8915		-8928
Prof dividend	0		0		0		0	
Minority interest	50		50		50		50	
EARNINGS for ORD		-8773		-8951		-8965		-8978
	=====		=====		=====		=====	
EPS (pence/ord share)		-35.61		-42.58		-42.65		-42.71
	=====		=====					
Total ord. shares at start of year ('000)	21020		21020		21020		21020	
Average no. ord. shares (at start of year, '000)		20890		20890		20890		20890
No. of new ord. shares (total, '000)	12016		0		0		0	
No. of new ord. shares (used in EPS calc., '000)		3743		130 *		130 *		130 *
Total ord. shares at y/e ('000)	33036		21020		21020		21020	
Average no. ord. shares (used in EPS calc., '000)		24633		21020		21020		21020
Amount of debts £ (nominal)			£8.4mn		£8.4mn		£8.4mn	
Coupon rate			13.05		14.05		15.05	
Tax rate		35.00		35.00		35.00		35.00

270490 Rights issue 1 for 2 ords at £0.70
Raised £8.4mn. 12,000,000 shares
New shares in year = 12,016,000 . Difference is due to rounding.
Ex-rights date 240590
Cum-rights price £0.70

Last date for payment in full 150690

Benchmark Gilt = Treasury 9% 2008. RY = 12.05%

Additional interest would be payable of £8400000 x 13.05%, etc.,
with tax relief being available (tax rate = 35%)
In the year of issue, this has been taken as 3 months interest.

It can be seen that there is a 'negative' EPS which becomes increasingly
more negative under the debt recon.as the coupon rate increases.

* There is an increase of 130,000 which does not relate to the rights
issue and so this has also been included in the debt recon. weighted
average number of shares figure.

NB. Interest capitalised in 1990 amounted to £522,000 (£0.522mn).

Example: Anglia Secure Homes ye Sep 1991 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE							
	-----		-----							
	EQUITY		DEBT ALT.(13.05%)		DEBT ALT.(14.05%)		DEBT ALT.(15.05%)			
	£000	£000	£000	£000	£000	£000	£000	£000	£000	
Operating profit		-7789		-7789		-7789		-7789		
INTEREST (ex new fin)	6360		6360		6360		6360		6360	
NEW FINANCE INTEREST	0		1096		1180		1264			
	-----		-----		-----		-----		-----	
TOTAL INTEREST		6360		7456		7540		7624		
		-----		-----		-----		-----		
Net profit after int		-14149		-15245		-15329		-15413		
Pub.pre-tax profit		-16991		-18087		-18171		-18255		
basic taxation	-741		-165		-165		-165		-165	
tax change	0		-373		-401		-430			
	-----		-----		-----		-----		-----	
		-741		-538		-566		-595		
		-----		-----		-----		-----		
Earnings after tax		-16250		-17549		-17605		-17660		
Pref dividend	0		0		0		0		0	
Minority interest	36		36		36		36		36	
EARNINGS for ORD		-16286		-17585		-17641		-17696		
	=====		=====		=====		=====		=====	
EPS (pence/ord share)		-49.30		-83.66		-83.92		-84.19		
	=====		=====		=====		=====		=====	
Total ord. shares at start of year ('000)	33036		21020		21020		21020		21020	
Average no. ord. shares (at start of year, '000)		24633		21020		21020		21020		
No. of new ord. shares (total, '000)	0		0		0		0		0	
No. of new ord. shares (used in EPS calc., '000)		8403		0		0		0		
Total ord. shares at y/e ('000)	33036		21020		21020		21020		21020	
Average no. ord. shares (used in EPS calc., '000)		33036		21020		21020		21020		
Amount of debts £ (nominal)			£8.4mn		£8.4mn		£8.4mn		£8.4mn	
Coupon rate			13.05		14.05		15.05			
Tax rate		34.00		34.00		34.00		34.00		

270490 Rights issue 1 for 2 ords at £0.70
Raised £8.4mn

Ex-rights date 240590
Cum-rights price £0.70

Last date for payment in full 150690

Benchmark Gilt = Treasury 9% 2008. RY = 12.05%
Additional interest would be payable of £8400000 x 13.05%, etc.,
with tax relief being available (tax rate = 35%)

It can be seen that there is a 'negative' EPS which becomes increasingly
more negative under the debt recon.as the coupon rate increases.

NB. There was no interest capitalised in 1991.

ANGLIA SECURE HOMES Y/E SEP 1990

Calculation of weighted average number of shares

As the rights price is the same as the cum rights price, there is no bonus element in this case and so the weighted average number of shares is calculated as follows:

01/10/89 - 26/04/90 = 21,020,000 x 7/12 = 12,261,667	
27/04/90 - 30/09/90 = 33,036,000 x 5/12 = 13,765,000	.
	.

	26,026,667
	=====

Example: Bimec ye Mar 1992 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTMETICAL ISSUE					
	-----		-----					
	EQUITY		DEBT ALT.(10.97%)		DEBT ALT.(11.97%)		DEBT ALT.(12.97%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		7214		7214		7214		7214
INTEREST (ex new fin)	1201		1201		1201		1201	
NEW FINANCE INTEREST	0		623		680		737	
	-----		-----		-----		-----	
TOTAL INTEREST		1201		1824		1881		1938
	-----		-----		-----		-----	
Net profit after int		6013		5390		5333		5276
Pub.pre-tax profit		6041		5418		5361		5304
basic taxation	910		910		910		910	
tax change	0		-206		-224		-243	
	-----		-----		-----		-----	
		910		704		686		667
	-----		-----		-----		-----	
Earnings after tax		5131		4714		4675		4637
Prof dividend	0		0		0		0	
Minority interest	0		0		0		0	
EARNINGS for ORD		5131		4714		4675		4637
	=====		=====		=====		=====	
EPS (pence/ord share)		5.06		5.64		5.60		5.55
	=====		=====		=====		=====	
Total ord. shares at start of year ('000)	82663		82663		82663		82663	
Average no. ord. shares (at start of year,'000)		73716		73716		73716		73716
No. of new ord. shares (total,'000)	27668		3489		3489		3489	
No. of new ord. shares (used in EPS calc.,'000)		27765		9819		9819		9819
Total ord. shares at y/e ('000)	110331		86152		86152		86152	
Average no. ord. shares (used in EPS calc.,'000)		101481		83535		83535		83535
Amount of debts £ (nominal)			£11.36mn		£11.36mn		£11.36mn	
Coupon rate			10.97		11.97		12.97	
Tax rate		33		33		33		33

190791 Rights issue 2 for 7 ords at £0.47
Raised £11.36mn. Issued 24,179,177 shares.

Ex-rights date 160891
Cum-rights price £0.75

Last date for payment in full 050991

Benchmark Gilt = Treasury 9% 2008. RY = 9.97%

Additional interest would be payable of £11360000 x 10.97%, etc.,
with tax relief being available (tax rate = 33%)
In the year of issue, this has been taken as 6 months interest.

There has been an actual increase in the number of ordinary shares
during the year of 3,489,000 (27,668,000 - 24,179,000), issued 5 Jan '92,
and this increase has also been included in the debt reconstruction.

For the debt reconstruction, shares in issue during the year:

01/04/91 - 04/01/92 = 82,663,000
05/01/91 - 31/03/92 = 86,152,000

The weighted average number of shares for the debt reconstruction scenario
is therefore:

82,663,000 x 9/12 + 86,152,000 x 3/12 = 83,535,250

On the original equity issue the EPS is 5.06p, on the debt recon., this
increases slightly as follows:
With interest at 10.97%, the EPS is 5.64p,
 at 11.97%, the EPS is 5.60p,
 at 12.97%, the EPS is 5.55p.

Example: Bowater ye Dec 1990 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(12.12%)		DEBT ALT.(13.12%)		DEBT ALT.(14.12%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		106000		106000		106000		106000
INTEREST (ex new fin)	55900		55900		55900		55900	
NEW FINANCE INTEREST	0		8688		9405		10122	
	-----		-----		-----		-----	
TOTAL INTEREST		55900		64588		65305		66022
		-----		-----		-----		-----
Net profit after int		50100		41412		40695		39978
Pub.pre-tax profit		113100		104412		103695		102978
basic taxation	32300		32300		32300		32300	
tax change	0		3041		3292		3543	
	-----		-----		-----		-----	
		32300		29259		29008		28757
		-----		-----		-----		-----
Earnings after tax		80800		75153		74687		74221
Pref dividend	7100		7100		7100		7100	
Minority interest	1600		1600		1600		1600	
EARNINGS for ORD		72100		66453		65987		65521
	=====		=====		=====		=====	
EPS (pence/ord share)		51.46		55.68		55.28		54.89
	=====		=====		=====		=====	
Total ord. shares at start of year ('000)	119200		119200		119200		119200	
Average no. ord. shares (at start of year,'000)		118900		118900		118900		118900
No. of new ord. shares (total,'000)	33924		190		277		277	
No. of new ord. shares (used in EPS calc.,'000)		21200		458		458		458
Total ord. shares at y/e ('000)	153124		119390		119477		119477	
Average no. ord. shares (used in EPS calc.,'000)		140100		119358		119358		119358
Amount of debts £ (nominal)			£143mn		£143mn		£143mn	
Coupon rate			12.12		13.12		14.12	
Tax rate		35		35		35		35

Comput. of min.int

300590 Rights issue 1:4 ords at £4.25.
Raised £143.37mn. Issued 33,734,360 shares

Ex-rights date 040690
Cum-rights price £5.235

Last date for payment in full 240690

Benchmark Gilt = Treasury 9% 2008. RY = 11.12%

Additional interest would be payable of £143,000,000 x 12.12%, etc.,
with tax relief being available (tax rate = 35%)
In the year of issue, this has been taken as 6 months interest.

Total new shares in year = 33,924,000. Difference = 189,640,000
issued 1 March 1990, also included in debt reconstruction.

For the debt reconstruction scenarios, the total number of shares in issue:

01/01/90 - 28/02/90 = 119,200,000
01/03/90 - 31/12/90 = 119,390,000

The weighted average number of shares for the debt recon. is:

119,200,000 x2/12 + 119,390,000 x 10/12 = 119,358,333

Under the original equity issue, the EPS is 51.46p.

Under the debt recon, the EPS rises:

with interest at 12.12%, EPS is 55.68p
at 13.12%, EPS is 55.28p
at 14.12%, EPS is 54.89p

NB. In 1990 Bowater capitalised £7.6mn interest.
In 1990 Bowater had neg. irrecoverable ACT (i.e. write-back)
of £1.8mn.

Example: Bowater ye Dec 1991 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTMETICAL ISSUE					
	-----		-----					
	EQUITY		DEBT ALT.(12.12%)		DEBT ALT.(13.12%)		DEBT ALT.(14.12%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		99200		99200		99200		99200
INTEREST (ex new fin)	54000		54000		54000		54000	
NEW FINANCE INTEREST	0		17332		18762		20192	
	-----		-----		-----		-----	
TOTAL INTEREST		54000		71332		72762		74192
	-----		-----		-----		-----	
Net profit after int		45200		27868		26438		25008
Pub.pre-tax profit		112700		95368		93938		92508
basic taxation	30700		30700		30700		30700	
tax change	0		5719		6191		6663	
	-----		-----		-----		-----	
		30700		24981		24509		24037
	-----		-----		-----		-----	
Earnings after tax		82000		70388		69430		68472
Prof dividend	7000		7000		7000		7000	
Minority interest	1900		1900		1900		1900	
EARNINGS for ORD		73100		61488		60530		59572
	=====		=====		=====		=====	
EPS (pence/ord share)		47.59		51.25		50.45		49.65
	=====		=====		=====		=====	
Total ord. shares at start of year ('000)	153124		119477		119517		119517	
Average no. ord. shares (at start of year,'000)		140100		119358		119200		119200
No. of new ord. shares (total,'000)	776		776		776		776	
No. of new ord. shares (used in EPS calc.,'000)		13500		622		780		780
Total ord. shares at y/e ('000)	153900		120253		120293		120293	
Average no. ord. shares (used in EPS calc.,'000)		153600		119980		119980		119980
Amount of debts £ (nominal)			£143mn		£143mn		£143mn	
Coupon rate			12.12		13.12		14.12	
Tax rate		33		35		35		35

Comput. of min.int

300590 issue of 25p ords at £4.25.
Raised £143mn
If issue price=£4.25 No. of shares = £143000000/£4.25
= 33,647,059

Benchmark Gilt = Treasury 9% 2008. RY = 11.12%
Additional interest would be payable of £143,000,000 x 12.12%, etc.,
with tax relief being available (tax rate = 33%)

There has been an increase in the actual number of ordinary shares of 776,000, issued 20 May 1991. This increase has also been included in the reconstruction.

For the reconstruction, shares in issue during the year:

01/01/91 - 19/05/91 = 119,477,000
20/05/91 - 31/12/91 = 120,253,000

The weighted average number of shares is calculated as:

119,477,000 x 4.6/12 + 120,253,000 x 7.4/12 = 119,980,200

Under the original equity issue, the EPS is 47.59p.
Under the debt recon, the EPS rises:
with interest at 12.12%, EPS is 51.25p
at 13.12%, EPS is 50.45p
at 14.12%, EPS is 49.65p

NB. In 1991 Bowater capitalised £3.1mn interest.
In 1991 Bowater had neg. irrecoverable ACT (i.e. write-back) of £0.4mn.

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(11.16%)		DEBT ALT.(12.16%)		DEBT ALT.(13.16%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		28965		28965		28965		28965
INTEREST (ex new fin)	986		986		986		986	
NEW FINANCE INTEREST	0		844		919		995	
TOTAL INTEREST		986		1830		1905		1981
Net profit after int		27979		27135		27060		26984
Pub.pre-tax profit		32524		31680		31605		31529
basic taxation	12519		12519		12519		12519	
tax change	0		-295		-322		-348	
		12519		12224		12197		12171
Earnings after tax		20005		19456		19407		19358
Prof dividend	0		0		0		0	
Minority interest	1472		1472		1472		1472	
EARNINGS for ORD		18533		17984		17935		17886
	=====		=====		=====		=====	
EPS (pence/ord share)		13.16		13.47		13.44		13.40
	=====		=====		=====		=====	
Total ord. shares at start of year ('000)	44490		44490		44490		44490	
Average no. ord. shares (at start of year, '000)		44490		44490		44490		44490
No. of new ord. shares (total, '000)	111230 *		88985		88985		88985	
No. of new ord. shares (used in EPS calc., '000)		96370		88985		88985		88985
Total ord. shares at y/e ('000)	155720		133475		133475		133475	
Average no. ord. shares (used in EPS calc., '000)		140860		133475		133475		133475
Amount of debts £ (nominal)			£44.48m		£44.48m		£8.4m	
Coupon rate			11.16		12.16		13.16	
Tax rate		35.00		35.00		35.00		35.00

290987 Rights issue 1 for 6 ords at £2.00
Raised £44.48m. Issued 22,244,839 shares

Total number of new shares in the year = 111,230,000 including the rights issue. The balance relates to a 2 for 1 capitalisation (bonus) issue on 20 May 1987, based on the shares at the start of the year (44,490,000)

Ex-rights date 300987
Cum-rights price £2.21

Last date for payment in full 221087

Benchmark Gilt = Treasury 11.75% 2003-2007. RY = 10.16%

Additional interest would be payable of £44,480,000 x 11.16%, etc., with tax relief being available (tax rate = 35%)
In the year of issue, this has been taken as 2 months interest.

The capitalisation issue has also been included in the debt reconstruction. Per SSAP3 bonus issues should, assuming that they rank for dividend, be treated as being in issue for the whole year.

The weighted average number of shares for the debt reconstruction has therefore been taken as the number of shares at the start of the year plus the capitalisation issue, with all the shares being treated as though in issue for the whole year.

Under the original equity issue, the EPS is 13.16p.
Under the debt recon. there is an increase in EPS as follows:
With interest at 11.16%, the EPS is 13.47p,
12.16%, the EPS is 13.44p,
13.16%, the EPS is 13.40p.

Example: Bowthorpe Holdings plc ye Dec 1988 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE							
							
	EQUITY		DEBT ALT.(11.16%)		DEBT ALT.(12.16%)		DEBT ALT.(13.16%)			
	£000	£000	£000	£000	£000	£000	£000	£000	£000	
Operating profit		33282		33282		33282		33282		
INTEREST (ex new fin)	1360		1360		1360		1360		1360	
NEW FINANCE INTEREST	0		4964		5409		5854			
	-----		-----		-----		-----		-----	
TOTAL INTEREST		1360		6324		6769			7214	
	-----		-----		-----		-----		-----	
Net profit after int		31922		26958		26513			26068	
Pub.pre-tax profit		40067		35103		34658			34213	
basic taxation	14227		14227		14227		14227		14227	
tax change	0		-1737		-1893		-2049			
	-----		-----		-----		-----		-----	
		14227		12490		12334			12178	
	-----		-----		-----		-----		-----	
Earnings after tax		25840		22613		22324			22035	
Pref dividend	0		0		0		0			
Minority interest	1955		1955		1955		1955			
EARNINGS for ORD		23885		20658		20369			20080	
	=====		=====		=====		=====		=====	
EPS (pence/ord share)		15.33		15.44		15.23			15.01	
	=====		=====		=====		=====		=====	
Total ord. shares at start of year ('000)	155720		133475		133475		133475			
Average no. ord. shares (at start of year, '000)		140860		133475		133475			133475	
No. of new ord. shares (total, '000)	290		290		290		290			
No. of new ord. shares (used in EPS calc., '000)		14960		290		290			290	
Total ord. shares at y/e ('000)	156010		133765		133765		133765			
Average no. ord. shares (used in EPS calc., '000)		155820		133765		133765			133765	
Amount of debts £ (nominal)			£44.48mn		£44.48mn		£8.4mn			
Coupon rate			11.16		12.16		13.16			
Tax rate		35.00		35.00		35.00			35.00	

290987 Rights issue 1 for 6 ords at £2.00
Raised £44.48mn

Ex-rights date 300987
Cum-rights price £2.21

Last date for payment in full 221087

Benchmark Gilt = Treasury 11.75% 2003-2007. RY = 10.16%

Additional interest would be payable of £44,480,000 x 11.16%, etc.,
with tax relief being available (tax rate = 35%)
A full year's interest has been charged for ye Dec 1988.

There has been a small increase in the total number of shares of
290,000. This has been included in the debt reconstruction as an
increase in the total number of shares and in the weighted average number
of shares.

Under the original equity issue, the EPS is 15.33p.
Under the debt recon. there is an increase in EPS for the lowest interest
rate, but then the EPS declines at higher interest rates:
With interest at 11.16%, the EPS is 15.44p,
12.16%, the EPS is 15.23p,
13.16%, the EPS is 15.01p.

APPENDIX 6-1-5

Example: Casket plc March ye Mar 1991 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE							
	-----		-----							
	EQUITY		DEBT ALT.(12.8%)		DEBT ALT.(13.8%)		DEBT ALT.(14.8%)			
	£000	£000	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		2336		2336		2336		2336		2336
INTEREST (ex new fin)	2539		2539		2539		2539		2539	
NEW FINANCE INTEREST	0		543		586		628			
	-----		-----		-----		-----		-----	
TOTAL INTEREST		2539		3082		3125		3167		
		-----		-----		-----		-----		-----
Net profit after int		-203		-746		-789		-831		
Pub.pre-tax profit		212		-331		-374		-416		
basic taxation	-118		-118		-118		-118		-118	
tax change	0		-185		-199		-214			
	-----		-----		-----		-----		-----	
		-118		-303		-317		-332		
		-----		-----		-----		-----		-----
Earnings after tax		330		-29		-57		-85		
Pref dividend	66		66		66		66			
Minority interest	26		26		26		26			
EARNINGS for ORD		238		-121		-149		-177		
	=====		=====		=====		=====		=====	
EPS (pence/ord share)		0.35		-0.32		-0.39		-0.47		
	=====		=====		=====		=====		=====	
Total ord. shares at start of year ('000)	37740		37740		37740		37740			
Average no. ord. shares (at start of year, '000)		37740		37740		37740		37740		
No. of new ord. shares (total, '000)	37740		0		0		0			
No. of new ord. shares (used in EPS calc., '000)		30870		0		0		0		
Total ord. shares at y/e ('000)	75480		37740		37740		37740			
Average no. ord. shares (used in EPS calc., '000)		68610		37740		37740		37740		
Amount of debts £ (nominal)			£5.66m		£5.66m		£5.3m			
Coupon rate			12.80		13.80		14.80			
Tax rate		34.00		34.00		34.00		34.00		

030590 Rights issue 1 for 1 ords at £0.15
Raised £5.66m, issued 37,739,508 shares.
Total new issues in year = 37,740,000. Difference = rounding.
Ex-rights date 220590
Cum-rights price £0.18

Last date for full payment 110690

Benchmark Gilt = Treasury 9% 2008. RY = 11.8%

Additional interest would be payable of £5660000 x 12.8%, etc.,
with tax relief being available (tax rate = 34%)
In the year of issue, this has been taken as 9 months interest.

The effect of the rights issue in increasing the total no. of ord.
shares and the average no. of ord. shares has been stripped out in the
debt recon.

Under the original equity issue, the EPS is 0.35p.
Under the debt recon. there is a 'negative' EPS which becomes more
negative as the coupon rate increases:
With interest at 12.8%, the EPS is -0.32p,
at 13.8%, the EPS is -0.39p,
at 14.8%, the EPS is -0.47p.

NB. In 1991 Casket had irrecoverable ACT of £0.053m (£53000)

Example: Casket plc March ye Mar 1992 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE							
	EQUITY		DEBT ALT.(12.8%)		DEBT ALT.(13.8%)		DEBT ALT.(14.8%)			
	£000	£000	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		3692		3692		3692		3692		3692
INTEREST (ex new fin)	1934		1934		1934		1934		1934	
NEW FINANCE INTEREST	0		724		781		838			
	-----		-----		-----		-----		-----	
TOTAL INTEREST		1934		2658		2715		2772		
	-----		-----		-----		-----		-----	
Net profit after int		1758		1034		977		920		
Pub.pre-tax profit		2062		1338		1281		1224		
basic taxation	561		561		561		561			
tax change	0		-239		-258		-276			
	-----		-----		-----		-----		-----	
		561		322		303		285		
	-----		-----		-----		-----		-----	
Earnings after tax		1501		1016		978		940		
Prof dividend	66		66		66		66			
Minority interest	16		16		16		16			
EARNINGS for ORD		1419		934		896		858		
	=====		=====		=====		=====		=====	
EPS (pence/ord share)		1.85		2.40		2.30		2.21		
	=====		=====		=====		=====		=====	
Total ord. shares at start of year ('000)	75480		37740		37740		37740			
Average no. ord. shares (at start of year,'000)		68610		37740		37740		37740		
No. of new ord. shares (total,'000)	4090		4090		0		0			
No. of new ord. shares (used in EPS calc.,'000)		7987		1125		1125		1125		
Total ord. shares at y/e ('000)	79570		41830		37740		37740			
Average no. ord. shares (used in EPS calc.,'000)		76597		38865		38865		38865		
Amount of debts £ (nominal)			£5.66m		£5.66m		£5.66m			
Coupon rate			12.80		13.80		14.80			
Tax rate		33		33		33		33		

030590 Rights issue 1 for 1 ords at £0.15
Raised £5.66m

Ex-rights date 220590
Cum-rights price £0.18

Last date for full payment 110690

Benchmark Gilt = Treasury 9% 2008. RY = 11.8%

Additional interest would be payable of £5660000 x 12.8%, etc.,
with tax relief being available (tax rate = 34%)
In the year of issue, this has been taken as 9 months interest.

The effect of the rights issue in increasing the total no. of ord.
shares and the average no. of ord. shares has been stripped out in the
debt recon.

There has been an actual increase in the number of ordinary shares of
4,090,000, issued 22 Dec 1991, and this increase has also been included
in the reconstruction scenarios.

For the debt reconstruction scenarios, the shares in issue during the year:

01/04/91 - 21/12/91 = 37,740,000
22/12/91 - 31/03/92 = 41,830,000

The weighted average number of shares for the debt reconstruction
scenarios is calculated as:

$37,740,000 \times 8.7/12 + 41,830,000 \times 3.3/12 = 38,864,750$

Under the original equity issue, the EPS is 1.85p.

Under the debt recon. this would increase as follows:
With interest at 12.8%, the EPS is 2.40p,
at 13.8%, the EPS is 2.30p,
at 14.8%, the EPS is 2.21p.

NB. In 1992 Casket had no irrecoverable ACT.

APPENDIX 6-1-6

Example: Cater Allen ye Apr 1991 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTMETICAL ISSUE							
	EQUITY		DEBT ALT.(11.8%)		DEBT ALT.(12.8%)		DEBT ALT.(13.8%)			
	£000	£000	£000	£000	£000	£000	£000	£000	£000	
Operating profit		0		0		0			0	
INTEREST (ex new fin)	0		0		0		0		0	
NEW FINANCE INTEREST	0		1277		1385		1494			
	-----		-----		-----		-----		-----	
TOTAL INTEREST		0		1277		1385			1494	
	-----		-----		-----		-----		-----	
Net profit after int		0		-1277		-1385			-1494	
Pub.pre-tax profit		0		0		0			0	
basic taxation	0		0		0		0		0	
tax change	0		-434		-471		-508			
	-----		-----		-----		-----		-----	
		0		-434		-471			-508	
	-----		-----		-----		-----		-----	
Earnings after tax		0		434		471			508	
Pref dividend	0		0		0		0		0	
Minority interest	0		0		0		0		0	
EARNINGS for ORD		1896		1053		982			910	
	=====		=====		=====		=====		=====	
EPS (pence/ord share)		7.96		5.40		5.03			4.66	
	=====		=====		=====		=====		=====	
Total ord. shares at start of year ('000)		19387		19387		19387			19387	
Average no. ord. shares (at start of year,'000)		19387		19387		19387			19387	
No. of new ord. shares (total,'000)		4435		127		127			127	
No. of new ord. shares (used in EPS calc.,'000)		4435		127		127			127	
Total ord. shares at y/e ('000)		23822		19514		19514			19514	
Average no. ord. shares (used in EPS calc.,'000)		23822		19514		19514			19514	
Amount of debts £ (nominal)				£14.43m		£14.43m			£14.43m	
Coupon rate				11.80		12.80			13.80	
Tax rate		34.00		34.00		34.00			34.00	

140690 Rights issue 2 for 9 ords at £3.35
Raised £14.43m. Issued 4,308,222 shares.
A further 127,000 shares were issued after the rights issue, and have been included in the debt reconstruction, both in the total and the weighted average figures.

Ex-rights date 180690
Cum-rights price £4.21

Last date for payment in full 090790

Benchmark Gilt = Treasury 9% 2008. RY = 10.8%

Additional interest would be payable of £14430000 x 11.8%, etc., with tax relief being available (tax rate = 34%)
In the year of issue, this has been taken as 9 months interest.

Cater Allen is in the banking sector and the information available is therefore limited. 'Published retentions' has been taken as the equivalent of 'earnings for ord.', and then this figure will be adjusted for any additional interest that would have arisen if debt had been issued instead of equity (see reconstructions).

Under the original equity issue, the EPS is 7.96p.
Under the debt recon. there is a fall in EPS:
With interest at 11.8%, the EPS is 5.40p
at 12.8%, the EPS is 5.03p
at 13.8%, the EPS is 4.66p

Example: Cater Allen ye Apr 1992 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(11.8%)		DEBT ALT.(12.8%)		DEBT ALT.(13.8%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		0		0		0		0
INTEREST (ex new fin)	0		0		0		0	
NEW FINANCE INTEREST	0		1703		1847		1991	
	-----		-----		-----		-----	
TOTAL INTEREST		0		1703		1847		1991
	-----		-----		-----		-----	
Net profit after int		0		-1703		-1847		-1991
Pub.pre-tax profit		0		-1703		-1847		-1991
basic taxation	0		0		0		0	
tax change	0		-562		-610		-657	
	-----		-----		-----		-----	
		0		-562		-610		-657
	-----		-----		-----		-----	
Earnings after tax		0		-1141		-1238		-1334
Pref dividend	0		0		0		0	
Minority interest	0		0		0		0	
EARNINGS for ORD		1819		678		581		485
	-----		-----		-----		-----	
EPS (pence/ord share)		7.61		3.46		2.97		2.47
	-----		-----		-----		-----	
Total ord. shares at start of year ('000)	23822		19514		19514		19514	
Average no. ord. shares (at start of year,'000)		23822		19514		19514		19514
No. of new ord. shares (total,'000)	90		90		90		90	
No. of new ord. shares (used in EPS calc.,'000)		90		90		90		90
Total ord. shares at y/e ('000)	23912		19604		19604		19604	
Average no. ord. shares (used in EPS calc.,'000)		23912		19604		19604		19604
Amount of debt £ (nominal)			£14.43m		£14.43m		£14.43m	
Coupon rate			11.80		12.80		13.80	
Tax rate		33		33		33		33

140690 Rights issue 2 for 9 ords at £3.35
Raised £14.43m

Ex-rights date 180690
Cum-rights price £4.21

Last date for payment in full 090790

Benchmark Gilt = Treasury 9% 2008. RY = 10.8%
Additional interest would be payable of £14430000 x 11.8%, etc.,
with tax relief being available (tax rate = 33%)

Cater Allen is in the banking sector and the information available is therefore limited. 'Published retentions' has been taken as the equivalent of 'earnings for ord.', and then this figure will be adjusted for any additional interest that would have arisen if debt had been issued instead of equity (see reconstructions).

There has been an actual increase in the number of ordinary shares of 90,000. These also been included in full in the debt reconstructions for both the total number of shares and the weighted average number of shares calculations.

Under the original equity issue, the EPS is 7.61p.

Under the debt recon. there is a decrease in EPS as follows:

With interest at 11.8%, the EPS is 3.46p
at 12.8%, the EPS is 2.97p
at 13.8%, the EPS is 2.47p.

APPENDIX 6-1-7

Example: Community Hospital Group ye Jun 1991 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE							
	EQUITY		DEBT ALT.(10.69%)		DEBT ALT.(11.69%)		DEBT ALT.(12.69%)			
	£000	£000	£000	£000	£000	£000	£000	£000	£000	
Operating profit		5548		5548		5548		5548		
INTEREST (ex new fin)	76		76		76		76		76	
NEW FINANCE INTEREST	0		199		218		237			
TOTAL INTEREST		76		275		294		313		
Net profit after int		5472		5273		5254		5235		
Pub.pre-tax profit		5814		5615		5596		5577		
basic taxation	1593		1593		1593		1593		1593	
tax change	0		-68		-74		-80			
		1593		1525		1519		1513		
Earnings after tax		4221		4089		4077		4065		
Pref dividend	0		0		0		0		0	
Minority interest	0		0		0		0		0	
EARNINGS for ORD		4221		4089		4077		4065		
EPS (pence/ord share)		15.56		16.90		16.85		16.80		
Total ord. shares at start of year ('000)	24201		24201		24201		24201		24201	
Average no. ord. shares (at start of year, '000)		24198		24198		24198		24198		
No. of new ord. shares (total, '000)	8067		0		0		0		0	
No. of new ord. shares (used in EPS calc., '000)		2928		3		3		3		
Total ord. shares at y/e ('000)	32268		24201		24201		24201		24201	
Average no. ord. shares (used in EPS calc., '000)		27126		24201		24201		24201		
Amount of debts £.			£10.97mn		£10.97mn		£10.97mn		£10.97mn	
Coupon rate			10.69		11.69		12.69			
Tax rate		34.00		34.00		34.00		34.00		

200291 Rights issue 1 for 3 ords at £1.36
Raised £10.97mn. Issued 8,067,282 shares.

Ex-rights date 110391
Cum-rights price £1.69

Last date for payment in full 020491

Benchmark Gilt = Treasury 9% 2008. RY = 9.69%

Additional interest would be payable of £10970000 x 10.69%, etc.,
with tax relief being available (tax rate = 34%)
In the year of issue, this has been taken as 2 months interest.

Under the original equity issue, the EPS is 15.56p. On the debt recon.,
the EPS is as follows:
with interest at 10.69%, the EPS is 16.90p,
at 11.69%, the EPS is 16.85p,
at 12.69%, the EPS is 16.80p.

Note. Interest capitalised for y/e June 1991 was £1.074mn

APPENDIX 6-1-8

Example: Cookson Group ye Dec 1991 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(10.83%)		DEBT ALT.(11.83%)		DEBT ALT.(12.83%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		63400		63400		63400		63400
INTEREST (ex new fin)	27000		27000		27000		27000	
NEW FINANCE INTEREST	0		6023		6579		7135	
TOTAL INTEREST		27000		33023		33579		34135
Net profit after int		36400		30377		29821		29265
Pub.pre-tax profit		34400		28377		27821		27265
basic taxation	18000		18000		18000		18000	
tax change	0		-1987		-2171		-2354	
		18000		16013		15829		15646
Earnings after tax		16400		12365		11992		11620
Pref dividend	100		100		100		100	
Minority interest	8500		8500		8500		8500	
EARNINGS for ORD		7800		3765		3392		3020
EPS (pence/ord share)		1.83		1.03		0.93		0.83
Total ord. shares at start of year ('000)	364000		364000		364000		364000	
Average no. ord. shares (at start of year, '000)		363888		363888		363888		363888
No. of new ord. shares (total, '000)	81400		500		500		500	
No. of new ord. shares (used in EPS calc., '000)		61812		500		500		500
Total ord. shares at y/e ('000)	445400		364500		364500		364500	
Average no. ord. shares (used in EPS calc., '000)		425700		364388		364388		364388
Amount of debts £			£83mn		£83mn		£83mn	
Coupon rate			10.83		11.83		12.83	
Tax rate		33.00		33.00		33.00		33.00

210391 Rights issue 2 for 9 ords at £1.05
Raised £83mn. Issued 80,899,813 shares.
The total of new shares issued in the year is 81,400,000. Shares of 500,187 were issued after the rights issue. This increase has been included in the debt reconstruction for both the total number of shares and for the weighted average number of shares figure.

Ex-rights date 110491
Cum-rights price £1.40

Last date for payment in full 110491

Benchmark Gilt = Treasury 9% 2008. RY = 9.83%

Additional interest would be payable of £83000000 x 10.83%, etc., with tax relief being available (tax rate = 33%)
In the year of issue, this has been taken as 8 months interest.

Under the original equity issue, the EPS is 1.83p, on the debt recon., this falls as follows:
With interest at 10.83%, the EPS is 1.03p,
at 11.83%, the EPS is 0.93p,
at 12.83%, the EPS is 0.83p.

NB. The Cookson group had irrecoverable ACT of £5.6mn for y/e Dec 91 (£0.8mn, 1990)

APPENDIX 6-1-9

Example: Thomas De La Rue ye Mar 1992 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTNETICAL ISSUE					
	EQUITY		DEBT ALT.(10.65%)		DEBT ALT.(11.65%)		DEBT ALT.(12.65%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		65500		65500		65500		65500
INTEREST (ex new fin)	10700		10700		10700		10700	
NEW FINANCE INTEREST	0		7170		7843		8517	
TOTAL INTEREST		10700		17870		18543		19217
Net profit after int		54800		47630		46957		46283
Pub.pre-tax profit		76200		69030		68357		67683
basic taxation	22500		22500		22500		22500	
tax change	0		2366		2588		2811	
		22500		20134		19912		19689
Earnings after tax		53700		48896		48445		47996
Prof dividend	0		0		0		0	
Minority interest	2700		2700		2700		2700	
EARNINGS for ORD		51000		46196		45745		45296
EPS (pence/ord share)		30.63		32.55		32.23		31.91
Total ord. shares at start of year ('000)	140697		140697		140697		140697	
Average no. ord. shares (at start of year,'000)		140653		140653		140653		140653
No. of new ord. shares (total, '000)	50700		4900		4900		4900	
No. of new ord. shares (used in EPS calc.,'000)		25850		1269		1269		1269
Total ord. shares at y/e ('000)	191397		145597		145597		145597	
Average no. ord. shares (used in EPS calc.,'000)		166503		141922		141922		141922
Amount of debts £ (nominal)			£160.3mn		£160.3mn		£160.3mn	
Coupon rate			10.65		11.65		12.65	
Tax rate		33		33		33		33

Comput. of min.int

221091 Rights issue 1 for 3 25p ords at £3.50
Raised £160.3mn
Share price £4.48

Benchmark Gilt = Treasury 9% 2008. RY = 9.65%

Additional interest would be payable of £160300000 x 10.65%, etc.,
with tax relief being available (tax rate = 33%)
In the year of issue, this has been taken as 5 months interest.

There was an actual increase in the number of ordinary shares of
4,900,000 shares. These have also been included in the debt reconstruction
scenarios.

For the reconstruction scenarios, shares in issue during the year:

01/04/91 - 03/01/92 = 140,697,000
04/01/92 - 31/03/92 = 145,597,000

The weighted average number of shares is calculated as:

140,697,000 x 9/12 + 145,597,000 x 3/12 = 141,922,000

The EPS under the original equity issue was 30.63p, under the debt recon.,
The EPS would increase slightly as follows:
With interest at 10.65%, the EPS is 32.55p
at 11.65%, the EPS is 32.23p
at 12.65%, the EPS is 31.91p

NB. In 1991, De La Rue capitalised interest of £1.247mn, though
NONE was capitalised in 1992.

APPENDIX 6-1-10

Example: Domino Printing ye Oct 1991 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE							
	EQUITY		DEBT ALT.(10.36%)		DEBT ALT.(11.36%)		DEBT ALT.(12.36%)			
	£000	£000	£000	£000	£000	£000	£000	£000	£000	
Operating profit		9065		9065		9065		9065		9065
INTEREST (ex new fin)	585		585		585		585		585	
NEW FINANCE INTEREST	0		0		0		0		0	
TOTAL INTEREST		585		585		585		585		585
Net profit after int		8480		8480		8480		8480		8480
pub.pre-tax profit		9026		9026		9026		9026		9026
basic taxation	3138		3138		3138		3138		3138	
tax charge	0		0		0		0		0	
		3138		3138		3138		3138		3138
Earnings after tax		5888		5888		5888		5888		5888
Pref dividend	0		0		0		0		0	
Minority interest	45		45		45		45		45	
EARNINGS for ORD		5843		5843		5843		5843		5843
EPS (pence/ord share)		28.84		28.84		28.84		28.84		28.84
Total ord. shares at start of year ('000)	20200		20200		20200		20200		20200	
Average no. ord. shares (at start of year, '000)		20184		20184		20184		20184		20184
No. of new ord. shares (total, '000)	160		160		160		160		160	
No. of new ord. shares (used in EPS calc., '000)		76		76		76		76		76
Total ord. shares at y/e ('000)	20360		20360		20360		20360		20360	
Average no. ord. shares (used in EPS calc., '000)		20260		20260		20260		20260		20260
Amount of debt £ (nominal)			£15.8m		£15.8m		£15.8m		£15.8m	
Coupon rate			10.36		11.36		12.36			
Tax rate		33.00		33.00		33.00		33.00		33.00

250991 Rights issue 1 for 4 ords at £3.10
Raised £15.8m. Issued 5,081,681.

Ex-rights date 141091
Cum-rights price £3.88

Last date for payment in full 041191

Benchmark Gilt = Treasury 9% 2008. RY = 9.36%

Additional interest would be payable of £15800000 x 10.36%, etc.,
with tax relief being available (tax rate = 33%)
In the year of issue, no interest has been taken into account, as the
issue is so near the end of the year.

This is a difficult issue to deal with as it straddles the company's
year end, and the subsequent year's results (for y/e Oct 1992) are not
yet available. Also the only new shares shown in the y/e Oct 1991 are
160,000 issued before the rights issue (and these have been included in the
debt reconstruction), the increase relating to the rights issue is in y/e
Oct 1992.

APPENDIX 6-1-11

Example: Eurotunnel ye Dec 1990 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(12.00%)		DEBT ALT.(13.00%)		DEBT ALT.(14.00%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		171860		171860		171860		171860
INTEREST (ex new fin)	202529		202529		202529		202529	
NEW FINANCE INTEREST	0		5453		5907		6362	
	-----		-----		-----		-----	
TOTAL INTEREST		202529		207982		208436		208891
		-----		-----		-----		-----
Net profit after int		-30669		-36122		-36576		-37031
Pub.pre-tax profit		243		-5210		-5664		-6119
basic taxation	1		1		1		1	
tax change	0		-1908		-2068		-2227	
	-----		-----		-----		-----	
		1		-1907		-2067		-2226
		-----		-----		-----		-----
Earnings after tax		242		-3302		-3598		-3893
Pref dividend	0		0		0		0	
Minority interest	0		0		0		0	
EARNINGS for ORD		242		-3302		-3598		-3893
	-----		-----		-----		-----	
EPS (pence/ord share)		0.05		-0.99		-1.08		-1.17
	-----		-----		-----		-----	
Total ord. shares at at start of year ('000)	332392		332392		332392		332392	
Average no. ord. shares (at start of year, '000)		332392		332392		332392		332392
No. of new ord. shares (total, '000)	199435		0		0		0	
No. of new ord. shares (used in EPS calc., '000)		199435		0		0		0
Total ord. shares at y/e ('000)	531827		332392		332392		332392	
Average no. ord. shares (used in EPS calc., '000)		531827		332392		332392		332392
Amount of debts £ (nominal)			£568mn		£568mn		£568mn	
Coupon rate			12.00		13.00		14.00	
Tax rate		35.00		35.00		35.00		35.00

021190 Rights issue 3 for 5 units at £2.85
Raised £568mn. Issued 199,435,068 units.

Ex-rights date 121190
Cum-rights price £4.03
Last date for payment in full 031290

Benchmark Gilt = Treasury 9% 2008. RY = 11.00%

Additional interest would be payable of £568000000 x 12.00%, etc.,
with tax relief being available (tax rate = 35%)
In the year of issue, one month's interest has been taken into account.

The whole increase in the ord. shares relates to the rights issue, and
has therefore been stripped out in the debt recon.

The EPS is 0.05p under the original equity issue, however under the
debt recon., the EPS declines and becomes 'negative':
With interest at 12%, the EPS is -0.99p,
13%, the EPS is -1.08p,
14%, the EPS is -1.17p.

Example: Eurotunnel ye Dec 1991 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(12.00%)		DEBT ALT.(13.00%)		DEBT ALT.(14.00%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		297226		297226		297226		297226
INTEREST (ex new fin)	348840		348840		348840		348840	
NEW FINANCE INTEREST	0		68160		73840		79520	
	-----		-----		-----		-----	
TOTAL INTEREST		348840		417000		422680		428360
		-----		-----		-----		-----
Net profit after int		-51614		-119774		-125454		-131134
Pub.pre-tax profit		-109		-68269		-73949		-79629
basic taxation	0		0		0		0	
tax change	0		-22493		-24367		-26242	
	-----		-----		-----		-----	
		0		-22493		-24367		-26242
		-----		-----		-----		-----
Earnings after tax		-109		-45776		-49582		-53387
Pref dividend	0		0		0		0	
Minority interest	0		0		0		0	
EARNINGS for ORD		-109		-45776		-49582		-53387
	=====		=====		=====		=====	
EPS (pence/ord share)		0.00		-0.89		-0.97		-1.04
	=====		=====		=====		=====	
Total ord. shares at at start of year ('000)	531827		332392		332392		332392	
Average no. ord. shares (at start of year, '000)		531827		332392		332392		332392
No. of new ord. shares (total, '000)	4797173		4797173		4797173		4797173	
No. of new ord. shares (used in EPS calc., '000)		4797173		4797173		4797173		4797173
Total ord. shares at y/e ('000)	5329000		5129565		5129565		5129565	
Average no. ord. shares (used in EPS calc., '000)		5329000		5129565		5129565		5129565
Amount of debts £ (nominal)			£568mn		£568mn		£568mn	
Coupon rate			12.00		13.00		14.00	
Tax rate		33.00		33.00		33.00		33.00

021190 Rights issue 3 for 5 units at £2.85
Raised £568mn

Ex-rights date 121190
Cum-rights price £4.03

Last date for payment in full 031290

Benchmark Gilt = Treasury 9% 2008. RY = 11.00%

Additional interest would be payable of £568000000 x 12.00%, etc.,
with tax relief being available (tax rate = 33%)

The increase of 4797173 in no. of shares does not relate to the previous
year's rights issue and is therefore included in full for the debt
recon.

The EPS is 0.00p under the original equity issue, however under the
debt recon., the EPS declines and becomes 'negative':

With interest at 12%, the EPS is -0.89p,
13%, the EPS is -0.97p,
14%, the EPS is -1.04p.

APPENDIX 6-1-12

Example: Jeyes ye Dec 1989 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE							
	EQUITY		DEBT ALT.(10.97%)		DEBT ALT.(11.97%)		DEBT ALT.(12.97%)			
	£000	£000	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		2725		2725		2725		2725		2725
INTEREST (ex new fin)	1029		1029		1029		1029		1029	
NEW FINANCE INTEREST	0		0		0		0		0	
	-----		-----		-----		-----		-----	
TOTAL INTEREST		1029		1029		1029		1029		1029
	-----		-----		-----		-----		-----	
Net profit after int		1696		1696		1696		1696		1696
Pub.pre-tax profit		2363		2363		2363		2363		2363
basic taxation	502		502		502		502		502	
tax change	0		0		0		0		0	
	-----		-----		-----		-----		-----	
		502		502		502		502		502
	-----		-----		-----		-----		-----	
Earnings after tax		1861		1861		1861		1861		1861
Prof dividend	0		0		0		0		0	
Minority interest	0		0		0		0		0	
EARNINGS for ORD		1861		1861		1861		1861		1861
	=====		=====		=====		=====		=====	
EPS (pence/ord share)		16.16		17.23		17.23		17.23		17.23
	=====		=====		=====		=====		=====	
Total ord. shares at start of year ('000)	10760		10760		10760		10760		10760	
Average no. ord. shares (at start of year,'000)		8020		8020		8020		8020		8020
No. of new ord. shares (total,'000)	3280		40		40		40		40	
No. of new ord. shares (used in EPS calc.,'000)		3494		2780		2780		2780		2780
Total ord. shares at y/e ('000)	14040		10800		10800		10800		10800	
Average no. ord. shares (used in EPS calc.,'000)		11514		10800		10800		10800		10800
Amount of debts £ (nominal)			£7.45mn		£7.45mn		£7.45mn		£7.45mn	
Coupon rate			10.97		11.97		12.97			
Tax rate		35.00		35.00		35.00		35.00		35.00

011289 Rights issue 3 for 10 ords at £2.30
Raised £7.45mn. Issued 3,240,295 shares.
The total new shares issued in the year are 3,280,000. The difference of 39,705 has been included in the debt reconstruction, for both the total number of shares and the weighted average calculations.

Ex-rights date 041289
Cum-rights price £2.86

Last date for payment in full 221289

Benchmark Gilt = Treasury 9% 2008. RY = 9.97%

Additional interest would be payable of £7450000 x 10.97%, etc., with tax relief being available (tax rate = 35%)
In the year of issue no interest has been taken into account as the issue is so near the end of the year.

The EPS is then 17.23p under all the debt scenarios, as against 16.16p for the original equity issue.

Example: Jeyes ye Dec 1990 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE			
	EQUITY		DEBT ALT.(10.97%)	DEBT ALT.(11.97%)	DEBT ALT.(12.97%)	
	£000	£000	£000	£000	£000	£000
Operating profit		4253		4253		4253
INTEREST (ex new fin)	686		686	686	686	
NEW FINANCE INTEREST	0		817	892	966	
TOTAL INTEREST		686		1578		1652
Net profit after int		3567		2675		2601
Pub.pre-tax profit		3564		2672		2598
basic taxation	1276		1276	1276	1276	
tax change	0		-286	-312	-338	
		1276		964		938
Earnings after tax		2288		1708		1660
Prof dividend	0		0	0	0	
Minority interest	0		0	0	0	
EARNINGS for ORD		2288		1708		1660
EPS (pence/ord share)		16.30		15.82		15.37
Total ord. shares at start of year ('000)	14040		10800	10800	10800	
Average no. ord. shares (at start of year, '000)		11514		10800		10800
No. of new ord. shares (total, '000)	0		0	0	0	
No. of new ord. shares (used in EPS calc., '000)		2526		0		0
Total ord. shares at y/e ('000)	14040		10800	10800	10800	
Average no. ord. shares (used in EPS calc., '000)		14040		10800		10800
Amount of debts £			£7.45mn	£7.45mn	£7.45mn	
Coupon rate			10.97	11.97	12.97	
Tax rate		35.00	35.00	35.00	35.00	

011289 Rights issue 3 for 10 ords at £2.30
Raised £7.45mn

Ex-rights date 041289
Cum-rights price £2.86

Last date for payment in full 221289

Benchmark Gilt = Treasury 9% 2008. RY = 9.97%

Additional interest would be payable of £7450000 x 10.97%, etc.,
with tax relief being available (tax rate = 35%)

In the following year, the EPS under the actual issue method is 16.30p.
Under the debt recon. there is a decrease in the EPS:
With interest at 10.97%, the EPS is 16.27p,
 at 11.97%, the EPS is 15.82p,
 at 12.97%, the EPS is 15.37p.

APPENDIX 6-1-13

Example: Kwik-Fit ye Feb 1989 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTMETICAL ISSUE							
	EQUITY		DEBT ALT.(10.09%)		DEBT ALT.(11.09%)		DEBT ALT.(12.09%)			
	£000	£000	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		17476		17476		17476		17476		17476
INTEREST (ex new fin)	1172		1172		1172		1172		1172	
NEW FINANCE INTEREST	0		2603		2861		3119			
TOTAL INTEREST		1172		3775		4033		4291		
Net profit after int		16304		13701		13443		13185		
Pub.pre-tax profit		18454		15851		15593		15335		
basic taxation	6747		6747		6747		6747		6747	
tax change	0		-911		-1001		-1092			
		6747.00		5835.87		5745.57		5655.27		
Earnings after tax		11707		10015		9847		9680		
Pref dividend	0		0		0		0			
Minority interest	48		48		48		48			
EARNINGS for ORD		11659		9967		9799		9632		
EPS (pence/ord share)		7.64		8.10		7.96		7.83		
Total ord. shares at start of year ('000)	85670		85670		85670		85670		85670	
Average no. ord. shares (at start of year, '000)		85140		85140		85140		85140		
No. of new ord. shares (total, '000)	75210		40810		40810		40810			
No. of new ord. shares (used in EPS calc., '000)		67490		37939		37939		37939		
Total ord. shares at y/e ('000)	160880		126480		126480		126480			
Average no. ord. shares (used in EPS calc. '000)		152630		123079		123079		123079		
Amount of debts £ (nominal)			£34.4mn		£34.4mn		£34.4mn		£34.4mn	
Coupon rate			10.09		11.09		12.09			
Tax rate		35.00		35.00		35.00		35.00		

Comput. of min.int

240588 Rights issue 1 for 4 ords at £1.00
Raised £34.4mn. Issued 34,400,000 shares.

Benchmark Gilt = Treasury 9% 2008. RY = 9.09%

Additional interest would be payable of £34400000 x 10.09%, etc.,
with tax relief being available (tax rate = 35%)
In the year of issue, this has been taken as 9 months interest.

On the original equity issue, the EPS is 7.64p. This increases on the
debt recon. as follows:
With interest at 10.09%, the EPS is 8.10p,
at 11.09%, the EPS is 7.96p,
at 12.09%, the EPS is 7.83p.

There is a total increase in the number of new ordinary shares of
75,210,000. The rights issue accounts for 34,400,000 of these, the balance
of 40,810,000 (issued 1 Apr 1988) has been included in the debt reconstruction.

For the reconstruction scenario, the weighted average number of shares
has been calculated as follows:

01/03/88 - 31/03/88 = 85,670,000 x 1/12 = 7,139,167
01/04/88 - 31/03/89 = 40,810,000

126,480,000 x 11/12 = 115,940,000
123,079,167

Example: Kwik-Fit ye Feb 1990 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(10.09%)		DEBT ALT.(11.09%)		DEBT ALT.(12.09%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		14336		14336		14336		14336
INTEREST (ex new fin)	4892		4892		4892		4892	
NEW FINANCE INTEREST	0		3471		3815		4159	
	-----		-----		-----		-----	
TOTAL INTEREST		4892		8363		8707		9051
		-----		-----		-----		-----
Net profit after int		9444		5973		5629		5285
Pub.pre-tax profit		15120		11649		11305		10961
basic taxation	5494		5494		5494		5494	
tax change	0		-1215		-1335		-1456	
	-----		-----		-----		-----	
		5494		4279		4159		4038
		-----		-----		-----		-----
Earnings after tax		9626		7370		7146		6923
Prof dividend	0		0		0		0	
Minority interest	-16		-16		-16		-16	
EARNINGS for ORD		9642		7386		7162		6939
	=====		=====		=====		=====	
EPS (pence/ord share)		5.98		5.97		5.79		5.61
	=====		=====		=====		=====	
Total ord. shares at start of year ('000)	160880		126480		126480		126480	
Average no. ord. shares (at start of year, '000)		152630		123079		123079		123079
No. of new ord. shares (total, '000)	567		567		567		567	
No. of new ord. shares (used in EPS calc., '000)		8522		567		567		567
Total ord. shares at y/e ('000)	161447		127047		127047		127047	
Average no. ord. shares (used in EPS calc. '000)		161152		123646		123646		123646
Amount of debt £ (nominal)			£34.4m		£34.4m		£34.4m	
Coupon rate			10.09		11.09		12.09	
Tax rate		35.00		35.00		35.00		35.00
Comput. of min.int								

240588 Rights issue 1 for 4 ords at £1.00
Raised £34.4m

Benchmark Gilt = Treasury 9% 2008. RY = 9.09%

Additional interest would be payable of £34400000 x 10.09%, etc.,
with tax relief being available (tax rate = 35%)

In the following year, the EPS under the actual issue method is 5.98p.

Under the reconstruction for debt the EPS falls as follows:

With interest at 10.09%, the EPS is 5.97p,
at 11.09%, the EPS is 5.79p,
at 12.09%, the EPS is 5.61p.

There has been an actual increase in the number of ordinary shares of 567,000. This has also been included in the debt reconstruction in both the total number of shares in issue and the weighted average number of shares.

APPENDIX 6-1-14

Example: Y.J.Lovell ye Sep 1991 YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTNETICAL ISSUE					
	EQUITY		DEBT ALT.(10.8%)		DEBT ALT.(11.8%)		DEBT ALT.(12.8%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		10078		10078		10078		10078
INTEREST (ex new fin)	6665		6665		6665		6665	
NEW FINANCE INTEREST	0		834		912		989	
TOTAL INTEREST		6665		7499		7577		7654
Net profit after int		3413		2579		2501		2424
Pub.pre-tax profit		-20307		-21141		-21219		-21296
basic taxation	-5087		502		502		502	
tax change	0		-284		-310		-336	
		-5087		218		192		166
Earnings after tax		-15220		-21360		-21411		-21462
Prof dividend	0		0		0		0	
Minority interest	0		0		0		0	
EARNINGS for ORD		-15220		-21360		-21411		-21462
EPS (pence/ord share)		-22.65		-36.22		-36.31		-36.39
Total ord. shares at start of year ('000)	58332		58332		58332		58332	
Average no. ord. shares (at start of year, '000)		57946		57946		57946		57946
No. of new ord. shares (total, '000)	24860		1094		1094		1094	
No. of new ord. shares (used in EPS calc., '000)		9258		1024		1024		1024
Total ord shares at y/e ('000)	83192		59426		59426		59426	
Average no. ord shares (used in EPS calc., '000)		67204		58970		58970		58970
Amount of debts £ (nominal)			£30.9mn		£30.9mn		£30.9mn	
Coupon rate			10.80		11.80		12.80	
Tax rate		34.00		34.00		34.00		34.00

250491 Rights issue 2 for 5 ords at £1.30
Raised £30.9mn. Issued 23,765,826 shares.

There was a total increase in the number of new ordinary shares of 24,860,000, of which 23,765,826 relates to the rights issue. The balance of 1,094,174 has been included in the debt reconstruction.

Ex-rights date 210591
Cum-rights price £1.26

Last date for payment in full 100691

Benchmark Gilt = Treasury 9% 2008. RY = 9.8%

Additional interest would be payable of £30900000 x 10.8%, etc., with tax relief being available (tax rate = 34%)
In the year of issue, this has been taken as 3 months interest.

Under the original equity issue, there is a 'negative' EPS of -22.65p.
Under the debt recon. there is an increase in the negative EPS:
With interest at 10.8%, the EPS is -36.22p,
at 11.8%, the EPS is -36.31p,
at 12.8%, the EPS is -37.39p.

For the debt reconstruction scenario, the weighted average number of shares has been calculated as:

01/10/88 - 29/02/89 = 58,332,000 x 5/12 = 24,305,000
01/03/89 - 30/09/89 = 59,426,000 x 7/12 = 34,665,167

58,970,167

APPENDIX 6-1-15

Example: Midland Bank ye Dec 1987 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(10.13%)		DEBT ALT.(11.13%)		DEBT ALT.(12.13%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		-493000		-493000		-493000		-493000
INTEREST (ex new fin)	191000		191000		191000		191000	
NEW FINANCE INTEREST	0		23360		25666		27972	
TOTAL INTEREST		191000		214360		216666		218972
Net profit after int		-684000		-707360		-709666		-711972
Pub.pre-tax profit		-505000		-528360		-530666		-532972
basic taxation	-58000		-58000		-58000		-58000	
tax change	0		-8176		-8983		-9790	
		-58000		-66176		-66983		-67790
Earnings after tax		-447000		-462184		-463683		-465182
Pref dividend	0		0		0		0	
Minority interest	9000		9000		9000		9000	
EARNINGS for ORD		-456000		-471184		-472683		-474182
EPS (pence/ord share)		-1.25		-1.97		-1.98		-1.99
Total ord. shares at start of year ('000)	232000		232000		232000		232000	
Average no. ord. shares (at start of year, '000)		234000		231000		231000		231000
No. of new ord. shares (total, '000)	315000		82074		82074		82074	
No. of new ord. shares (used in EPS calc., '000)		134000		7840		7840		7840
Total ord. shares at y/e ('000)	547000		314074		314074		314074	
Average no. ord. shares (used in EPS calc., '000)		365000		238840		238840		238840
Amount of debts £ (nominal)			£698.8mn		£698.8mn		£698.8mn	
Coupon rate			10.13		11.13		12.13	
Tax rate		35.00		35.00		35.00		35.00

070787 Rights issue 1 for 1 ords at £3.00
Raised £698.8mn. Issued 232,926,169 shares.

Ex-rights date 110887
Cum-rights price £6.15

Last date for payment in full 030987

Benchmark Gilt = Treasury 11.75% 2003-2007. RY = 9.13%

Additional interest would be payable of £698800000 x 10.13%, etc.,
with tax relief being available (tax rate = 35%)
In the year of issue, this has been taken as 4 months interest.

In the y/e Dec 1987, there was a total increase in the no. of
ord. shares of 315,000,000. Of this, only 232,926,169 was attributable
to the rights issue. The balance of 82,074,000 shares, issued 2 Dec 1987,
has been included in the debt reconstruction.

For the reconstruction scenario, the total shares in issue is:

01/01/87 - 01/12/87 = 232,000,000
02/12/87 - 31/12/87 = 314,074,000

For the recon., the weighted average number of shares is calculated as:

232,000,000 x 11/12 + 314,074,000 x 1/12 = 238,839,500

On the original debt issue, the EPS was 'negative' at -1.25p. Under
the debt recon., the EPS is as follows:
With interest at 10.13%, EPS is -1.97p,
at 11.13%, EPS is -1.98p
at 12.13%, EPS is -1.99p.

1987 Midland Bank made large losses, we can see that these would have

Example: Midland Bank ye Dec 1988 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(10.13%)		DEBT ALT.(11.13%)		DEBT ALT.(12.13%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		675000		675000		675000		675000
INTEREST (ex new fin)	194000		194000		194000		194000	
NEW FINANCE INTEREST	0		70788		77776		84764	
TOTAL INTEREST		194000		264788		271776		278764
Net profit after int		481000		410212		403224		396236
Pub.pre-tax profit		693000		622212		615224		608236
basic taxation	273000		273000		273000		273000	
tax change	0		-24776		-27222		-29668	
		273000		248224		245778		243332
Earnings after tax		420000		373988		369445		364903
Pref dividend	0		0		0		0	
Minority interest	8000		8000		8000		8000	
EARNINGS for ORD		412000		365988		361445		356903
EPS (pence/ord share)		0.75		1.16		1.15		1.13
Total ord. shares at start of year ('000)	547000		314074		314074		314074	
Average no. ord. shares (at start of year,'000)		365000		238840		238840		238840
No. of new ord. shares (total,'000)	3000		3000		3000		3000	
No. of new ord. shares (used in EPS calc.,'000)		183000		76234		76234		76234
Total ord. shares at y/e ('000)	550000		317074		317074		317074	
Average no. ord. shares (used in EPS calc.,'000)		548000		315074		315074		315074
Amount of debts £ (nominal)			£698.8mn		£698.8mn		£698.8mn	
Coupon rate			10.13		11.13		12.13	
Tax rate		35.00		35.00		35.00		35.00

070787 Rights issue 1 for 1 ords at £3.00
Raised £698.8mn

Ex-rights date 110887
Cum-rights price £6.15

Last date for payment in full 030987

Benchmark Gilt = Treasury 11.75% 2003-2007. RY = 9.13%

Additional interest would be payable of £698800000 x 10.13%, etc.,
with tax relief being available (tax rate = 35%)
A full year's interest has been included for 1988.

There has been an actual increase in ord. shares of 3,000,000 during the
year, issued 1 Sep 1988. These have also been included in the debt
reconstruction scenario.

For the reconstruction scenario, the total number of shares in issue is:

01/01/88 - 31/08/88 = 314,074,000
01/09/88 - 31/12 88 = 317,074,000

For the recon., the weighted average number of shares is calculated as:
314,074,000 x 8/12 + 317,074,000 x 4/12 = 315,074,000

On the original equity issue the EPS is 0.75p, under the debt recon., this
increases as follows:
with interest at 10.13%, EPS is 1.16p,
11.13%, EPS is 1.15p,
12.13%, EPS is 1.13p.

APPENDIX 6-1-16

Example: Regalian ye Mar 1992 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(11.19%)		DEBT ALT.(12.19%)		DEBT ALT.(13.19%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		7287		7287		7287		7287
INTEREST (ex new fin)	0		0		0		0	
NEW FINANCE INTEREST	0		1558		1698		1837	
TOTAL INTEREST		0		1558		1698		1837
Net profit after int		7287		5729		5589		5450
Pub.pre-tax profit		-26804		-28362		-28502		-28641
basic taxation	-5293		-5293		-5293		-5293	
tax change	0		-514		-560		-606	
		-5293		-5807		-5853		-5899
Earnings after tax		-21511		-22555		-22648		-22742
Prof dividend	0		0		0		0	
Minority interest	0		0		0		0	
EARNINGS for ORD		-21511		-22555		-22648		-22742
EPS (pence/ord share)		-19.74		-25.68		-25.79		-25.89
Total ord. shares at start of year ('000)		87829		87829		87829		87829
Average no. ord. shares at start of year ('000)		87829		87829		87829		87829
No. of new ord. shares (total, '000)		29276		0		0		0
No. of new ord. shares used in EPS calc. ('000)		21156		0		0		0
Total ord. shares at y/e ('000)		117105		87829		87829		87829
Average no. ord. shares (used in EPS calc., '000)		108985		87829		87829		87829
Amount of debts £ (nominal)				£20.786mn		£20.786mn		£20.786mn
Coupon rate				11.19		12.19		13.19
Tax rate		33.00		33.00		33.00		33.00

120691 Rights issue 1 for 3 ords at £0.71
Raised £20.786mn. Issued 29,276,471 shares.

Ex-rights date 010791
Cum-rights price £0.82

Last date for payment in full 220791

Benchmark Gilt = Treasury 9% 2008. RY = 10.19%

Additional interest would be payable of £20786000 x 11.19%, etc.,
with tax relief being available (tax rate = 33%)
In the year of issue, this has been taken as 8 months interest.

Under the original equity issue, there is a 'negative' EPS of -19.74p.
Under the debt recon. there is an increase in the negative EPS:
With interest at 11.19%, the EPS is -25.68p,
at 12.19%, the EPS is -25.79p,
at 13.19%, the EPS is -25.89p.

APPENDIX 6-1-17

Example: Renold ye Mar 1985 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(12.11%)		DEBT ALT.(13.11%)		DEBT ALT.(14.11%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		9100		9100		9100		9100
INTEREST (ex new fin)	4600		4600		4600		4600	
NEW FINANCE INTEREST	0		0		0		0	
	-----		-----		-----		-----	
TOTAL INTEREST		4600		4600		4600		4600
	-----		-----		-----		-----	
Net profit after int		4500		4500		4500		4500
Pub.pre-tax profit		4500		4500		4500		4500
basic taxation	1200		1200		1200		1200	
tax change	0		0		0		0	
	-----		-----		-----		-----	
		1200		1200		1200		1200
	-----		-----		-----		-----	
Earnings after tax		3300		3300		3300		3300
Prof dividend	100		100		100		100	
Minority interest	100		100		100		100	
EARNINGS for ORD		3100		3100		3100		3100
	=====		=====		=====		=====	
EPS (pence/ord share)		6.67		7.68		7.68		7.68
	=====		=====		=====		=====	
Total ord. shares at start of year ('000)	40352		40352		40352		40352	
Average no. ord. shares (at start of year, '000)		40352		40352		40352		40352
No. of new ord. shares (total, '000)	24048		0		0		0	
No. of new ord. shares (used in EPS calc., '000)		6092		0		0		0
Total ord. shares at y/e ('000)	64400		40352		40352		40352	
Average no. ord. shares (used in EPS calc., '000)		46444		40352		40352		40352
Amount of debts £ (nominal)			£9.37m		£9.37m		£9.37m	
Coupon rate			12.11		13.11		14.11	
Tax rate		45.00		45.00		45.00		45.00

250185 Rights issue 3 for 5 ords at £0.39
Raised £9.37m

Ex-rights date 120285
Cum-rights price £0.545

Last date for payment in full 060385

Benchmark Gilt = Treasury 11.75% 2003-2007. RY = 11.11%

Additional interest would be payable of £9370000 x 12.11%, etc.,
with tax relief being available (tax rate = 45%)
In the year of issue, no interest has been charged as the issue
was close to the year end.

The EPS on the original equity issue is 6.67p. The EPS on the debt
scenarios is 7.68p, i.e. it is the same for all of them as no interest
has been taken into account in this year. It is more than under the
equity scenario, as the 6,092,000 increase in the average no. of shares
has been stripped out in the debt recon. as this increase relates to the
rights issue.

Example: Renold ye Mar 1986 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(12.11%)		DEBT ALT.(13.11%)		DEBT ALT.(14.11%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		10000		10000		10000		10000
INTEREST (ex new fin)	3700		3700		3700		3700	
NEW FINANCE INTEREST	0		1135		1228		1322	
	-----		-----		-----		-----	
TOTAL INTEREST		3700		4835		4928		5022
		-----		-----		-----		-----
Net profit after int		6300		5165		5072		4978
Pub.pre-tax profit		7600		6465		6372		6278
basic taxation	2300		2300		2300		2300	
tax change	0		-454		-491		-529	
	-----		-----		-----		-----	
		2300		1846		1809		1771
		-----		-----		-----		-----
Earnings after tax		5300		4619		4563		4507
Pref dividend	100		100		100		100	
Minority interest	100		100		100		100	
EARNINGS for ORD		5100		4419		4363		4307
	=====		=====		=====		=====	
EPS (pence/ord share)		7.90		10.91		10.77		10.63
	=====		=====		=====		=====	
Total ord. shares at start of year ('000)	64400		40352		40352		40352	
Average no. ord. shares (at start of year, '000)		46444		40352		40352		40352
No. of new ord. shares (total, '000)	160		160		160		160	
No. of new ord. shares (used in EPS calc., '000)		18116		160		160		160
Total ord. shares at y/e ('000)	64560		40512		40512		40512	
Average no. ord. shares (used in EPS calc., '000)		64560		40512		40512		40512
Amount of debts £ (nominal)			£9.37mn		£9.37mn		£9.37mn	
Coupon rate			12.11		13.11		14.11	
Tax rate		40.00		40.00		40.00		40.00

250185 Rights issue 3 for 5 ords at £0.39
Raised £9.37mn

Ex-rights date 120285
Cum-rights price £0.545

Last date for payment in full 060385

Benchmark Gilt = Treasury 11.75% 2003-2007. RY = 11.11%
Additional interest would be payable of £9370000 x 12.11%, etc.,
with tax relief being available (tax rate = 40%)

There has been an actual increase during the year of 160,000 ordinary shares, issued 1 April 1985. These shares have also been included in the debt reconstructions in full for both the total number of new shares and the weighted average number of shares.

The EPS on the original equity issue is 7.90p. The EPS on the debt recon. is as follows:
with interest at 12.11%, the EPS is 10.91p,
 at 13.11%, the EPS is 10.77p,
 at 14.11%, the EPS is 10.63p.

Note. There was irrecoverable ACT of £0.5mn for y/e Mar 1986.

APPENDIX 6-1-18

Example: Richards plc ye Sep 1989 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(10.29%)		DEBT ALT.(11.29%)		DEBT ALT.(12.29%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		2905		2905		2905		2905
INTEREST (ex new fin)	584		584		584		584	
NEW FINANCE INTEREST	0		254		278		303	
	-----		-----		-----		-----	
TOTAL INTEREST		584		838		862		887
	-----		-----		-----		-----	
Net profit after int		2321		2067		2043		2018
Pub.pre-tax profit		2767		2513		2489		2464
basic taxation	778		778		778		778	
tax change	0		-89		-97		-106	
	-----		-----		-----		-----	
		778		689		681		672
	-----		-----		-----		-----	
Earnings after tax		1989		1824		1808		1792
Pref dividend	3		3		3		3	
Minority interest	0		0		0		0	
EARNINGS for ORD		1986		1821		1805		1789
	=====		=====		=====		=====	
EPS (pence/ord share)		8.96		11.39		11.29		11.19
	=====		=====		=====		=====	
Total ord. shares at start of year ('000)	13230		13230		13230		13230	
Average no. ord. shares (at start of year, '000)		13210		13210		13210		13210
No. of new ord. shares (total, '000)	9980		6636		6636		6636	
No. of new ord. shares (used in EPS calc., '000)		8960		2785		2785		2785
Total ord. shares at y/e ('000)	23210		19866		19866		19866	
Average no. ord. shares (used in EPS calc., '000)		22170		15995		15995		15995
Amount of debts £ (nominal)			£3.678mn		£3.678mn		£3.678mn	
Coupon rate			10.29		11.29		12.29	
Tax rate		35.00		35.00		35.00		35.00

091288 Rights issue 1 for 4 ords at £1.10
Raised £3.678mn. Issued 3,343,801 shares.

Ex-rights date 090189
Cum-rights price £1.26

Last date for full payment 300489

Benchmark Gilt = Treasury 9% 2008 RY = 9.29%

Additional interest would be payable of £3678000 x 10.29%, etc.,
with tax relief being available (tax rate = 35%)
In the year of issue, this has been taken as 8 months interest.

During the year, ordinary shares increased by 9,980,000. However, the rights issue accounted for only 3,344,000 new ord. shares. Therefore, the balance of 6,636,000 was included in the debt recon. for the total number of new shares.

For the debt reconstruction, the weighted average number of shares is calculated as:

01/10/88 - 04/05/89 = 13,230,000 x 7/12 = 7,717,500
05/05/89 - 30/09/89 = 19,866,000 x 5/12 = 8,277,500

i.e. a total of 15,995,000.

In the original equity issue, the EPS is 8.96p.
On the debt recon., the EPS figures changed as follows:
With interest at 10.29%, the EPS is 11.39p,
at 11.29%, the EPS is 11.29p,
at 12.29%, the EPS is 11.19p.

Example: Richards plc ye Sep 1990 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE							
	EQUITY		DEBT ALT.(10.29%)		DEBT ALT.(11.29%)		DEBT ALT.(12.29%)			
	£000	£000	£000	£000	£000	£000	£000	£000	£000	
Operating profit		2543		2543		2543		2543		2543
INTEREST (ex new fin)	231		231		231		231		231	
NEW FINANCE INTEREST	0		378		415		452			
TOTAL INTEREST		231		609		646		683		
Net profit after int		2312		1934		1897		1860		
Pub.pre-tax profit		2815		2437		2400		2363		
basic taxation	679		679		679		679			
tax change	0		-132		-145		-158			
		679		547		534		521		
Earnings after tax		2136		1890		1866		1842		
Pref dividend	3		3		3		3			
Minority interest	0		0		0		0			
EARNINGS for ORD		2133		1887		1863		1839		
EPS (pence/ord share)		9.18		9.49		9.37		9.25		
Total ord. shares at start of year ('000)	23210		19866		19866		19866		19866	
Average no. ord. shares (at start of year,'000)		22170		15995		15995		15995		
No. of new ord. shares (total,'000)	146		146		146		146		146	
No. of new ord. shares (used in EPS calc.,'000)		1063		3895		3895		3895		
Total ord. shares at y/e ('000)	23356		20012		20012		20012		20012	
Average no. ord. shares (used in EPS calc.,'000)		23233		19890		19890		19890		
Amount of debts £ (nominal)			£3.678mn		£3.678mn		£3.678mn		£3.678mn	
Coupon rate			10.29		11.29		12.29			
Tax rate		35.00		35.00		35.00		35.00		

091288 Rights issue 1 for 4 ords at £1.10
Raised £3.678mn

Ex-rights date 090189
Cum-rights price £1.26

Last date for full payment 300189

Benchmark Gilt = Treasury 9% 2008 RY = 9.29%

Additional interest would be payable of £3678000 x 10.29%, etc.,
with tax relief being available (tax rate = 35%)

There has been an actual increase in the number of shares of 146,000,
issued 3 August 1990, and this has also been included in the debt recon.

For the recon. scenarios, total shares in issue:

01/10/89 - 02/08/90 = 19,866,000
03/08/90 - 30/09/90 = 20,012,000

For the debt recon., the weighted average number of shares is:

19,866,000 x 10/12 + 20,012,000 x 2/12 = 19,890,333

In the original equity issue, the EPS is 9.18p.
On the debt recon., the EPS figures increase as follows:
With interest at 10.29%, the EPS is 9.49p,
at 11.29%, the EPS is 9.37p,
at 12.29%, the EPS is 9.25p.

APPENDIX 6-1-19

Exampler: Sketchley ye Mar 1991 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE							
	EQUITY		DEBT ALT.(11.93%)		DEBT ALT.(12.93%)		DEBT ALT.(13.93%)			
	£000	£000	£000	£000	£000	£000	£000	£000	£000	
Operating profit		3293		3293		3293		3293		
INTEREST (ex new fin)	6380		6380		6380		6380		6380	
NEW FINANCE INTEREST	0		1735		1880				2025	
	-----		-----		-----		-----		-----	
TOTAL INTEREST		6380		8115		8260			8405	
	-----		-----		-----		-----		-----	
Net profit after int		-3087		-4822		-4967			-5112	
Pub.pre-tax profit		-5264		-6999		-7144			-7289	
basic taxation	-1619		-1619		-1619			-1619		
tax change	0		-590		-639			-689		
	-----		-----		-----		-----		-----	
		-1619		-2209		-2258			-2308	
	-----		-----		-----		-----		-----	
Earnings after tax		-3645		-4790		-4886			-4982	
Prof dividend	6		6		6		6		6	
Minority interest	0		0		0		0		0	
EARNINGS for ORD		-3651		-4796		-4892			-4988	
	=====		=====		=====		=====		=====	
EPS (pence/ord share)		-6.92		-13.24		-13.50			-13.77	
	=====		=====		=====		=====		=====	
Total ord. shares at start of year ('000)	36223		36223		36223		36223		36223	
Average no. ord shares (at start of year,'000)		36206		36206		36206			36206	
No. of new ord.shares (total,'000)	21729		0		0		0		0	
No. of new ord.shares (used in EPS calc.,'000)		16559		17		17			17	
Total ord shares at y/e (000)	57952		36223		36223		36223		36223	
Average no. ord shares (used in EPS calc.,'000)		52765		36223		36223			36223	
Amount of debts £ (nominal)			£21.7mn		£21.7mn				£21.7mn	
Coupon rate			11.93		12.93				13.93	
Tax rate		34.00		34.00		34.00			34.00	

180690 Rights issue 3 for 5 ords at £1.00
Raised £21.7mn. Issued 21,729,000 shares.

Ex-rights date 120790
Cum-rights price £1.78

Last date for payment in full 030890

Benchmark Gilt = Treasury 9% 2008. RY = 10.93%

Additional interest would be payable of £21700000 x 11.93%, etc.,
with tax relief being available (tax rate = 34%)
In the year of issue, this has been taken as 8 months interest.

The weighted average number of shares for the debt reconstructions is
36,223,000, the shares which have been in issue all year (there were no
new shares issued apart from those relating to the rights issue).

It can be seen that the EPS would actually be 0.00p under all scenarios
but looking at the 'negative EPS' figures, it is least negative under
the original equity issue, at -6.92p. Under the debt recon. we have:
with interest at 11.93%, the EPS is -13.24p,
at 12.93%, the EPS is -13.50p,
at 13.93%, the EPS is -13.77p.

Example: Sketchley ye Mar 1992 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(11.93%)		DEBT ALT.(12.93%)		DEBT ALT.(13.93%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		6535		6535		6535		6535
INTEREST (ex new fin)	2980		2980		2980		2980	
NEW FINANCE INTEREST	0		2589		2806		3023	
TOTAL INTEREST		2980		5569		5786		6003
Net profit after int		3555		966		749		532
Pub.pre-tax profit		6015		3426		3209		2992
basic taxation	1504		1504		1504		1504	
tax change	0		-854		-926		-998	
		1504		650		578		506
Earnings after tax		4511		2776		2631		2486
Prof dividend	14		14		14		14	
Minority interest	0		0		0		0	
EARNINGS for ORD		4497		2762		2617		2472
EPS (pence/ord share)		7.76		7.63		7.22		6.82
Total ord. shares at start of year ('000)	57952		36223		36223		36223	
Average no. ord shares (at start of year,'000)		52765		36223		36223		36223
No. of new ord.shares (ord,'000)	0		0		0		0	
No. of new ord.shares (used in EPS calc.,'000)		5187		0		0		0
Total ord shares at y/e ('000)	57952		36223		36223		36223	
Average no. ord shares (used in EPS calc.'000)		57952		36223		36223		36223
Amount of debts £ (nominal)				£21.7m		£21.7m		£21.7m
Coupon rate				11.93		12.93		13.93
Tax rate		33.00		33.00		33.00		33.00

180690 Rights issue 3 for 5 ords at £1.00
Raised £21.7m

Benchmark Gilt = Treasury 9% 2008. RY = 10.93%

Additional interest would be payable of £21700000 x 11.93%, etc.,
with tax relief being available (tax rate = 33%)

It can be seen that the EPS would actually be 7.76p under the original equity issue, whereas under the debt recon, the EPS would drop as follows:
with interest at 11.93%, the EPS is 7.63p
at 12.93%, the EPS is 7.22p,
at 13.93%, the EPS is 6.82p.

APPENDIX 6-1-20

Example: Tay Homes ye Jun 1987 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE							
	EQUITY		DEBT ALT.(9.67%)		DEBT ALT.(10.67%)		DEBT ALT.(11.67%)			
	£000	£000	£000	£000	£000	£000	£000	£000	£000	
Operating profit		3260		3260		3260		3260		
INTEREST (ex new fin)	272		272		272		272		272	
NEW FINANCE INTEREST	0		0		0		0		0	
	-----		-----		-----		-----		-----	
TOTAL INTEREST		272		272		272		272		272
	-----		-----		-----		-----		-----	
Net profit after int		2988		2988		2988		2988		2988
Pub.pre-tax profit		3024		3024		3024		3024		3024
basic taxation	1082		1082		1082		1082		1082	
tax change	0		0		0		0		0	
	-----		-----		-----		-----		-----	
		1082		1082		1082		1082		1082
	-----		-----		-----		-----		-----	
Earnings after tax		1942		1942		1942		1942		1942
Pref dividend	0		0		0		0		0	
Minority interest	0		0		0		0		0	
EARNINGS for ORD		1942		1942		1942		1942		1942
	-----		-----		-----		-----		-----	
EPS (pence/ord share)		34.85		36.47		36.47		36.47		36.47
	-----		-----		-----		-----		-----	
Total ord. shares at start of year ('000)	5325		5325		5325		5325		5325	
Average no. ord. shares (at start of year, '000)		5325		5325		5325		5325		5325
No. of new ord. shares (total, '000)	1775		0		0		0		0	
No. of new ord. shares (used in EPS calc., '000)		247		0		0		0		0
Total ord. shares at y/e ('000)	7100		5325		5325		5325		5325	
Average no. ord. shares (used in EPS calc., '000)		5572		5325		5325		5325		5325
Amount of debts £ (nominal)			£6.1mn		£6.1mn		£6.1mn		£6.1mn	
Coupon rate			9.67		10.67		11.67			
Tax rate		35.00		35.00		35.00		35.00		35.00

080587 Rights issue 1 for 3 ords at £3.45
Raised £6.1mn. Issued 1,775,244 shares.

Ex-rights date 020687
Cum-rights price £4.37

Last date for payment in full 240687

Benchmark Gilt = Treasury 11.75% 2003-2007. RY = 8.67%

Additional interest would be payable of £6100000 x 9.67%, etc., with tax relief being available (tax rate = 35%)
In the year of issue, no interest has been taken into account as the last date for payment in full is 240687, very close to the company's year end.

For the debt reconstructions, the weighted average number of shares is 5,325,000 i.e. the shares which have been in issue since the start of the year (there was no increase in the number of new ordinary shares except for that relating to the rights issue).

The EPS on the original equity issue is 34.85p. The EPS on the debt scenarios is 36.47p, i.e. it is the same for all of them as no interest has been taken into account in this year. It is more than under the equity scenario, as the 247,000 increase in the average no. of shares has been stripped out in the debt recon. as this increase relates to the rights issue.

Example: Tay Homes ye Jun 1988 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE			
	EQUITY		DEBT ALT.(9.67%)	DEBT ALT.(10.67%)	DEBT ALT.(11.67%)	
	£000	£000	£000	£000	£000	£000
Operating profit		5537		5537		5537
INTEREST (ex new fin)	413		413	413	413	
NEW FINANCE INTEREST	0		590	651	712	
	-----		-----	-----	-----	
TOTAL INTEREST		413		1064		1125
		-----		-----		-----
Net profit after int		5124		4473		4412
Pub.pre-tax profit		5151		4500		4439
basic taxation	1799		1799	1799	1799	
tax change	0		-206	-228	-249	
	-----		-----	-----	-----	
		1799		1571		1550
		-----		-----		-----
Earnings after tax		3352		2929		2889
Pref dividend	0		0	0	0	
Minority interest	0		0	0	0	
EARNINGS for ORD		3352		2929		2889
	=====		=====	=====	=====	
EPS (pence/ord share)		47.21		55.00		54.26
	=====		=====	=====	=====	
Total ord. shares at start of year ('000)	7100		5325	5325	5325	
Average no. ord. shares (at start of year,'000)		5572		5325		5325
No. of new ord. shares (total,'000)	0		0	0	0	
No. of new ord. shares (used in EPS calc.,'000)		1528		0		0
Total ord. shares at y/e ('000)	7100		5325	5325	5325	
Average no. ord. shares (used in EPS calc.,'000)		7100		5325		5325
Amount of debts £ (nominal)			£6.1mn	£6.1mn		£6.1mn
Coupon rate			9.67	10.67		11.67
Tax rate		35.00		35.00		35.00

080587 Rights issue 1 for 3 ords at £3.45
Raised £6.1mn

Ex-rights date 020687
Cum-rights price £4.37

Last date for payment in full 240687

Benchmark Gilt = Treasury 11.75% 2003-2007. RY = 8.67%

Additional interest would be payable of £6100000 x 9.67%, etc.,
with tax relief being available (tax rate = 35%)

Under the original equity issue, the EPS is 47.21p. On the debt recon.
the EPS increases as follows:
with interest at 9.67%, EPS is 55.75p,
 at 10.67%, EPS is 55.00p,
 at 11.67%, EPS is 54.26p.

APPENDIX 6-1-21

Example: Tibbet & Britten ye Dec 1989 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(10.08%)		DEBT ALT.(11.08%)		DEBT ALT.(12.08%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		9111		9111		9111		9111
INTEREST (ex new fin)	1208		1208		1208		1208	
NEW FINANCE INTEREST	0		1108		1217		1327	
TOTAL INTEREST		1208		2316		2425		2535
Net profit after int		7903		6795		6686		6576
Pub.pre-tax profit		9062		7954		7845		7735
basic taxation	3208		3208		3208		3208	
tax change	0		-388		-426		-465	
		3208		2820		2782		2743
Earnings after tax		5854		5134		5063		4991
Prof dividend	0		0		0		0	
Minority interest	0		0		0		0	
EARNINGS for ORD		5854		5134		5063		4991
EPS (pence/ord share)		18.74		19.33		19.06		18.79
Total ord. shares at start of year ('000)	26260		26260		26260		26260	
Average no. ord. shares (at start of year,'000)		26260		26260		26260		26260
No. of new ord. shares (total,'000)	7280		715		0		0	
No. of new ord. shares (used in EPS calc.,'000)		4980		298		298		298
Total ord. shares at y/e ('000)	33540		26975		26260		26260	
Average no. ord. shares (used in EPS calc.,'000)		31240		26558		26558		26558
Amount of debts £ (nominal)			£16.4mn		£16.4mn		£16.4mn	
Coupon rate			10.08		11.08		12.08	
Tax rate		35.00		35.00		35.00		35.00

220389 Rights issue 1 for 4 ords at £2.50.
Raised £16.4mn. Issued 6,564,840 shares.

Ex-rights date 230389
Cum-rights price £2.83

Last date for payment in full 140489

Benchmark Gilt = Treasury 9% 2008. RY = 9.08%

Additional interest would be payable of £16400000 x 10.08%, etc.,
with tax relief being available (tax rate = 35%)
In the year of issue, this has been taken as 8 months interest.

There has been an increase in the number of new ordinary shares of 7,280,000, of which 6,564,840 are attributable to the rights issue, the balance of 715,000, issued 06 Aug 1989 has been included in the debt reconstructions as well.

For the debt reconstruction scenarios, the weighted average number of shares is calculated as:

01/01/89 - 05/08/89 = 26,260,000 x 7/12 = 15,318,333
06/08/90 - 31/12/90 = 26,975,000 x 5/12 = 11,239,583

i.e. a weighted average total of 26,557,916.

Under the original equity issue, the EPS is 18.74p.
On the debt recon., the EPS would increase as follows:
With interest at 10.08%, the EPS is 19.33p
at 11.08%, the EPS is 19.06p,
at 12.08%, the EPS is 18.79p.

Example: Tibbet & Britten ye Dec 1990 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT. (10.08%)		DEBT ALT. (11.08%)		DEBT ALT. (12.08%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		11298		11298		11298		11298
INTEREST (ex new fin)	1665		1665		1665		1665	
NEW FINANCE INTEREST	0		1653		1817		1981	
TOTAL INTEREST		1665		3318		3482		3646
Net profit after int		9633		7980		7816		7652
Pub.pre-tax profit		11677		10024		9860		9696
basic taxation	4087		4087		4087		4087	
tax change	0		-579		-636		-693	
		4087		3508		3451		3394
Earnings after tax		7590		6515		6409		6302
Pref dividend	0		0		0		0	
Minority interest	0		0		0		0	
EARNINGS for ORD		7590		6515		6409		6302
EPS (pence/ord share)		22.48		23.96		23.57		23.17
Total ord. shares at start of year ('000)	33540		26975		26975		26975	
Average no. ord. shares (at start of year, '000)		31240		26558		26558		26558
No. of new ord. shares (total, '000)	880		880		880		880	
No. of new ord. shares (used in EPS calc., '000)		2520		637		637		637
Total ord. shares at y/e (000)	34420		27855		27855		27855	
Average no. ord. shares (used in EPS calc., '000)		33760		27195		27195		27195
Amount of debts £ (nominal)			£16.4mn		£16.4mn		£16.4mn	
Coupon rate			10.08		11.08		12.08	
Tax rate		35.00	35.00		35.00		35.00	

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220389 Rights issue 1 for 4 ords at £2.50.
Raised £16.4mn

Benchmark Gilt = Treasury 9% 2008. RY = 9.08%

Additional interest would be payable of £16400000 x 10.08%, etc.,
with tax relief being available (tax rate = 35%)

There has been an increase in the number of new ordinary shares of
880,000 issued 1 October 1990. These have also been included in the debt
reconstruction scenarios.

For the reconstruction scenarios, the weighted average number of shares
is calculated as:

01/01/90 - 30/09/90 = 26,975,000 x 9/12 = 20,231,250
01/10/90 - 31/12/90 = 27,855,000 x 3/12 = 6,963,750
.....
27,195,000

The EPS under equity is 22.48p, on the debt recon. it is as follows:
With interest at 10.08% an EPS of 23.96p,
at 11.08% an EPS of 23.57p,
at 12.08% an EPS of 23.17p.

APPENDIX 6-1-22

Example: Westbury ye Feb 1992 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE					
	EQUITY		DEBT ALT.(11.03%)		DEBT ALT.(12.03%)		DEBT ALT.(13.03%)	
	£000	£000	£000	£000	£000	£000	£000	£000
Operating profit		-9446		-9446		-9446		-9446
INTEREST (ex new fin)	5239		5239		5239		5239	
NEW FINANCE INTEREST	0		1596		1740		1885	
	-----		-----		-----		-----	
TOTAL INTEREST		5239		6835		6979		7124
	-----		-----		-----		-----	
Net profit after int		-14685		-16281		-16425		-16570
Pub.pre-tax profit		-15120		-16716		-16860		-17005
basic taxation	-4441		-4441		-4441		-4441	
tax change	0		-527		-574		-622	
	-----		-----		-----		-----	
		-4441		-4968		-5015		-5063
	-----		-----		-----		-----	
Earnings after tax		-10679		-11748		-11845		-11942
Pref dividend	0		0		0		0	
Minority interest	0		0		0		0	
EARNINGS for ORD		-10679		-11748		-11845		-11942
	=====		=====		=====		=====	
EPS (pence/ord share)		-17.36		-23.57		-23.77		-23.96
	=====		=====		=====		=====	
Total ord. shares at start of year ('000)	49820		49820		49820		49820	
Average no. ord. shares (at start of year, '000)		49820		49820		49820		49820
No. of new ord. shares issued	16630		17		17		17	
No. of new ord. shares (used in EPS calc., '000)		11696		17		17		17
Total ord. shares at y/e ('000)	66450		49837		49837		49837	
Average no. ord. shares (used in EPS calc., '000)		61516		49837		49837		49837
Amount of debts £ (nominal)			£21.59mn		£21.59mn		£21.59mn	
Coupon rate			11.03		12.03		13.03	
Tax rate		33.00		33.00		33.00		33.00

230591 Rights issue 1 for 3 ords at £1.30
Raised £21.59mn. Issued 16,612,797 shares.

Ex-rights date 110691
Cum-rights price £1.56

Last date for payment in full 030791

Benchmark Gilt = Treasury 9% 2008. RY = 10.03%

Additional interest would be payable of £21590000 x 11.03%, etc.,
with tax relief being available (tax rate = 33%)
In the year of issue, this has been taken as 8 months interest.

There was an increase in the number of shares of 16,630,000, of which
16,612,797 related to the rights issue, the balance of 17,203, issued Jan
1991 has therefore been included in full in the total number of shares and
the weighted average number of shares for the debt reconstructions.

Under the original equity issue, the EPS is 'negative'. Under the
debt recon., it becomes increasingly more negative as the interest
rate increases:

with interest at 11.03%, EPS = -23.57p,
at 12.03%, EPS = -23.77p,
at 13.03%, EPS = -23.96p.

APPENDIX 6-1-23

Example: Allied Lyons ye Feb 1989 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTNETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		540000		540000
INTEREST (ex new fin)	147000		147000	
NEW FINANCE INTEREST	0		0	
	-----		-----	
TOTAL INTEREST		147000		147000
		-----		-----
Net profit after int		393000		393000
Pub.pre-tax profit		502000		502000
basic taxation	139000		139000	
tax change	0		0	
	-----		-----	
TOTAL TAX		139000		139000
		-----		-----
Earnings after tax		363000		363000
Pref dividend	24000		24000	
Minority interest	16000		16000	
EARNINGS for ORD		323000		323000
	=====		=====	
EPS (pence/ord share)		43.69		42.47
		=====		=====
Total ord. shares at start of year ('000)	729612		729612	
Average no. ord. shares (at start of year, '000)		720288		720288
No. of new ord. shares (total, '000)	22668		109654	
No. of new ord. shares (used in EPS calc., '000)		19064		40308
Total ord. shares at y/e ('000)	752280		839266	
Average no. ord. shares (used in EPS calc., '000)		739352		760596
Amount of new debts £ (nominal)		350000000		N/A
Coupon rate		9.750		N/A
Tax rate		35.00		35.00

100289 £350,000,000 9.75% 2019 issued at 98.477
£150m was placed in Feb '89 at 98.477% and £200m was placed
in Sep '89 at 93.591%, raising a total of £334,897,500.

Interest due Apr 1 and Oct 1. First payment due 01/10/89

Share price 100289 = £4.81
If 20% discount, then would issue £334897500/£3.85 i.e.(.8 x £4.81)
= 86,986,364 new ordinary shares

Given that the debt was issued so close to the year end, no interest
has been taken into account in the year of issue.

There has been an actual increase in the number of shares in issue of
22,668,000. These were issued on 27 September 1988.

The EPS under the original debt scenario is 43.69p. Under the equity
recon., this would drop to 42.47p. This is to be expected given that no
interest relating to the large debt issue has been excluded (as the issue
was so close to the year end that no interest would have been charged)
and yet the increase in shares relating to the equity recon. has been
included. A better picture can be obtained by looking at the following
year.

Note. (1) Interest capitalised y/e 1989 £2m.

Example: Allied Lyons ye Feb 1990 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		593000		593000
INTEREST (ex new fin)	143625		143625	
NEW FINANCE INTEREST	24375		0	
	-----		-----	
TOTAL INTEREST		168000		143625
		-----		-----
Net profit after int		425000		449375
Pub.pre-tax profit		565000		589375
basic taxation	161000		161000	
tax change	0		8531	
	-----		-----	
TOTAL TAX		161000		169531
		-----		-----
Earnings after tax		404000		419844
Prof dividend	24000		24000	
Minority interest	19000		19000	
EARNINGS for ORD		361000		376844
	=====		=====	
EPS (pence/ord share)		47.72		44.67
	=====		=====	
Total ord.shares at start of year ('000)	752280		839266	
Average no. ord. shares (at start of year, '000)		739352		760596
No. of new ord. shares (total, '000)	7337		7337	
No. of new ord. shares in EPS calc., '000)		17149		82950
ord. shares at y/e ('000)	759617		846603	
Average no. ord. shares (used in EPS calc., '000)		756501		843546
Amount of new debts £ (nominal)		350000000		N/A
Coupon rate		9.750		N/A
Tax rate		35.00		35.00

100289 £350,000,000 9.75% 2019 issued at 98.477

£150mn was placed in Feb '89 at 98.477% and £200mn was placed in Sep '89 at 93.591%, raising a total of £334,897,500.

Interest due Apr 1 and Oct 1. First payment due 01/10/89

Share price 100289 = £4.81

If 20% discount, then would issue £334897500/£3.85 i.e. (.8 x £4.81) = 86,986,364 new ordinary shares

For 1990 a full year's interest is charged on £150mn debt issued Feb.'89 and 1/2 year's interest on £200mn debt issued Sep.'89.

On the original debt issue, the EPS is 47.72p. On the equity recon. this falls to 44.67p.

Note. (1) Interest capitalised y/e 1990 £3mn.

There has been an increase in the no. of ord. shares of 7,337,000 and this has also been included in the equity recon.

The 7,337,000 shares were issued on 4 August 1989.

For the reconstruction scenario, shares in issue during the year:

01/03/89 - 03/08/89 = 839,266,000
04/08/89 - 28/02/90 = 846,603,000

The weighted average number of shares is calculated as:

839,266,000 x 5/12 + 846,603,000 x 7/12 = 843,545,917

Calcn. of ex-rights price

$$\begin{aligned} P_o &= 0.8P_c \\ &= 0.8 \times £4.81 \\ &= £3.85 \end{aligned}$$

N = 752,280,000 shares *

- M = EB/P_0
- = $334,897,500/£3.85$
- = $86,986,364$

The terms of the rights issue are:

M : N	m : n
86,986,364 : 752,280,000	
1 : 8.65	

$$P_x = \frac{r_p o + r_p c}{m+n}$$

$$= 1 \times \text{£}3.85 + 8.65 \times \text{£}4.81 / 1 + 8.65$$

$$= 45.46 / 9.65$$

$$= \text{£}4.71$$

Therefore theoretical ex-rights price is £4.71.

* The rights issue was very close to the year end and therefore based on the total number of shares issued by the year end.

Calculation of Weighted Average No. Shares
.....

Total proceeds from rights issue 86,986,364 x £3.85
= £334,897,500

Market price per share = £4.81

Fresh issue at market value = £34,897,500/£4.81
= 69,625,260 shares

Total no. shares issued	= 86,986,364
Less fresh issue at market value	=(69,625,260)
Bonus issue	= 17,361,104

Bonus issue based on: (i) 752,280,000 shares in issue before rights issue
(ii) 69,625,260 shares (fresh issue)

Total = 821,905,260 shares
 Bonus ratio = 17,361,104 : 821,905,260
 = 1 : 47.34 (3 : 142)
 Factor = 142/145

Shares	Actual			Weighted Av.
At start of yr.	729,612,000	x145/142	x7/12	434,598,697
Issue in Sep 1988	22,668,000			

	752,280,000	x145/142	x4/12	256,057,747
Fresh issue	69,625,260			
	-----			--
	821,905,260	x 145/142	x1/12	69,939,121
Bonus issue	17,361,104			-
	-----			-----
	839,266,364			760,595,565
	=====			=====

Example: Asda Group plc ye April 1987 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		185100		185100
INTEREST (ex new fin)	200		200	
NEW FINANCE INTEREST	0		0	
	-----		-----	
TOTAL INTEREST		200		200
		-----		-----
Net profit after int		184900		184900
Pub.pre-tax profit		192000		192000
basic taxation	62300		62300	
tax change	0		3369	
	-----		-----	
TOTAL TAX		62300		65669
		-----		-----
Earnings after tax		129700		126331
Prof dividend	200		200	
Minority interest	0		0	
EARNINGS for ORD		129500		126131
	=====		=====	
EPS (pence/ord share)		11.38		11.08
	=====		=====	
Total ord. shares at start of year ('000)	1136000		1136000	
Average no. ord. shares (at start of year, '000)		1133000		1133000
No. of new ord. shares (total, '000)	7000		93522 *	
No. of new ord. shares (used in EPS calc., '000)		5000		88625
Total ord. shares at y/e ('000)	1143000		1229522	
Average no. ord. shares (used in EPS calc., '000)		1138000		1221625
Amount of new debt £ (nominal)		100000000		N/A
Coupon rate		9.625		N/A
Tax rate		35.00		35.00

150586 £100000000 9.625% 2002 issued at 99.5

Interest due 150586, payable as to 35% on 150586 and 64.5% on 310786 (when issued in May '86).

Share price 150586 = £1.44

If 20% discount, then would issue £99500000/£1.15 (.8 x £1.44)
= 86521739 new ordinary shares

The EPS on the original debt scenario was 11.38p, under the equity recon., this would drop to 11.08p.

This is a particularly interesting case as the interest on the debenture amounts to £9,625,000, but Asda capitalised this interest and therefore it did not pass through the P & L Account, hence the low interest charge (in fact, Asda capitalised £17.5m interest charges in that particular year). This treatment is beneficial from the point of view of not adversely affecting EPS.

Another advantage is that whilst the interest is capitalised and shown on the Balance Sheet, avoiding the P & L altogether as an expense, for the purposes of taxation and the calculation of capital allowances, the capitalised interest is not a relevant expenditure, but will be allowable in computing the taxable profits and hence the final tax charge, so the P & L tax charge will be lower reflecting the benefit of interest relief on debt finance.

Also when the equity recon. is performed, the tax relief that was available on the debt must be added back, thereby increasing the tax charge in the P&L.

Note. There has been an actual increase in the number of ordinary shares during the year, so these have been included in the equity recon. also.

* The number of new shares in the year is 86,522 relating to the rights issue, and 7,000 (all 000s) relating to an increase of this amount in the actual number of shares, i.e. total 93,522.

The 7,000,000 shares actually issued during the year were issued on December 18th, i.e. 8.6 months into the year.

Note. Asda capitalised £17.5m interest in the y/e Apr 1987.

Example: Asda Group plc ye April 1988 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		185660		185660
INTEREST (ex new fin)	2700		2700	
NEW FINANCE INTEREST	0		0	
	-----		-----	
TOTAL INTEREST		2700		2700
		-----		-----
Net profit after int		182960		182960
Pub.pre-tax profit		215300		215300
basic taxation	69900		69900	
tax change	0		3369	
	-----		-----	
TOTAL TAX		69900		73269
		-----		-----
Earnings after tax		145400		142031
Pref dividend	200		200	
Minority interest	0		0	
EARNINGS for ORD		145200		141831
	=====		=====	
EPS (pence/ord share)		12.64		11.47
	=====		=====	
Total ord. shares at start of year ('000)	1143000		1229522	
Average no. ord. shares (at start of year, '000)		1138000		1221625
No. of new ord. shares (total, '000)	12000		12000	
No. of new ord. shares (used in EPS calc., '000)		11000		14897
Total ord. shares at y/e ('000)	1155000		1241522	
Average no. ord. shares (used in EPS calc., '000)		1149000		1236522
Amount of new debts £ (nominal)		100000000		N/A
Coupon rate		9.625		N/A
Tax rate		35.00		35.00

150586 £100000000 9.625% 2002 issued at 99.5
Share price 150586 = £1.44
If 20% discount, then would issue £99500000/((.8 x £1.44)
= 86521739 new ordinary shares

The EPS figures for 1987 and 1988 would then be:

	1987	1988
Actual(debt)	11.38	12.64
Recon.(equity)	11.08	11.47

Again there has been an increase in the no. of ord. shares and so this has also been included in the equity recon.

The 12,000,000 shares were issued on 1 October 1987.

For the reconstruction scenario, shares in issue during the year:

01/05/87 - 30/09/87 = 1,229,522,000
01/10/87 - 30/04/88 = 1,241,522,000

The weighted average number of shares is calculated as:

1,229,522,000 x 5/12 + 1,241,522,000 x 7/12 = 1,236,522,000

Note. Asda capitalised £17.4m interest charges in y/e Apr 1988.

Calcn. of ex-rights price

$$\begin{aligned} P_o &= 0.8P_c \\ &= 0.8 \times \text{£}1.44 \\ &= \text{£}1.15 \end{aligned}$$

$$N = 1,136,000,000 \text{ shares} *$$

$$\begin{aligned} M &= \text{£}B/P_o \\ &= 99,500,000/\text{£}1.15 \\ &= 86,521,739 \end{aligned}$$

The terms of the rights issue are:

$$\begin{aligned} M : N &= m : n \\ 86,521,739 : 1,136,000,000 \\ 1 : 13.13 \end{aligned}$$

$$\begin{aligned} P_x &= \frac{mP_o + nP_c}{m+n} \\ &= \frac{1 \times \text{£}1.15 + 13.13 \times \text{£}1.44}{1 + 13.13} \\ &= 20.06/14.13 \\ &= \text{£}1.42 \end{aligned}$$

Therefore theoretical ex-rights price is £1.42.

* Based on number of shares in issue at the start of the year.

Calculation of Weighted Average No. Shares

$$\begin{aligned} \text{Total proceeds from rights issue} &= 86,521,739 \times \text{£}1.15 \\ &= \text{£}99,500,000 \end{aligned}$$

$$\text{Market price per share} = \text{£}1.44$$

$$\begin{aligned} \text{Fresh issue at market value} &= \text{£}99,500,000/\text{£}1.44 \\ &= 69,097,222 \text{ shares} \end{aligned}$$

$$\text{Total no. shares issued} = 86,521,739$$

$$\text{Less fresh issue at market value} = (69,097,222)$$

$$\text{Bonus issue} = 17,424,517$$

Bonus issue based on: (i) 1,136,000,000 shares in issue before rights issue
(ii) 69,097,222 shares (fresh issue)

$$\text{Total} = 1,205,097,222 \text{ shares}$$

$$\begin{aligned} \text{Bonus ratio} &= 17,424,517 : 1,205,097,222 \\ &= 1 : 69.16 (1 : 69) \end{aligned}$$

$$\text{Factor} = 69/70$$

Shares	Actual		Weighted Av.
	1,136,000,000	x70/69 x.5/12	48,019,324
Fresh issue	69,097,222		-
	-----		--
	1,205,097,222	x70/69 x11.5/12	1,171,622,299
Bonus issue	17,424,517		-
	-----		-----
	1,222,521,739		1,219,641,623
Issue in Dec 1986	7,000,000	x3.4/12	1,983,000
	-----		-----
	1,229,521,739		1,221,624,956
	=====		=====

APPENDIX 6-1-25

Example: Asda Group plc ye April 1989 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		195900		195900
INTEREST (ex new fin)	767		767	
NEW FINANCE INTEREST	1133		0	
	-----		-----	
TOTAL INTEREST		1900		767
		-----		-----
Net profit after int		194000		195133
Pub.pre-tax profit		246600		247733
basic taxation	79000		79000	
tax change	0		397	
	-----		-----	
TOTAL TAX		79000		79397
		-----		-----
Earnings after tax		167600		168336
Pref dividend	100		100	
Minority interest	0		0	
EARNINGS for ORD		167500		168236
	=====		=====	
EPS (pence/ord share)		14.48		16.21
		=====		=====
Total ord. shares at start of year ('000)		1155000		1155000
Average no. ord. shares (at start of year, '000)		1149000		1149000
No. of new ord. shares (total, '000)		8000		115789 *
No. of new ord. shares (used in EPS calc., '000)		8000		34943
Total ord. shares at y/e ('000)		1163000		1270789
Average no. ord. shares (used in EPS calc., '000)		1157000		1183943
Amount of new debts £ (nominal)		125000000		N/A
Coupon rate		10.875		N/A
Tax rate		35.00		35.00

310389 £125000000 10.875% 2010 issued at 101.753

Interest due Apr.20.

Share price 310389 = £1.47

If 20% discount, then would issue £127191250/£1.18 (.8 x £1.47)

= 107789195 new ordinary shares

The interest on the new debt is £13593750, for which tax relief is given @ 35%. In the year of issue, one month's interest has been accrued.

There has been an actual increase during the year in the number of ordinary shares of 8,000,000. These were issued 1 February 1989.

The EPS under the original debt issue is 14.48p, under the equity recon. this falls to 14.21p.

Note (1) Asda capitalised £27.9m interest charges in y/e Apr 1989.

* The total number of new shares is 8,000,000 plus the hypothetical rights issue of 107,789,195.

Example: Asda Group plc ye April 1990 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		217000		217000
INTEREST (ex new fin)	48606		48606	
NEW FINANCE INTEREST	13594		0	
	-----		-----	
TOTAL INTEREST		62200		48606
		-----		-----
Net profit after int		154800		168394
Pub.pre-tax profit		180300		193894
basic taxation	57500		57500	
tax change	0		4758	
	-----		-----	
TOTAL TAX		57500		62258
		-----		-----
Earnings after tax		122800		131636
Pref dividend	0		0	
Minority interest	200		200	
EARNINGS for ORD		122600		131436
	=====		=====	
EPS (pence/ord share)		10.48		10.29
	=====		=====	
Total ord. shares at start of year ('000)	1163000		1270789	
Average no. ord. shares (at start of year, '000)		1157000		1183943
No. of new ord. shares (total, '000)	10000		10000	
No. of new ord. shares (used in EPS calc., '000)		13000		93929
Total ord. shares at y/e ('000)	1173000		1280789	
Average no. ord. shares (used in EPS calc., '000)		1170000		1277872
Amount of new debts £ (nominal)		125000000		N/A
Coupon rate		10.875		N/A
Tax rate		35.00		35.00

310389 £125000000 10.875% 2010 issued at 101.753

Share price 310389 = £1.47

If 20% discount, then would issue £127191250/(.8 x £1.47)

= 107789195 new ordinary shares

The interest on the new debt is £13593750, for which tax relief is given @ 35%.

Under the original debt issue, the EPS is 10.48p, under the equity recon. the EPS is 10.29p.

There has been an actual increase in the number of ordinary shares of 10,000,000, issued 18 August 1989.

For the reconstruction scenario, shares in issue during the year:

01/05/89 - 17/08/89 = 1,270,789,000

18/08/89 - 30/04/90 = 1,280,789,000

The weighted average number of shares is calculated as:

$1,270,789,000 \times 3.5/12 + 1,280,789,000 \times 8.5/12 = 1,277,872,333$

Note (1) Asda capitalised £38.1m interest charges in y/e Apr 1990.

Calculation of ex-rights price

$$\begin{aligned}
 P_o &= 0.8P_c \\
 &= 0.8 \times £1.47 \\
 &= £1.18
 \end{aligned}$$

$$N = 1,163,000,000 \text{ shares} *$$

$$\begin{aligned}
 M &= EB/P_o \\
 &= 127191250/£1.18 \\
 &= 107,789,195
 \end{aligned}$$

The terms of the rights issue are:

$$\begin{aligned}
 M : N &= m : n \\
 107,789,195 : 1,163,000,000 \\
 1 : 10.79
 \end{aligned}$$

$$\begin{aligned}
 P_x &= (mP_o + nP_c) / m+n \\
 &= 1 \times £1.18 + 10.79 \times £1.47 / 1 + 10.79 \\
 &= 17.04/11.79 \\
 &= £1.45
 \end{aligned}$$

Therefore theoretical ex-rights price is £1.45.

* The rights issue was very close to the year end and therefore based on the total number of shares issued by the year end.

Calculation of Weighted Average No. Shares

$$\begin{aligned}
 \text{Total proceeds from rights issue} &= 107,789,195 \times £1.18 \\
 &= £127,191,250
 \end{aligned}$$

$$\text{Market price per share} = £1.47$$

$$\begin{aligned}
 \text{Fresh issue at market value} &= £127,191,250/£1.47 \\
 &= 86,524,660 \text{ shares}
 \end{aligned}$$

$$\text{Total no. shares issued} = 107,789,195$$

$$\text{Less fresh issue at market value} = (86,524,660)$$

$$\text{Bonus issue} = 21,264,535$$

Bonus issue based on: (i) 1,163,000,000 shares in issue before rights issue
(ii) 86,524,660 shares (fresh issue)

$$\text{Total} = 1,249,524,660 \text{ shares}$$

$$\text{Bonus ratio} = 21,264,535 : 1,249,524,660$$

$$= 1 : 58.76 (1 : 59)$$

$$\text{Factor} = 59/60$$

Shares	Actual		Weighted Av.
At start of year	1,155,000,000	x60/59 x9/12	880,932,203
Issue in Feb 1989	8,000,000		

	1,163,000,000	x60/59 x2/12	197,118,644
Fresh issue	86,524,660		-
	-----		--
	1,249,524,660	x 60/59 x1/12	105,891,920
Bonus issue	21,264,535		-
	-----		-----
	1,270,789,195		1,183,942,767
	=====		=====

APPENDIX 6-1-26

Example: Base ye Sep 1989 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		515000		515000
INTEREST (ex new fin)	67192		67192	
NEW FINANCE INTEREST	10808		0	
	-----		-----	
TOTAL INTEREST		78000		67192
		-----		-----
Net profit after int		437000		447808
Pub.pre-tax profit		529000		539808
basic taxation	147000		147000	
tax change	0		3783	
	-----		-----	
TOTAL TAX		147000		150783
		-----		-----
Earnings after tax		382000		389025
Prof dividend	300		300	
Minority interest	11000		11000	
EARNINGS for ORD		370700		377725
	=====		=====	
EPS (pence/ord share)		108.08		104.37
	=====		=====	
Total ord. shares at start of year ('000)		341673		341673
Average no. ord. shares (at start of year, '000)		338400		338400
No. of new ord. shares (total, '000)		3140		37202 *
No. of new ord. shares (used in EPS calc., '000)		4600		23517
Total ord. shares at y/e ('000)		344813		378875
Average no. ord. shares (used in EPS calc., '000)		343000		361917
Amount of new debt £ (nominal)		250000000		N/A
Coupon rate		10.375		N/A
Tax rate		35.00		35.00

190489 £250000000 10.375% 2016 issued at 100.5511
Interest Mar 30 and Sep 30
Interest has been taken into account for 5 months in the year of issue.

Share price 190489 = £9.22
If 20% discount, then would issue £251375000/£7.38 (.8 x £9.22)
= 34061653 new ordinary shares

Under the original debt issue the EPS is 108.08p, under the equity recon.
this falls to 104.37p.

There has been an increase in the actual number of ordinary shares of
3,140,000, issued 28 April 1989.

* The new of new ordinary shares comprises 3,140,000 plus 34,061,653
relating to the hypothetical rights issue.

Note (1) In the y/e Sep 1989, interest of £1m was capitalised.

Example:

Base ye Sep 1990 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		612000		612000
INTEREST (ex new fin)	156062		156062	
NEW FINANCE INTEREST	25938		0	
	-----		-----	
TOTAL INTEREST		182000		156062
		-----		-----
Net profit after int		430000		455938
Pub.pre-tax profit		535000		560938
basic taxation	144000		144000	
tax change	0		9078	
	-----		-----	
TOTAL TAX		144000		153078
		-----		-----
Earnings after tax		391000		407860
Pref dividend	300		300	
Minority interest	6000		6000	
EARNINGS for ORD		384700		401560
		-----		-----
EPS (pence/ord share)		109.60		104.25
		-----		-----
• Total ord. shares at start of year ('000)	344813		378875	
Average no. ord. shares (at start of year, '000)		343000		361917
No. of new ord. shares (total, '000)	9447		9447	
No. of new ord. shares (used in EPS calc., '000)		8000		23256
Total ord. shares at y/e ('000)	354260		388322	
Average no. ord. shares (used in EPS calc., '000)		351000		385173
Amount of new debt £ (nominal)		250000000		N/A
Coupon rate		10.375		N/A
Tax rate		35.00		35.00

190489 £250000000 10.375% 2016 issued at 100.5511
Share price 190489 = £9.22
If 20% discount, then would issue £251375000/(.8 x £9.22)
= 34061653 new ordinary shares

NB. In this case a full year's interest has been charged.

Under the original debt issue the EPS is 109.60p, under the equity recon.
it falls to 104.25p.

Again there has been an actual increase in the number of ordinary shares
and so this has also been included in the equity recon.

The 9,447,000 shares were issued on 4 February 1990.

For the reconstruction scenario, shares in issue during the year:

01/10/89 - 03/02/90 = 378,875,000
04/02/90 - 30/09/90 = 388,322,000

The weighted average number of shares is calculated as:

$378,875,000 \times 4/12 + 388,322,000 \times 8/12 = 385,173,000$

Note. In the y/e Sep 1990, interest of £3m was capitalised.

BASS Y/E SEP 1989

Calc. of ex-rights price

.....

$$P_o = 0.8P_c$$
$$= 0.8 \times \text{£}9.22$$
$$= \text{£}7.38$$

$$M = 344,813,000 \text{ shares} *$$

$$M = \text{£}B/P_o$$
$$= 251,373,000/\text{£}7.38$$
$$= 34,061,653 \text{ shares}$$

The terms of the rights issue are:

$M : M = m : n$

$34,061,653 : 344,813,000$

$1 : 10.12$

$$P_x = \frac{mP_o + nP_c}{m+n}$$
$$= \frac{1 \times \text{£}7.38 + 10.12 \times \text{£}9.22}{1 + 10.12}$$
$$= 100.69/11.12$$
$$= \text{£}9.05$$

Therefore theoretical ex-rights price is £9.05.

* Based on year end no. shares

Calculation of Weighted Average No. Shares

.....

Total proceeds from rights issue	$34,061,653 \times \text{£}7.38$
	$= \text{£}251,374,999$
Market price per share	$= \text{£}9.22$
Fresh issue at market value	$= \text{£}251,374,999/\text{£}9.22$
	$= 27,264,100 \text{ shares}$
Total no. shares issued	$= 34,061,653$
Less fresh issue at market value	$= (27,264,100)$
Bonus issue	$= 6,797,553$

Bonus issue based on: (i) 344,813,000 shares in issue before rights issue
(ii) 27,264,100 shares (fresh issue)

$$\text{Total} = 372,077,100 \text{ shares}$$
$$\text{Bonus ratio} = 6,797,553 : 372,077,100$$
$$= 1 : 54.74 (1 : 55)$$
$$\text{Factor} = 55/56$$

Shares	Actual			Weighted Av.
At start of year	341,673,000	x56/55	x6.5/12	188,437,836
Fresh issue	27,264,100			--

	368,937,100	x 56/55	x5.5/12	172,170,647
Bonus issue	6,797,553			-
	-----			-----
	375,734,653			360,608,483
Issue in Apr 1989	3,140,000		x5/12	1,308,333
	-----			-----
	378,874,653			361,916,816
	-----			-----

APPENDIX 6-1-27

Example: Blue Circle ye Dec 1988 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTNETICAL ISSUE	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		161600		161600
INTEREST (ex new fin)	39256		39256	
NEW FINANCE INTEREST	1344		0	
	-----		-----	
TOTAL INTEREST		40600		39256
		-----		-----
Net profit after int		121000		122344
Pub.pre-tax profit		203100		204444
basic taxation	47200		47200	
tax change	0		470	
	-----		-----	
TOTAL TAX		47200		47670
		-----		-----
Earnings after tax		155900		156774
Prof dividend	5500		5500	
Minority interest	2600		2600	
EARNINGS for ORD		147800		148674
	=====		=====	
EPS (pence/ord share)		56.96		55.16
	=====		=====	
Total ord. shares at start of year ('000)	258861		258861	
Average no. ord. shares (at start of year, '000)		258100		258100
No. of new ord. shares (total, '000)	1115		42241	
No. of new ord. shares (used in EPS calc., '000)		1400		11441
Total ord. shares at y/e ('000)	259976		301102	
Average no. ord. shares (used in EPS calc., '000)		259500		269541
Amount of new debts £ (nominal)		150000000		N/A
Coupon rate		10.750		N/A
Tax rate		35.00		35.00

291188 £150000000 10.75% 2013 issued at 99.25

Share price 291188 = £4.52

If 20% discount, then would issue £148875000/£3.62 (.8 x £4.52)

= 41125691 new ordinary shares

Under the original debt issue, the EPS is 56.96p, on the equity recon., this falls to 55.16p.

NB In this case the interest is payable annually on 29/11 each year so by the year end, one month's interest could be accrued for - this has been done for the reconstruction in 1988, with a whole year's interest being charged in 1989.

There has been an actual increase in the number of shares in issue of 1,115,000. These were issued on 4 June 1988.

Note. In the y/e Dec 1988, there was negative irrecoverable ACT (i.e. a write-back) of £18.5m.

Example: Blue Circle ye Dec 1989 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTNETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		194400		194400
INTEREST (ex new fin)	39675		39675	
NEW FINANCE INTEREST	16125		0	
	-----		-----	
TOTAL INTEREST		55800		39675
		-----		-----
Net profit after int		138600		154725
Pub.pre-tax profit		231800		247925
basic taxation	66000		66000	
tax change	0		5644	
	-----		-----	
TOTAL TAX		66000		71644
		-----		-----
Earnings after tax		165800		176281
Prof dividend	8400		8400	
Minority interest	2800		2800	
EARNINGS for ORD		154600		165081
	=====		=====	
EPS (pence/ord share)		29.52		29.23
		=====		=====
Total ord. shares at start of year ('000)	259976		301102	
Average no. ord. shares (at start of year, '000)		259500		269541
No. of new ord. shares (total, '000)	266994		266994	
No. of new ord. shares (used in EPS calc., '000)		264200		295215
Total ord. shares at y/e ('000)	526970		568096	
Average no. ord. shares (used in EPS calc., '000)		523700		564756
Amount of new debt £ (nominal)		150000000		N/A
Coupon rate		10.750		N/A
Tax rate		35.00		35.00

291188 £150000000 10.75% 2013 issued at 99.25
Share price 291188 = £4.52
If 20% discount, then would issue £148875000/((.8 x £4.52)
= 41125691 new ordinary shares

A whole year's interest has been charged.

On the original debt issue, the EPS is 29.52p. On the equity recon., this would decrease to 29.23p.

There has been an actual increase in the number of ordinary shares of 266,994,000 and this has also been included in the equity recon.

The 266,994,000 shares were issued 5 January 1989.

For the reconstruction scenario, shares in issue during the year:

01/01/89 - 04/01/89 = 301,102,000
05/01/89 - 31/12/89 = 568,096,000

The weighted average number of shares is calculated as:

301,102,000 x 0.15/12 + 568,096,000 x 11.85/12 = 564,758,575

Note. There was no irrecoverable ACT in y/e Dec 1989.

BLUE CIRCLE Y/E DEC 1988

Calcn. of ex-rights price

$$\begin{aligned} P_o &= 0.8P_c \\ &= 0.8 \times £4.52 \\ &= £3.62 \end{aligned}$$

$$M = 259,976,000 \text{ shares}$$

$$\begin{aligned} M &= £B/P_o \\ &= 148,875,000/£3.62 \\ &= 41,125,691 \end{aligned}$$

The terms of the rights issue are:

$$\begin{aligned} M : M &= m : n \\ 41,125,691 : 259,976,000 \\ &= 1 : 6.32 \end{aligned}$$

$$\begin{aligned} P_x &= \frac{(P_o + nP_c)}{1+n} \\ &= \frac{1 \times £3.62 + 6.32 \times £4.52}{1 + 6.32} \\ &= 32.19/7.32 \\ &= £4.40 \end{aligned}$$

Therefore theoretical ex-rights price is £4.40.

* The rights issue was very close to the year end and therefore based on the total number of shares issued by the year end.

Calculation of Weighted Average No. Shares

Total proceeds from rights issue	41,125,691 x £3.62
	= £148,875,000
Market price per share	= £4.52
Fresh issue at market value	= £148,875,000/£4.52
	= 32,936,947 shares
Total no. shares issued	= 41,125,691
Less fresh issue at market value	=(32,936,947)
Bonus issue	= 8,188,744

Bonus issue based on: (i) 259,976,000 shares in issue before rights issue
(ii) 32,936,947 shares (fresh issue)

$$\begin{aligned} \text{Total} &= 292,912,947 \text{ shares} \\ \text{Bonus ratio} &= 8,188,744 : 292,912,947 \\ &= 1 : 35.77 (1 : 36) \\ \text{Factor} &= 36/37 \end{aligned}$$

Shares	Actual		Weighted Av.
At start of year	258,861,000	x37/36 x5/12	110,854,826
Issue in June 1988	1,115,000		

	259,976,000	x37/36 x6/12	133,598,778
Fresh issue	32,936,947		

	292,912,947	x 37/36 x1/12	25,087,451
Bonus issue	8,188,744		

	301,101,691		269,541,055
	-----		-----

APPENDIX 6-1-28

Example: British Land ye Mar 1987 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		47100		47100
INTEREST (ex new fin)	7		7	
NEW FINANCE INTEREST	1319		0	
	-----		-----	
TOTAL INTEREST		1319		0
		-----		-----
Net profit after int		45781		47100
Pub.pre-tax profit		30100		31419
basic taxation	5500		5500	
tax change	0		462	
	-----		-----	
TOTAL TAX		5500		5962
		-----		-----
Earnings after tax		24600		25457
Prof dividend	0		0	
Minority interest	500		500	
EARNINGS for ORD		24100		24957
		=====		=====
EPS (pence/ord share)		15.70		15.41
		=====		=====
Total ord. shares at start of year ('000)	139956		139956	
Average no. ord. shares (at start of year,'000)		139600		139600
No. of new ord. shares (total,'000)	63244		72089	
No. of new ord. shares (used in EPS calc.,'000)		13900		22381
Total ord. shares at y/e ('000)	203200		212045	
Average no. ord. shares (used in EPS calc.,'000)		153500		161981
Amount of new debt £ (nominal)		12560000		N/A
Coupon rate		10.500		N/A
Tax rate		35.00		35.00

010486 £12560000 10.5% 2019/24 issued at 100.00
Interest due Mar 30 and Sep 30.

Share price 010486 = £1.78
If 20% discount, then would issue £12560000/£1.42 (.8 x £1.78)
= 8845070 new ordinary shares

The debt has been in issue for the whole of the y/e Mar 1987, therefore
a whole year's interest is included.

On the original debt issue the EPS is 15.70p, on the equity recon.,
it decreases to 15.41p.

Notes. (1) Datastream does not provide a figure for total interest
charges for financial companies, so the interest relating
to the debt has been calculated separately, and then
excluded as appropriate in the equity recon.

Example: British Land ye Mar 1988 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE -----		HYPOTHETICAL ISSUE -----	
	DEBT £000	£000	EQUITY ALT. £000	£000
Operating profit		66800		66800
INTEREST (ex new fin)	7		7	
NEW FINANCE INTEREST	1319		0	
	-----		-----	
TOTAL INTEREST		1319		0
		-----		-----
Net profit after int		65481		66800
Pub.pre-tax profit		56400		57719
basic taxation	18300		18300	
tax change	0		462	
	-----		-----	
TOTAL TAX		18300		18762
		-----		-----
Earnings after tax		38100		38957
Prof dividend	0		0	
Minority interest	400		400	
EARNINGS for ORD		37700		38557
	=====		=====	
EPS (pence/ord share)		17.83		17.50
	=====		=====	
Total ord. shares at start of year ('000)	203200		212045	
Average no. ord. shares (at start of year, '000)		153500		161981
No. of new ord. shares (total, '000)	21200		21200	
No. of new ord. shares (used in EPS calc., '000)		58000		58367
Total ord. shares at y/e ('000)	224400		233245	
Average no. ord. shares (used in EPS calc., '000)		211500		220348
Amount of new debt £ (nominal)		12560000		N/A
Coupon rate		10.500		N/A
Tax rate		35.00		35.00

010486 £12560000 10.5% 2019/24 issued at 100.00
Interest due Mar 30 and Sep 30.

Share price 010486 = £1.78
If 20% discount, then would issue £12560000/£1.42 (.8 x £1.78)
= 8845070 new ordinary shares

Under the original debt issue the EPS is 17.83p, on the equity recon.,
this decreases to 17.50p.

There has been an actual increase in the ordinary shares of 21,200,000,
issued 9 November 1987. This increase has been included in the reconstruction
also.

For the reconstruction scenario, shares in issue during the year:

01/04/87 - 08/11/87 = 212,045,000
09/11/87 - 31/03/88 = 233,245,000

The weighted average number of shares is calculated as:

$212,045,000 \times 7.3/12 + 233,245,000 \times 4.7/12 = 220,348,333$

BRITISH LAND Y/E MAR 1987
Calcn. of ex-rights price
.....

$P_o = 0.8P_c$
 $= 0.8 \times \text{£}1.78$
 $= \text{£}1.42$
 $M = 139,956,000 \text{ shares} *$
 $M = \text{£}B/P_o$
 $= 12,560,000/\text{£}1.42$
 $= 8,845,070$

The terms of the rights issue are:
 $M : N = m : n$
 $8,845,070 : 139,956,000$
 $1 : 15.82$

$P_x = \frac{mP_o + nP_c}{m+n}$
 $= \frac{1 \times \text{£}1.42 + 15.82 \times \text{£}1.78}{1 + 15.82}$
 $= 29.58/16.82$
 $= \text{£}1.76$

Therefore theoretical ex-rights price is £1.76.

* The rights issue was very close to the start of the year and therefore based on the total number of shares issued at the start of the year.

Calculation of Weighted Average No. Shares
.....

Total proceeds from rights issue	$8,845,070 \times \text{£}1.42$ $= \text{£}12,560,000$
Market price per share	$= \text{£}1.78$
Fresh issue at market value	$= \text{£}12,560,000/\text{£}1.78$ $= 7,056,180 \text{ shares}$
Total no. shares issued	$= 8,845,070$
Less fresh issue at market value	$= (7,056,180)$
Bonus issue	$= 1,788,890$

Bonus issue based on: (i) 139,956,000 shares in issue before rights issue
(ii) 7,056,180 shares (fresh issue)

$\text{Total} = 147,012,180 \text{ shares}$
 $\text{Bonus ratio} = 1,788,890 : 147,012,180$
 $= 1 : 82.18 (1 : 82)$
 $\text{Factor} = 82/83$

Shares	Actual		Weighted Av.
At start of year	139,956,000	$\times 83/82 \times 0/12$	-
Fresh issue	7,056,180		-
	-----		-----
	147,012,180	$\times 83/82 \times 12/12$	148,805,012
Bonus issue	1,788,890		-
	-----		-----
	148,801,070		148,805,012
Issue in Jan 1987	63,244,000	$\times 2.5/12$	13,175,833
	-----		-----
	212,045,070		161,980,845
	-----		-----

APPENDIX 6-1-29

Example: British Land ye Mar 1992 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		109800		109800
INTEREST (ex new fin)	?		?	
NEW FINANCE INTEREST	17188		0	
	-----		-----	
TOTAL INTEREST		17188		0
		-----		-----
Net profit after int		92613		109800
Pub.pre-tax profit		33300		50488
basic taxation	5900		5900	
tax change	0		5672	
	-----		-----	
TOTAL TAX		5900		11572
		-----		-----
Earnings after tax		27400		38915
Prof dividend	0		0	
Minority interest	1100		1100	
EARNINGS for ORD		26300		37815
		=====		=====
EPS (pence/ord share)		11.46		12.99
		=====		=====
Total ord. shares at start of year ('000)		225535		225535
Average no. ord. shares start of year, '000)		225400		225400
No. of new ord. share (total, '000)		8535		74773
No. of new ord. shares (used in EPS calc., '000)		4000		65603
Total ord. shares at y/e ('000)		234070		300308
Average no. ord. shares (used in EPS calc., '000)		229400		291003
Amount of new debt £ (nominal)		150000000		N/A
Coupon rate		12.50		N/A
Tax rate		33.00		35.00

300491 £150000000 12.5% 2016 issued at 100.682

Share price 300491 = £2.85

If 20% discount, then would issue £151023000/£2.28 (.8 x £2.85)
= 66238158 new ordinary shares

Under the original debt issue the EPS is 11.46p, on the equity recon.
it would increase to 15.45p.

Notes. (1) Datastream does not provide a figure for total interest charges for financial companies, so the interest relating to the debt has been calculated separately, and then excluded as appropriate in the equity recon.

There was an actual increase in the number of ordinary shares of 8,535,000, issued 18 October 1991. This has also been included in the reconstruction.

BRITISH LAND Y/E MARCH 1992

Calc. of ex-rights price

.....

$P_o = 0.8P_c$
 $= 0.8 \times \pounds 2.85$
 $= \pounds 2.28$

$M = 225,535,000 \text{ shares} *$

$M = \pounds B / P_o$
 $= 151,023,000 / \pounds 2.28$
 $= 66,238,158$

The terms of the rights issue are:
 $M : M = m : n$
 $66,238,158 : 225,535,000$
 $1 : 3.4$

$P_x = \frac{mP_o + nP_c}{m+n}$
 $= \frac{1 \times \pounds 2.28 + 3.4 \times \pounds 2.85}{1 + 3.4}$
 $= 11.97 / 4.4$
 $= \pounds 2.72$

Therefore theoretical ex-rights price is $\pounds 2.72$.

* The rights issue would be very close to the start of the year and so is based on the total number of shares in issue at the start of the year.

Calculation of Weighted Average No. Shares

.....

Total proceeds from rights issue	$66,238,158 \times \pounds 2.28$ $= \pounds 151,023,000$
Market price per share	$= \pounds 2.85$
Fresh issue at market value	$= \pounds 151,023,000 / \pounds 2.85$ $= 52,990,526 \text{ shares}$
Total no. shares issued	$= 66,238,158$
Less fresh issue at market value	$= (52,990,526)$
Bonus issue	$= 13,247,632$

Bonus issue based on: (i) 225,535,000 shares in issue before rights issue
(ii) 52,990,526 shares (fresh issue)

$\text{Total} = 278,525,526 \text{ shares}$
 $\text{Bonus ratio} = 13,247,632 : 278,525,526$
 $= 1 : 21.02 (1 : 21)$
 $\text{Factor} = 21/22$

Shares	Actual		Weighted Av.
At start of year	225,535,000	$\times 22/21 \times 1/12$	19,689,563
Fresh issue	52,990,526		--

	278,525,526	$\times 22/21 \times 11/12$	267,472,926
Bonus issue	13,247,632		-
	-----		-----
	291,773,158		287,162,489
Issue in Oct 1991	8,535,000	$\times 5.4/12$	3,840,750
	-----		-----
	300,308,158		291,003,239
	=====		=====

APPENDIX 6-1-30

Example: British Steel ye Mar 1992 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		64000		64000
INTEREST (ex new fin)	32062		32062	
NEW FINANCE INTEREST	12938		0	
	-----		-----	
TOTAL INTEREST		45000		32062
		-----		-----
Net profit after int		19001		0
Pub.pre-tax profit		-55000		-74001
basic taxation	-20000		-20000	
tax change	0		4399	
	-----		-----	
TOTAL TAX		-20000		-15601
		-----		-----
Earnings after tax		-35000		-58399
Prof dividend	0		0	
Minority interest	-1000		-1000	
EARNINGS for ORD		-34000		-57399
	=====		=====	
EPS (pence/ord share)		-1.70		-2.71
	=====		=====	
Total ord. shares				
at start of year ('000)	2000000		2000000	
Average no. ord. shares				
(at start of year, '000)		2000000		2000000
No. of new ord. shares				
(total, '000)	0		149364	
No. of new ord. shares				
(used in EPS calc., '000)		0		118821
Total ord. shares at y/e				
('000)	2000000		2149364	
Average no. ord. shares				
(used in EPS calc., '000)		2000000		2118821
Amount of new debts £		150000000		N/A
(nominal)				
Coupon rate		11.500		N/A
Tax rate		34.00		34.00

100791 £150000000 11.50% 2016 issued at 100.572.

Share price 100791 = £1.26

If 20% discount, then would issue £150858000/£1.01(.8 x £1.26)
= 149364356 new ordinary shares

Under the original debt issue the EPS is 'negative' and would have become even more 'negative' if equity had been issued instead of debt.

The interest that has been attributed to the first year in issue of the new debt is 9 months i.e. £17.25m x .75 = £12.9375m.

Note (1) There was irrecoverable ACT of £35m for y/e Mar 1992.

BRITISH STEEL Y/E MAR 1992

Calcn. of ex-rights price

$$\begin{aligned} P_o &= 0.8P_c \\ &= 0.8 \times \text{£}1.26 \\ &= \text{£}1.01 \end{aligned}$$

$$M = 2,000,000,000 \text{ shares}$$

$$\begin{aligned} M &= EB/P_o \\ &= 150,858,000/\text{£}1.01 \\ &= 149,364,356 \end{aligned}$$

The terms of the rights issue are:

$$\begin{aligned} M : N &= m : n \\ 149,364,356 : 2,000,000,000 \\ &= 1 : 13.39 \end{aligned}$$

$$\begin{aligned} P_x &= \frac{(mP_o + nP_c)}{m+n} \\ &= \frac{1 \times \text{£}1.01 + 13.39 \times \text{£}1.26}{1 + 13.39} \\ &= 17.88/14.39 \\ &= \text{£}1.24 \end{aligned}$$

Therefore theoretical ex-rights price is £1.24.

Calculation of Weighted Average No. Shares

$$\begin{aligned} \text{Total proceeds from rights issue} &= 149,364,356 \times \text{£}1.01 \\ &= \text{£}150,858,000 \end{aligned}$$

$$\text{Market price per share} = \text{£}1.26$$

$$\begin{aligned} \text{Fresh issue at market value} &= \text{£}150,858,000/\text{£}1.26 \\ &= 119,728,571 \text{ shares} \end{aligned}$$

$$\text{Total no. shares issued} = 149,364,356$$

$$\text{Less fresh issue at market value} = (119,728,571)$$

$$\text{Bonus issue} = 29,635,785$$

Bonus issue based on: (i) 2,000,000,000 shares in issue before rights issue
(ii) 119,728,571 shares (fresh issue)

$$\begin{aligned} \text{Total} &= 2,119,728,571 \text{ shares} \\ \text{Bonus ratio} &= 29,635,785 : 2,119,728,571 \\ &= 1 : 71.53 (1 : 72) \\ \text{Factor} &= 72/73 \end{aligned}$$

Shares	Actual			Weighted Av.
	2,000,000,000	x73/72	x3/12	506,944,444
Fresh issue	119,728,571			
	-----			--
	2,119,728,571	x 73/72	x9/12	1,611,876,934
Bonus issue	29,635,785			-
	-----			-----
	2,149,364,356			2,118,821,378
	=====			=====

APPENDIX 6-1-31

Example: City Site Estates ye Sep 1987 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		1527		1527
INTEREST (ex new fin)	7		7	
NEW FINANCE INTEREST	1094		0	
	-----		-----	
TOTAL INTEREST		1094		0
		-----		-----
Net profit after int		433		1527
Pub.pre-tax profit		790		1884
basic taxation	111		111	
tax change	0		383	
	-----		-----	
TOTAL TAX		111		494
		-----		-----
Earnings after tax		679		1390
Prof dividend	43		43	
Minority interest	0		0	
EARNINGS for ORD		636		1347
	=====		=====	
EPS (pence/ord share)		6.00		6.55
		=====		=====
Total ord. shares at start of year ('000)	8948		8948	
Average no. ord. shares (at start of year, '000)		7672		7672
No. of new ord. shares (total, '000)	6200		26238	
No. of new ord. shares (used in EPS calc., '000)		2936		12884
Total ord. shares at y/e ('000)	15148		35186 *	
Average no. ord. shares (used in EPS calc., '000)		10608		20556
Amount of new debt £ (nominal)		25000000		N/A
Coupon rate		10.500		N/A
Tax rate		35.00		35.00

140487 £25000000 10.5% 2017 issued at 99.17
 £10m issued in Apr '87 at £99.17, and £15m issued in Feb '89
 at £99.538. Total raised = £9,917,000 plus £14,930,700 = £24,847,700.
 Interest due 31 Mar and 30 Sep.

Share price 140487 = £1.55
 If 20% discount, then would issue £24847700/£1.24 (.8 x £1.55)
 = 20,038,468 new ordinary shares

Interest for 5 months has been taken into account.

Under the original debt issue the EPS is 6.00p, on the equity recon. this increases to 6.55p.

There has been an actual increase in the number of ordinary shares of 6,200,000, issued 24 June 1987. These have also been included in the equity reconstruction.

Note. City Sites is in the financial sector and information on total interest charges is not available. The interest for the debt has been calculated and then excluded in the equity recon., with extra tax payable due to loss of interest relief being added.

Example: City Estates ye Sep 1988 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		2967		2967
INTEREST (ex new fin)	7		7	
NEW FINANCE INTEREST	2625		0	
	-----		-----	
TOTAL INTEREST		2625		0
		-----		-----
Net profit after int		342		2967
Pub.pre-tax profit		3678		6303
basic taxation	1314		1314	
tax change	0		919	
	-----		-----	
TOTAL TAX		1314		2233
		-----		-----
Earnings after tax		2364		4070
Prof dividend	35		35	
Minority interest	0		0	
EARNINGS for ORD		2329		4035
	=====		=====	
EPS (pence/ord share)		15.33		11.45
	=====		=====	
Total ord. shares at start of year ('000)	15148		35186	
Average no. ord. shares (at start of year, '000)		10608		20556
No. of new ord. shares (total, '000)	116		116	
No. of new ord. shares (used in EPS calc., '000)		4588		14678
Total ord. shares at y/e ('000)	15264		35302	
Average no. ord. shares (used in EPS calc., '000)		15196		35234
Amount of new debts £ (nominal)		25000000		N/A
Coupon rate		10.500		N/A
Tax rate		35.00		35.00

140487 £25000000 10.5% 2017 issued at 99.17
£10m issued in Apr '87 at £99.17, and £15m issued in Feb '89
at £99.538. Total raised = £9,917,000 plus £14,930,700 = £24,847,700.
Interest due 31 Mar and 30 Sep.

Share price 140487 = £1.55
If 20% discount, then would issue £24847700/£1.24 (.8 x £1.55)
= 20,038,468 new ordinary shares

A full year's interest has been charged in 1988.

Under the original debt issue the EPS is 15.33p, on the equity recon.
this falls to 11.45p.

Again there has been an actual increase in the number of ordinary shares
of 116,000, issued 1 May 1988.

For the reconstruction scenario, shares in issue during the year:

01/10/87 - 30/04/88 = 35,186,000
01/05/88 - 30/09/88 = 35,302,000

The weighted average number of shares is calculated as:

$35,186,000 \times 7/12 + 35,302,000 \times 5/12 = 35,234,333$

Calcn. of ex-rights price

Calculation of Weighted Average No. Shares

Shares	Actual			Weighted Av.
At start of year	8,948,000	x29/25	x6.5/12	5,622,327
Fresh issue	16,030,774			
	-----			--
	24,978,774	x29/25	x5.5/12	13,280,382
Bonus issue	4,007,694			-
	-----			-----
	28,986,468			18,902,709
Issue in Jun 1987	6,200,000		x3.2/12	1,653,333
	-----			-----
	35,186,468			20,556,042
	-----			-----

APPENDIX 6-1-32

Example: Dares Estates ye Dec 1987 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		7382		7382
INTEREST (ex new fin)	7		7	
NEW FINANCE INTEREST	2081		0	
	-----		-----	
TOTAL INTEREST		2081		0
		-----		-----
Net profit after int		5301		7382
Pub.pre-tax profit		5096		7177
basic taxation	1122		1122	
tax change	0		728	
	-----		-----	
TOTAL TAX		1122		1850
		-----		-----
Earnings after tax		3974		5326
Prof dividend	0		0	
Minority interest	103		103	
EARNINGS for ORD		3871		5223
		=====		=====
EPS (pence/ord share)		2.12		2.22
		=====		=====
Total ord. shares at start of year ('000)	132560		132560	
Average no. ord. shares (at start of year, '000)		90160		90160
No. of new ord. shares (total, '000)	73640		158564	
No. of new ord. shares (used in EPS calc., '000)		92500		144955
Total ord. shares at y/e ('000)	206200		291124 *	
Average no. of ord. shares (used in EPS calc., '000)		182660		235115
Amount of new debts £		35000000		N/A
Coupon rate		10.250		N/A
Tax rate		35.00		35.00

080687 £35000000 10.25% 2012 Issued at 99.239

£15m was placed in June '87 at 99.239% and £20m was placed in Mar '89 at 95.418%, raising a total of £33,969,450.

Interest due 1 Dec and 1 June. First payment due 01/12/87.

Share price 080687 = £0.50

If 20% discount, then would issue £33,969,450/£0.40 i.e. (.8 x £0.50)

= 84923625 new ordinary shares

Seven months interest has been taken into account.

Under the original debt issue the EPS is 2.12p, on the equity recon. this increases to 2.22p.

There has been an actual increase in the number of shares in issue of 73,640,000, issued 25 April 1987. These have also been included in the equity reconstruction.

Note. Dares Estates is in the property sector and information on total interest charges is not available. The interest for the debt has been calculated for the debt issue and then excluded in the equity recon., with extra tax payable (due to loss of interest relief) being added back.

Example: Dares Estates ye Dec 1988 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		10907		10907
INTEREST (ex new fin)	?		?	
NEW FINANCE INTEREST	3588		0	
	-----		-----	
TOTAL INTEREST		3588		0
		-----		-----
Net profit after int		7319		10907
Pub.pre-tax profit		12566		16154
basic taxation	3830		3830	
tax change	0		1256	
	-----		-----	
TOTAL TAX		3830		5086
		-----		-----
Earnings after tax		8736		11068
Pref dividend	0		0	
Minority interest	185		185	
EARNINGS for ORD		8551		10883
		=====		=====
EPS (pence/ord share)		4.15		3.74
		=====		=====
Total ord. shares at start of year ('000)	206200		291124	
Average no. ord. shares (at start of year, '000)		182660		235115
No. of new ord. shares (total, '000)	-1000		-1000	
No. of new ord. shares (used in EPS calc., '000)		23500		55967
Total ord. shares at y/e ('000)	205200		290124	
Average no. of ord. shares (used in EPS calc., '000)		206160		291082
Amount of new debt £		35000000		N/A
Coupon rate		10.250		N/A
Tax rate		35.00		35.00

080687 £35000000 10.25% 2012 issued at 99.239

£15m was placed in June '87 at 99.239% and £20m was placed in Mar '89 at 95.418%, raising a total of £33,969,450.
Interest due 1 Dec and 1 June. First payment due 01/12/87.

Share price 080687 = £0.50
If 20% discount, then would issue £33,969,450/£0.40 i.e. (.8 x £0.50)
= 84923625 new ordinary shares

A full year's interest has been charged in 1988 (and therefore stripped out of the equity recon.).

Under the original debt issue the EPS is 4.15p, on the equity recon. the EPS decreases to 3.74p.

There was an actual decrease in the number of shares of 1,000,000 on 16 December 1988. This has also been included in the equity recon.

For the reconstruction scenario, shares in issue during the year:

01/01/88 - 15/12/88 = 291,123,625
16/12/88 - 31/12/88 = 290,123,625

The weighted average number of shares is calculated as:

$291,123,625 \times 11.5/12 + 290,123,625 \times 0.5/12 = 291,081,958$

DARES ESTATES YE DEC 1987
Calcn. of ex-rights price

$P_o = 0.8P_c$
 $= 0.8 \times \text{£}0.50$
 $= \text{£}0.40$

$M = 206,200,000 \text{ shares}$
 $M = \text{£}B/P_o$
 $= \text{£}33,969,450/\text{£}0.40$
 $= 84,923,625$

The terms of the rights issue are:
 $M : N = m : n$
 $84,923,625 : 206,200,000$
 $1 : 2.43 (2 : 5)$

$P_x = \frac{mP_o + nP_c}{m+n}$
 $= \frac{1 \times \text{£}0.40 + 2.43 \times \text{£}0.50}{1 + 2.43}$
 $= 1.62/3.43$
 $= \text{£}0.47$

Therefore theoretical ex-rights price is £0.47.

* Based on number of shares in issue at the year end.

Calculation of Weighted Average No. Shares

Total proceeds from rights issue	84,923,625 x £0.40
	= £33,969,450.
Market price per share	= £0.50
Fresh issue at market value	= £33,969,450/£0.50
	= 67,938,900 shares
Total no. shares issued	= 84,923,625
Less fresh issue at market value	= (67,938,900)
Bonus issue	= 16,984,725

Bonus issue based on: (i) 206,200,000 shares in issue before rights issue
(ii) 67,938,900 shares (fresh issue)

Total = 274,138,900 shares
Bonus ratio = 16,984,725 : 274,138,900
 $= 1 : 16.14 (1 : 16)$
Factor = 16/17

Shares	Actual		Weighted Av.
At start of year	132,560,000	x17/16 x4/12	46,948,333
Issue in Apr 1987	73,640,000		

	206,200,000	x17/16 x1/12	18,257,292
Fresh issue	67,938,900		

	274,138,900	x17/16 x7/12	169,909,001
			--
Bonus issue	16,984,725		-
	-----		-----
	291,123,625		235,114,626
	-----		-----

APPENDIX 6-1-33

Example: Trusthouse Forte ye Jan 90 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		253600		253600
INTEREST (ex new fin)	79746		79746	
NEW FINANCE INTEREST	9854		0	
	-----		-----	
TOTAL INTEREST		89600		79746
		-----		-----
Net profit after int		164000		173854
Pub.pre-tax profit		232800		242654
basic taxation	45600		45600	
tax change	0		3449	
	-----		-----	
TOTAL TAX		45600		49049
		-----		-----
Earnings after tax		187200		193605
Pref dividend	0		0	
Minority interest	7200		7200	
EARNINGS for ORD		180000		186405
		=====		=====
EPS (pence/ord share)		22.98		22.81
		=====		=====
Total ord. shares at start of year ('000)		782648		782648
Average no. ord. shares (at start of year, '000)		782520		782520
No. of new ord. shares (total, '000)		2076		46656
No. of new ord. shares (used in EPS calc., '000)		600		34790
Total ord. shares at y/e ('000)		784724		829304
Average no. ord. shares (used in EPS calc., '000)		783120		817310
Amount of new debts £ (nominal)		100000000		N/A
Coupon rate		10.750		N/A
Tax rate		35.00		35.00

220289 £100000000 10.75% 1996 issued at 100.75
Interest due 24 Jan.
Interest for 11 months has been taken into account.

Share price 220289 = £2.83
If 20% discount, then would issue £100750000/£2.26 (.8 x £2.83)
= 44579646 new ordinary shares

There was an actual increase of ordinary shares of 2,076,000 issued 18 October 1989. These have also been included in the reconstruction.

For the reconstruction shares in issue during the year:

01/11/88 - 21/02/89 = 782,648,000
22/02/89 - 17/10/89 = 827,227,646
18/10/89 - 31/01/90 = 829,303,646

For the reconstruction, the weighted average number of shares is calculated as:

$782,648,000 \times 3.5/15 + 827,227,646 \times 8/15 + 829,303,646 \times 3.5/15$
= 817,310,129

The EPS on the original debt issue is 22.98p, on the equity recon. this decreases to 22.81p.

Note. Forte capitalised interest of £11.2m in the y/e Jan 1990.

Example: Trusthouse Forte ye Jan 91 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		268000		268000
INTEREST (ex new fin)	89250		89250	
NEW FINANCE INTEREST	10750		0	
	-----		-----	
TOTAL INTEREST		100000		89250
		-----		-----
Net profit after int		168000		178750
Pub.pre-tax profit		190000		200750
basic taxation	31000		31000	
tax change	0		3655	
	-----		-----	
TOTAL TAX		31000		34655
		-----		-----
Earnings after tax		159000		166095
Pref dividend	0		0	
Minority interest	11000		11000	
EARNINGS for ORD		148000		155095
	-----		-----	
EPS (pence/ord share)		18.85		18.69
	-----		-----	
Total ord. shares at start of year ('000)	784724		829304	
Average no. ord. shares (at start of year, '000)		783120		817310
No. of new ord. shares (total, '000)	1244		1244	
No. of new ord. shares (used in EPS calc., '000)		2201		12595
Total ord. shares at y/e ('000)	785968		830548	
Average no. ord. shares (used in EPS calc., '000)		785321		829905
Amount of new debt £ (nominal)		100000000		N/A
Coupon rate		10.750		N/A
Tax rate		34.00		34.00

220289 £100000000 10.75% 1996 issued at 100.75
Share price 220289 = £2.83
If 20% discount, then would issue £100750000/(.8 x £2.83)
= 44579646 new ordinary shares

Interest for the whole year has been taken into account.

On the original debt issue the EPS is 18.85p, on the equity recon., this decreases to 18.69p.

There has been an actual increase in the number of ordinary shares of 1,244,000, issued 7 August 1990. This increase has also been included in the equity reconstruction.

For the reconstruction scenario, shares in issue during the year:

01/02/90 - 06/08/90 = 829,304,000
07/08/90 - 31/12/91 = 830,548,000

The weighted average number of shares is calculated as:

$829,304,000 \times 6.2/12 + 830,548,000 \times 5.8/12 = 829,905,267$

Note. Forte capitalised interest of £12m in the y/e Jan 1991.

TRUSTHOUSE FORTE Y/E JAN 1990

Calcn. of ex-rights price

$$P_o = 0.8P_c$$
$$= 0.8 \times \text{£}2.83$$
$$= \text{£}2.26$$

$$M = 784,724,000 \text{ shares}$$

$$M = \text{£}B/P_o$$
$$= 100,750,000/\text{£}2.26$$
$$= 44,579,646$$

The terms of the rights issue are:

$$M : M = m : n$$
$$44,579,646 : 784,724,000$$
$$1 : 17.6$$

$$P_x = \frac{(mP_o + nP_c)}{m+n}$$
$$= \frac{1 \times \text{£}2.26 + 17.6 \times \text{£}2.83}{1 + 17.6}$$
$$= \text{£}2.07/18.6$$
$$= \text{£}2.80$$

Therefore theoretical ex-rights price is £2.80

Calculation of Weighted Average No. Shares

Total proceeds from rights issue	$44,579,646 \times \text{£}2.26$ $= \text{£}100,750,000$
Market price per share	$= \text{£}2.83$
Fresh issue at market value	$= \text{£}100,750,000/\text{£}2.83$ $= 35,600,707 \text{ shares}$
Total no. shares issued	$= 44,579,646$
Less fresh issue at market value	$= (35,600,707)$
Bonus issue	$= 8,978,939$

Bonus issue based on: (i) 784,724,000 shares in issue before rights issue
(ii) 35,600,707 shares (fresh issue)

$$\text{Total} = 820,324,707 \text{ shares}$$
$$\text{Bonus ratio} = 8,978,939 : 820,324,707$$
$$= 1 : 91.36 (3 : 274)$$
$$\text{Factor} = 274/277$$

Shares	Actual		Weighted Av.
	784,724,000	$\times 277/274 \times 1/12$	66,109,656
Fresh issue	35,600,707		
	-----		--
	820,324,707	$\times 277/274 \times 11/12$	760,197,501
Bonus issue	8,978,939		
	-----		-----
	829,303,646		826,307,157
	-----		-----

APPENDIX 6-1-34

Example: Land Securities ye Mar 1987 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		149500		149500
INTEREST (ex new fin)	?		?	
NEW FINANCE INTEREST	16945		0	
	-----		-----	
TOTAL INTEREST		16945		0
		-----		-----
Net profit after int		132555		149500
Pub.pre-tax profit		120600		137545
basic taxation	31100		31100	
tax change	0		5931	
	-----		-----	
TOTAL TAX		31100		37031
		-----		-----
Earnings after tax		89500		100514
Pref dividend	0		0	
Minority interest	0		0	
EARNINGS for ORD		89500		100514
	=====		=====	
EPS (pence/ord share)		17.78		17.52
		=====		=====
Total ord. shares at start of year ('000)		503400		503400
Average no. ord. shares (at start of year, '000)		503400		503400
No. of new ord. shares (total, '000)		0		75438
No. of new ord. shares (used in EPS calc., '000)		0		70264
Total ord. shares at y/e ('000)		503400		578838
Average no. ord. shares (used in EPS calc., '000)		503400		573664
Amount of new debts £ (nominal)		200000000		N/A
Coupon rate		9.500		N/A
Tax rate		35.00		35.00

290486 £200000000 9.5% 2007 issued.

£100m issued Apr '86 at £98.125, and £100m in Apr '87 at £95.75.

Total raised = £193,875,000.

Interest due 29 April.

Share price 290486 = £3.21

If 20% discount, then would issue £193875000/£2.57 i.e. (.8 x £3.21)

= 75437743 new ordinary shares

Interest for 11 months has been taken into account.

The EPS under the original debt issue is 17.78p, on the equity recon. this drops to 17.52p.

Example: Land Securities ye Mar 1988 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		169600		169600
INTEREST (ex new fin)	7		7	
NEW FINANCE INTEREST	19000		0	
	-----		-----	
TOTAL INTEREST		19000		0
	-----		-----	
Net profit after int		150600		169600
Pub.pre-tax profit		133600		152600
basic taxation	37600		37600	
tax change	0		6650	
	-----		-----	
TOTAL TAX		37600		44250
	-----		-----	
Earnings after tax		96000		108350
Prof dividend	0		0	
Minority interest	0		0	
EARNINGS for ORD		96000		108350
	=====		=====	
EPS (pence/ord share)		19.07		18.72
	=====		=====	
Total ord. shares at start of year ('000)	503400		578838	
Average no. ord. shares (at start of year, '000)		503400		573664
No. of new ord. shares (total, '000)	100		100	
No. of new ord. shares (used in EPS calc., '000)		100		5274
Total ord. shares at y/e ('000)	503500		578938	
Average no. ord. shares (used in EPS calc., '000)		503500		578938
Amount of new debt £ (nominal)		200000000		N/A
Coupon rate		9.500		N/A
Tax rate		35.00		35.00

290486 £200000000 9.5% 2007 issued:
£100m issued Apr '86 at £98.125, and £100m in Apr '87 at £95.75.
Total raised = £193,875,000.
Interest due 29 April.

Share price 290486 = £3.21
If 20% discount, then would issue £193875000/£2.57 i.e. (.8 x £3.21)
= 75437743 new ordinary shares

A full year's interest has been taken into account.

The EPS on the original debt issue is 19.07p, on the equity recon. this drops to 18.72p.

There has been an actual small increase of 100,000 shares, issued April 1987. These have all been included in the weighted average number of shares for the year in the actual issue scenario.
For the reconstruction scenario, the weighted average number of shares is:

$$578,838,000 + 100,000 = 578,938,000$$

LAND SECURITIES Y/E MAR 1987

Calcn. of ex-rights price
.....

$P_o = 0.8P_c$
 $= 0.8 \times \text{£}3.21$
 $= \text{£}2.57$

$M = 503,400,000 \text{ shares}$

$M = \text{£}B/P_o$
 $= 193,875,000/\text{£}2.57$
 $= 75,437,743$

The terms of the rights issue are:
 $M : M = m : n$
 $75,437,743 : 503,400,000$
 $1 : 6.67$

$P_x = \frac{(mP_o + nP_c)}{m+n}$
 $= \frac{1 \times \text{£}2.57 + 6.67 \times \text{£}3.21}{1 + 6.67}$
 $= 23.98/7.67$
 $= \text{£}3.13$

Therefore theoretical ex-rights price is £3.13.

Calculation of Weighted Average No. Shares
.....

Total proceeds from rights issue	$75,437,743 \times \text{£}2.57$ $= \text{£}193,875,000$
Market price per share	$= \text{£}3.21$
Fresh issue at market value	$= \text{£}193,875,000/\text{£}3.21$ $= 60,397,196 \text{ shares}$
Total no. shares issued	$= 75,437,743$
Less fresh issue at market value	$= (60,397,196)$
Bonus issue	$= 15,040,547$

Bonus issue based on: (i) 503,400,000 shares in issue before rights issue
(ii) 60,397,196 shares (fresh issue)

Total = 563,797,196 shares
Bonus ratio = 15,040,547 : 563,797,196
 $= 1 : 37.49 (2 : 75)$
Factor = 75/77

Shares	Actual		Weighted Av.
	503,400,000	$\times 77/75$ $\times 11/12$	43,068,667
Fresh issue	60,397,196		--
	563,797,196	$\times 77/75$ $\times 11/12$	530,595,805
Bonus issue	15,040,547		-
	578,837,743		573,644,472
	*****		*****

APPENDIX 6-1-35

Example: Lasmo ye Dec 1986 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		25900		25900
INTEREST (ex new fin)	33325		33325	
NEW FINANCE INTEREST	3375		0	
	-----		-----	
TOTAL INTEREST		36700		33325
	-----		-----	
Net profit after int		-10800		-7425
Pub.pre-tax profit		7000		10375
basic taxation	-13200		-13200	
tax change	0		1215	
	-----		-----	
TOTAL TAX		-13200		-11985
	-----		-----	
Earnings after tax		20200		22360
Pref dividend	4500		4500	
Minority interest	0		0	
EARNINGS for ORD		15700		17860
	=====		=====	
EPS (pence/ord share)		9.63		9.05
	=====		=====	
Total ord. shares at start of year ('000)		122364		122364
Average no. ord. shares (at start of year, '000)		114220		114220
No. of new ord. shares (total, '000)		41272		85686 *
No. of new ord. shares (used in EPS calc., '000)		48816		83022
Total ord. shares at y/e ('000)		163636		208050
Average no. ord. shares (used in EPS calc., '000)		163036		197262
Amount of new debt £ (nominal)		50000000		N/A
Coupon rate		10.125		N/A
Tax rate		36.00		36.00

170486 £50000000 10.125% 1993 issued at 100.375
Interest due 7 May.

Share price 170486 = £1.41
If 20% discount, then would issue £50187500/£1.13 (.8 x £1.41)
= 44413717 new ordinary shares

On the original debt issue the EPS is 9.63p, on the equity recon. this falls to 9.05p.

Interest for 8 months has been taken account of in the statements.

There was an actual increase in the number of ordinary shares of 41,272,000, issued 5 Jan. 1986.

Note. Interest capitalised in the y/e Dec 1986 was £1.2m

Example: Lesmo ye Dec 1987 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		29100		29100
INTEREST (ex new fin)	29037		29037	
NEW FINANCE INTEREST	5063		0	
	-----		-----	
TOTAL INTEREST		34100		29037
		-----		-----
Net profit after int		-5000		63
Pub.pre-tax profit		38000		43063
basic taxation	13700		13700	
tax change	0		1772	
	-----		-----	
TOTAL TAX		13700		15472
		-----		-----
Earnings after tax		24300		27591
Prof dividend	4000		4000	
Minority interest	0		0	
EARNINGS for ORD		20300		23591
	=====		=====	
EPS (pence/ord share)		12.40		11.33
		=====		=====
Total ord. shares at start of year ('000)	163636		208050	
Average no. ord. shares (gt start of year, '000)		163036		197242
No. of new ord. shares (total, '000)	364		364	
No. of new ord. shares (used in EPS calc., '000)		708		10917
Total ord. shares at y/e ('000)	164000		208414	
Average no. ord. shares (used in EPS calc., '000)		163744		208159
Amount of new debts £ (nominal)		50000000		N/A
Coupon rate		10.125		N/A
Tax rate		35.00		35.00

170486 £50000000 10.125% 1993 issued at 100.375

Share price 170486 = £1.41

If 20% discount, then would issue £50187500/(.8 x £1.41)
= 44413717 new ordinary shares

Interest for a full year has been taken account of in the statements.

On the original debt issue the EPS is 12.40p, on the equity recon., this decreases to 11.33p.

There has been an actual increase in the number of ordinary shares of 364,000, issued 13 September 1987. This has also been included in the equity reconstruction.

For the reconstruction scenario, shares in issue during the year:

01/01/87 - 12/09/87 = 208,050,000

13/09/87 - 31/12/87 = 208,414,000

The weighted average number of shares is calculated as:

$208,050,000 \times 8.4/12 + 208,414,000 \times 3.6/12 = 208,159,200$

Note. Interest capitalised in the y/e Dec 1987 was £1.4m.

LASMO Y/E DEC 1986

Calcn. of ex-rights price

.....

$$P_o = 0.8P_c$$
$$= 0.8 \times \text{£}1.41$$
$$= \text{£}1.13$$

$$N = 163,636,000 \text{ shares} *$$

$$M = EB/P_o$$
$$= 50,187,500/\text{£}1.13$$
$$= 44,413,717$$

The terms of the rights issue are:

$$M : N = m : n$$
$$44,413,717 : 163,636,000$$
$$1 : 3.68$$

$$P_x = \frac{(mP_o + nP_c)}{m+n}$$
$$= \frac{1 \times \text{£}1.13 + 3.68 \times \text{£}1.41}{1 + 3.68}$$
$$= 6.32/4.68$$
$$= \text{£}1.35$$

Therefore theoretical ex-rights price is £1.35

* Based on the number of shares at start of year plus the issue in early January.

Calculation of Weighted Average No. Shares

.....

Total proceeds from rights issue $44,413,717 \times \text{£}1.13$
= £50,187,500

Market price per share = £1.41

Fresh issue at market value = £50,187,500/£1.41
= 35,593,972 shares

Total no. shares issued = 44,413,717

Less fresh issue at market value = (35,593,972)

Bonus issue = 8,819,745

Bonus issue based on: (i) 163,636,000 shares in issue before rights issue
(ii) 35,593,972 shares (fresh issue)

Total = 199,229,972 shares
Bonus ratio = 8,819,745 : 199,229,972
= 1 : 22.59 (2 : 45)
Factor = 45/47

Shares	Actual		Weighted Av.
At start of year	163,636,000	x47/45 x3.5/12	49,848,374
Fresh issue	35,593,972		--
	199,229,972	x 47/45 x8.5/12	147,393,285
Bonus issue	8,819,745		-
	208,049,717		197,241,659
	=====		=====

APPENDIX 6-1-36

Example: Lasmo ye Dec 1989 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY	
	£000	£000	£000	£000
Operating profit		53100		53100
INTEREST (ex new fin)	38331		38331	
NEW FINANCE INTEREST	12969		0	
	-----		-----	
TOTAL INTEREST		51300		38331
		-----		-----
Net profit after int		1800		14769
Pub.pre-tax profit		81900		94869
basic taxation	19200		19200	
tax change	0		4539	
	-----		-----	
TOTAL TAX		19200		23739
		-----		-----
Earnings after tax		62700		71130
Pref dividend	7400		7400	
Minority interest	1200		1200	
EARNINGS for ORD		54100		62530
	=====		=====	
EPS (pence/ord share)		23.65		23.71
		=====		=====
Total ord. shares at start of year ('000)	193946		193946	
Average no. ord. shares (at start of year, '000)		175766		175766
No. of new ord. shares (total, '000)	44222		84471 *	
No. of new ord. shares (used in EPS calc., '000)		52998		87937
Total ord. shares at y/e ('000)	238168		278417	
Average no. ord. shares (used in EPS calc., '000)		228764		263703
Amount of new debt £ (nominal)		150000000		N/A
Coupon rate		10.375		N/A
Tax rate		35.00		35.00

130389 £150000000 10.375% 2009 issued at 99.281.
Interest due 22 June and 22 Dec.

Share price 130389 = £4.62
If 20% discount, then would issue £148921500/£3.70 (.8 x £4.62)
= 40249054 new ordinary shares

Interest for 10 months has been taken into account.

On the original debt issue the EPS is 23.65p, on the equity recon, this increases slightly to 23.71p.

There has also been an actual increase in the number of ordinary shares of 44,222,000, issued 17 March 1989.

* Comprises the actual increase of 44,222,000 plus the hypothetical issue of 40,249,054.

Example: Lasmo ye Dec 1990 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	DEBT		EQUITY	
	£000	£000	£000	£000
Operating profit		74800		74800
INTEREST (ex new fin)	60737		60737	
NEW FINANCE INTEREST	15563		0	
	-----		-----	
TOTAL INTEREST		76300		60737
		-----		-----
Net profit after int		-1500		14063
Pub.pre-tax profit		112200		127763
basic taxation	27600		27600	
tax change	0		5667	
	-----		-----	
TOTAL TAX		27600		33067
		-----		-----
Earnings after tax		84600		94716
Prof dividend	7300		7300	
Minority interest	1600		1600	
EARNINGS for ORD		75700		85816
	=====		=====	
EPS (pence/ord share)		21.14		21.52
	=====		=====	
Total ord. shares at start of year ('000)	238168		278417	
Average no. ord. shares (at start of year, '000)		228764		263703
No. of new ord. shares (total, '000)	120388		120388	
No. of new ord. shares (used in EPS calc., '000)		129327		135102
Total ord. shares at y/e ('000)	358556		398805	
Average no. ord. shares (used in EPS calc., '000)		358091		398805
Amount of new debt £ (nominal)		150000000		N/A
Coupon rate		10.375		N/A
Tax rate		35.00		35.00

130389 £150000000 10.375% 2009 issued at 99.281.

Share price 130389 = £4.62

If 20% discount, then would issue £148921500/((.8 x £4.62)
= 40249054 new ordinary shares

Interest for 10 months has been taken into account.

On the original debt issue the EPS is 21.14p, on the equity recon., this increases slightly to 21.52p.

Again there has been an actual increase in the number of ordinary shares of 120,388,000, issued 2 January 1990. This has also been included in the equity reconstruction, and given the proximity of the issue to the start of the year, it has been included in its entirety in the weighted average number of shares figure.

For the reconstruction scenario, shares in issue during the year and weighted average number of shares is 278,417,000 + 120,388,000 = 398,805,000.

LASMO Y/E DEC 1989

Calcn. of ex-rights price

$$P_o = 0.8P_c$$
$$= 0.8 \times \text{£}4.62$$
$$= \text{£}3.70$$

$$M = 193,946,000 \text{ shares} *$$

$$M = \text{£}B/P_o$$
$$= \text{£}148,921,500/\text{£}3.70$$
$$= 40,249,054$$

The terms of the rights issue are:

$$M : M = m : n$$
$$40,249,054 : 193,946,000$$
$$1 : 4.82$$

$$P_x = \frac{(mP_o + nP_c)}{m+n}$$
$$= 1 \times \text{£}3.70 + 4.82 \times \text{£}4.62 / 1 + 4.82$$
$$= 25.97/5.82$$
$$= \text{£}4.46$$

Therefore theoretical ex-rights price is £4.46

* Based on shares in issue at start of year.

Calculation of Weighted Average No. Shares

Total proceeds from rights issue 40,249,054 x £3.70
= £148,921,500

Market price per share = £4.62

Fresh issue at market value = £148,921,500/£4.62
= 32,234,091 shares

Total no. shares issued = 40,249,054
Less fresh issue at market value = (32,234,091)
Bonus issue = 8,014,963

Bonus issue based on: (i) 193,946,000 shares in issue before rights issue
(ii) 32,234,091 shares (fresh issue)

Total = 226,180,091 shares
Bonus ratio = 8,014,963 : 226,180,091
= 1 : 28.22 (1 : 28)
Factor = 28/29

Shares	Actual			Weighted Av.
At start of year	193,946,000	x29/28	x2/12	33,478,774
Fresh issue	32,234,091			--

	226,180,091		x10/12	195,214,960
Bonus issue	8,014,963			-
	-----			-----
	234,195,054			228,693,734
Issue in March 1989	44,222,000		x9.5/12	35,009,083
	-----			-----
	278,417,054			263,702,817
	-----			-----

APPENDIX 6-1-37

Example: MEPC ye Sep 1986 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		85700		85700
INTEREST (ex new fin)	7		7	
NEW FINANCE INTEREST	3844		0	
	-----		-----	
TOTAL INTEREST		3844		7
		-----		-----
Net profit after int		81856		85700
Pub.pre-tax profit		58400		62244
basic taxation	19100		19100	
tax change	0		1461	
	-----		-----	
TOTAL TAX		19100		20561
		-----		-----
Earnings after tax		39300		41683
Prof dividend	100		100	
Minority interest	0		0	
EARNINGS for ORD		39200		41583
		=====		=====
EPS (pence/ord share)		16.35		16.25
		=====		=====
Total ord. shares at start of year ('000)		237508		237508
Average no. ord. shares (at start of year, '000)		212500		212500
No. of new ord. shares (total, '000)		3292		30866
No. of new ord. shares (used in EPS calc., '000)		27244		43456
Total ord. shares at y/e ('000)		240800		268374
Average no. ord. shares (used in EPS calc., '000)		239744		255956
Amount of new debt £ (nominal)		75000000		N/A
Coupon rate		10.75		N/A
Tax rate		38		35.00

260386 £75000000 10.25% 2003 issued at 100.
Interest due 15 April
Share price 260386 = £3.40

If 20% discount, then would issue £75000000/£2.72 (.8 x £3.40)
= 27,573,529 new ordinary shares

Interest has been included for 6 months.

On the original debt issue the EPS is 16.35p, on the equity recon., the EPS decreases to 16.25p.

There was an actual increase of 3,292,000 shares during the year, issued 26 Jan. 1986. This has also been included in the equity reconstruction.

Example: MEPC ye Sep 1987 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		109700		109700
INTEREST (ex new fin)	7		7	
NEW FINANCE INTEREST	7688		0	
	-----		-----	
TOTAL INTEREST		7688		0
	-----		-----	
Net profit after int		102013		109700
Pub.pre-tax profit		80200		87888
basic taxation	25800		25800	
tax change	0		2691	
	-----		-----	
TOTAL TAX		25800		28491
	-----		-----	
Earnings after tax		54400		59397
Prof dividend	100		100	
Minority interest	800		800	
EARNINGS for ORD		53500		58497
	=====		=====	
EPS (pence/ord share)		19.20		19.12
	=====		=====	
Total ord. shares at start of year ('000)		240800		268374
Average no. ord. shares (at start of year, '000)		239744		255956
No. of new ord. shares (total, '000)		75200		75200
No. of new ord. shares (used in EPS calc., '000)		38856		50018
Total ord. shares at y/e ('000)		316000		343574
Average no. ord. shares (used in EPS calc., '000)		278600		305974
Amount of new debt £ (nominal)		150000000		N/A
Coupon rate		10.75		N/A
Tax rate		35		35.00

260386 £75000000 10.25% 2003 issued at 100.

Interest due 15 April

Share price 260386 = £3.40

If 20% discount, then would issue £75000000/£2.72 (.8 x £3.40)
= 27,573,529 new ordinary shares

A full year's interest has been taken into account.

On the original debt issue the EPS is 19.20p, on the equity recon., the EPS decreases to 19.12p.

There has been an actual increase in the number of ordinary shares of 75,200,000, issued 30 March 1987. This has been included in the equity reconstruction.

For the reconstruction scenario, shares in issue during the year:

01/10/86 - 29/03/87 = 268,374,000

30/03/87 - 30/09/87 = 343,574,000

The weighted average number of shares is calculated as:

268,374,000 x 6/12 + 343,574,000 x 6/12 = 305,974,000.

Calculation of ex-rights price

$$\begin{aligned}
 P_o &= 0.8P_c \\
 &= 0.8 \times \text{£}3.40 \\
 &= \text{£}2.72
 \end{aligned}$$

$$N = 240,800,000 \text{ shares} *$$

$$\begin{aligned}
 M &= \text{£}B/P_o \\
 &= 75,000,000/\text{£}2.72 \\
 &= 27,573,529
 \end{aligned}$$

The terms of the rights issue are:

$$\begin{aligned}
 M : N &= m : n \\
 27,573,529 : 240,800,000 \\
 1 : 8.73
 \end{aligned}$$

$$\begin{aligned}
 P_x &= (mP_o + nP_c) / m+n \\
 &= 1 \times \text{£}2.72 + 8.73 \times \text{£}3.40 / 1 + 8.73 \\
 &= 32.40/9.73 \\
 &= \text{£}3.33
 \end{aligned}$$

Therefore theoretical ex-rights price is £3.33.

* Based on number of shares in issue when the rights issue was made.

Calculation of Weighted Average No. Shares

Total proceeds from rights issue	27,573,529 x £2.72
	= £75,000,000
Market price per share	= £3.40
Fresh issue at market value	= £75,000,000/£3.40
	= 22,058,824 shares
Total no. shares issued	= 27,573,529
Less fresh issue at market value	= (22,058,824)
Bonus issue	= 5,514,705

Bonus issue based on: (i) 240,800,000 shares in issue before rights issue
(ii) 22,058,824 shares (fresh issue)

$$\begin{aligned}
 \text{Total} &= 262,858,824 \text{ shares} \\
 \text{Bonus ratio} &= 5,514,705 : 262,858,824 \\
 &= 1 : 47.67 (1 : 48) \\
 \text{Factor} &= 48/49
 \end{aligned}$$

Shares	Actual		Weighted Av.
At start of year	237,508,000	x49/48 x4/12	80,818,694
Issue in Jan 1986	3,292,000		-

	240,800,000	x49/48 x2/12	40,969,444
Fresh issue	22,058,824		-

	262,858,824	x49/48 x6/12	134,167,525
Bonus issue	5,514,705		-

	268,373,529		255,955,663
	=====		=====

APPENDIX 6-1-38

Example: Taylor Woodrow ye Dec 1989 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		37500		37500
INTEREST (ex new fin)	19700		19700	
NEW FINANCE INTEREST	1900		0	
	-----		-----	
TOTAL INTEREST		21600		19700
	-----		-----	
Net profit after int		15900		17800
Pub.pre-tax profit		116900		118800
basic taxation	36900		36900	
tax change	0		665	
	-----		-----	
TOTAL TAX		36900		37565
	-----		-----	
Earnings after tax		80000		81235
Pref dividend	0		0	
Minority interest	3600		3600	
EARNINGS for ORD		76400		77635
	=====		=====	
EPS (pence/ord share)		23.72		23.78
	=====		=====	
Total ord. shares at start of year ('000)	158257		158257	
Average no. ord. shares (at start of year, '000)		156571		156571
No. of new ord. shares (total, '000)	170811		186918	
No. of new ord. shares (used in EPS calc., '000)		165489		169856
Total ord. shares at y/e ('000)	329068		345175	
Average no. ord. shares (used in EPS calc., '000)		322060		326427
Amount of new debts £ (nominal)		80000000		N/A
Coupon rate		9.500		N/A
Tax rate		35.00		35.00

090389 £80000000 9.5% 2014 issued at 30.00 (part-paid)

Share price 090389 = £6.19

If 20% discount, then would issue £24000000/£1.49((.8 x £6.19)x.3)
= 16107383 new ordinary shares
(The new ord. shares have been treated as issued part-paid,
at 30%, to correspond with the debt issued part-paid at 30%).

Interest for 10 months has been taken into account, based on
the £24000000 part-paid debt.

There has been an actual increase in the number of shares in issue
of 170,811,000, issued 15 January 1989. This has been included in the
equity reconstruction.

On the original debt issue the EPS is 23.72p, on the equity recon., the
EPS increases to 23.78p.

Note. There was interest capitalised of £5.2m for y/e Dec 1989.

Example: Taylor Woodrow ye Dec 1990 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTNETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY	
	£000	£000	£000	£000
Operating profit		16800		16800
INTEREST (ex new fin)	23220		23220	
NEW FINANCE INTEREST	2280		0	
	-----		-----	
TOTAL INTEREST		25500		23220
	-----		-----	
Net profit after int		-8700		-6420
Pub.pre-tax profit		83400		85680
basic taxation	25200		25200	
tax change	0		798	
	-----		-----	
TOTAL TAX		25200		25998
	-----		-----	
Earnings after tax		58200		59682
Prof dividend	0		0	
Minority interest	2600		2600	
EARNINGS for ORD		55600		57082
	-----		-----	
EPS (pence/ord share)		16.82		17.01
	-----		-----	
Total ord. shares at start of year ('000)	329068		345175	
Average no. ord. shares (at start of year, '000)		322060		326427
No. of new ord. shares (total, '000)	3194		3194	
No. of new ord. shares (used in EPS calc., '000)		8573		9070
Total ord. shares at y/e ('000)	332262		348369	
Average no. ord. shares (used in EPS calc., '000)		330633		335497
Amount of new debt £ (nominal)		80000000		N/A
Coupon rate		9.500		N/A
Tax rate		35.00		35.00

090389 £80000000 9.5% 2014 issued at 30.00 (part-paid)
Share price 090389 = £6.19
If 20% discount, then would issue £24000000/((.8 x £6.19)x.3)
= 16107383 new ordinary shares
(The new ord. shares have been treated as issued part-paid,
at 30%, to correspond with the debt issued part-paid at 30%).

Interest for the whole year has been taken into account, based on the £24000000 part-paid debt.

On the original debt scenario the EPS is 16.82p, on the equity recon., this increases to 17.01p.

There has been an actual increase in the number of ordinary shares of 3,194,000, issued 4 July 1990. This has also been included in the equity reconstruction.

For the reconstruction, shares in issue during the year:

01/01/90 - 03/07/90 = 345,175,000
04/07/90 - 31/12/90 = 348,369,000

The weighted average number of shares is calculated as :

$345,175,000 \times 6/12 + 348,369,000 \times 6/12 - (16,107,383 \times 0.7)$
= 335,496,832

Again an adjustment for the partly paid shares is made in calculating the weighted average number of shares for the reconstruction.

Note. There was interest capitalised of £8.7m for y/e Dec 1990.

TAYLOR WOODROW Y/E DEC 1989

Calc. of ex-rights price

$P_o = 0.8P_c$
 $= 0.8 \times \pounds 1.86$
 $= \pounds 1.49$

$M = 329,068,000 \text{ shares}$

$M = \frac{EB}{P_o}$
 $= \frac{24,000,000}{\pounds 1.49}$
 $= 16,107,383$

The terms of the rights issue are:

$M : N = m : n$
 $16,107,383 : 329,068,000$
 $1 : 20.43$

$P_x = \frac{(mP_o + nP_c)}{m+n}$
 $= \frac{1 \times \pounds 1.49 + 20.43 \times \pounds 1.86}{1 + 20.43}$
 $= \frac{39.49}{21.43}$
 $= \pounds 1.84$

Therefore theoretical ex-rights price is $\pounds 1.84$.

* Based on number of shares in issue when rights issue made.

Calculation of Weighted Average No. Shares

Total proceeds from rights issue	$16,107,383 \times \pounds 1.49$ $= \pounds 24,000,000$
Market price per share	$= \pounds 1.86$
Fresh issue at market value	$= \frac{\pounds 24,000,000}{\pounds 1.86}$ $= 12,903,226 \text{ shares}$
Total no. shares issued	$= 16,107,383$
Less fresh issue at market value	$= (12,903,226)$
Bonus issue	$= 3,204,157$

Bonus issue based on: (i) 329,068,000 shares in issue before rights issue
(ii) 12,903,226 shares (fresh issue)

Total = 341,971,226 shares
Bonus ratio = 3,204,157 : 341,971,226
 $= 1 : 106.73 \text{ (3 : 320)}$
Factor = 320/323

Shares	Actual		Weighted Av.
At start of year	158,257,000	$\times 323/320 \times 0.5/12$	6,655,861
Issue in Jan 1989	170,811,000		

	329,068,000	$\times 323/320 \times 1.5/12$	41,519,127
Fresh issue	12,903,226		
	-----		--
	341,971,226	$\times 323/320 \times 10/12$	287,647,672
less adj. for part pd.	-	see note below	(9,395,973)
Bonus issue	3,204,157		-
	-----		-----
	345,175,383		326,426,687
	=====		=====

Note. It is necessary to adjust for the part-paid shares as follows:
 $16,107,383 \times 10/12 \times 0.7 = 9,395,973$

In the reconstruction it is assumed that partly paid shareholders are to receive such proportion of the dividend entitlement due to fully paid shareholders so as to reflect the extent and period that the shares are partly paid.

This is because SSAP3 states that where some of the shares are not fully paid, earnings should be apportioned over the different classes of shares in accordance with their dividend rights or other rights to participate in profits.

APPENDIX 6-1-39

Example: Vaux Group ye Sep 1989 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		28815		28815
INTEREST (ex new fin)	3340		3340	
NEW FINANCE INTEREST	2150		0	
	-----		-----	
TOTAL INTEREST		5490		3340
		-----		-----
Net profit after int		23325		25475
Pub.pre-tax profit		31569		33719
basic taxation	8839		8839	
tax change	0		753	
	-----		-----	
TOTAL TAX		8839		9592
		-----		-----
Earnings after tax		22730		24128
Prof dividend	125		125	
Minority interest	0		0	
EARNINGS for ORD		22605		24003
	=====		=====	
EPS (pence/ord share)		18.61		17.72
		=====		=====
Total ord. shares at start of year ('000)	47417		47417	
Average no. ord. shares (at start of year, '000)		47320		47320
No. of new ord. shares (total, '000)	75343		101649 *	
No. of new ord. shares (used in EPS calc., '000)		74130		88119
Total ord. shares at y/e ('000)	122760		149066	
Average no. ord. shares (used in EPS calc., '000)		121450		135439
Amount of new debt £ (nominal)		60000000		N/A
Coupon rate		10.750		N/A
Tax rate		35.00		35.00

170589 £60000000 10.75% 2019 issued at 99.523
Interest due Mar 26 and Sep 26.

Share price 170589 = £2.84
If 20% discount, then would issue £59713800/£2.27 (.8 x £2.84)
= 26305639 new ordinary shares

Interest for 4 months has been taken into account.

On the original debt issue, the EPS is 18.61p. On the equity recon., the EPS drops to 17.72p.

* Comprises the actual increase in the year of 75,343,000 plus the hypothetical rights issue of 26,305,639.

Note. There was interest capitalised of £1.302m for y/e Sep 1989.

Example: Vaux Group ye Sep 1990 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		34069		34069
INTEREST (ex new fin)	1834		1834	
NEW FINANCE INTEREST	6450		0	
	-----		-----	
TOTAL INTEREST		8284		1834
		-----		-----
Net profit after int		25785		32235
Pub.pre-tax profit		35826		42276
basic taxation	8950		8950	
tax change	0		2258	
	-----		-----	
TOTAL TAX		8950		11208
		-----		-----
Earnings after tax		26876		31069
Prof dividend	125		125	
Minority interest	0		0	
EARNINGS for ORD		26751		30944
	=====		=====	
EPS (pence/ord share)		20.30		19.57
	=====		=====	
Total ord. shares at start of year ('000)	122760		149066	
Average no. ord. shares (at start of year, '000)		121450		135439
No. of new ord. shares (total, '000)	13030		13030	
No. of new ord. shares (used in EPS calc., '000)		10350		22639
Total ord. shares at y/e ('000)	135790		162096	
Average no. ord. shares (used in EPS calc., '000)		131800		158078
Amount of new debts £ (nominal)		60000000		N/A
Coupon rate		10.750		N/A
Tax rate		35.00		35.00

170589 £60000000 10.75% 2019 issued at 99.523

Share price 170589 = £2.84

If 20% discount, then would issue £59713800/(.8 x £2.84)

= 26305639 new ordinary shares

Interest for the whole year has been taken into account.

On the original debt issue the EPS is 20.30p, on the equity recon. this decreases to 19.57p.

There was an actual increase in the number of ordinary shares in issue of 13,030,000, issued 21 January 1990.

For the reconstruction scenario, shares in issue during the year:

01/10/89 - 20/01/90 = 149,066,000

21/10/90 - 30/09/90 = 162,096,000

The weighted average number of shares is calculated as:

149,066,000 x 3.7/12 + 162,096,000 x 8.3/12 = 158,078,417

Note. There was interest capitalised of £2.775m for y/e Sep 1990.

VAUX Y/E SEP 1989

Calcn. of ex-rights price
.....

$P_o = 0.8P_c$
 $= 0.8 \times £2.84$
 $= £2.27$

$M = 122,760,000 \text{ shares} *$

$M = EB/P_o$
 $= 59,713,800/£2.27$
 $= 26,305,639$

The terms of the rights issue are:
 $M : N = m : n$
 $26,305,639 : 122,760,000$
 $1 : 4.67$

$P_x = \frac{mP_o + nP_c}{m+n}$
 $= \frac{1 \times £2.27 + 4.67 \times £2.84}{1 + 4.67}$
 $= 15.53/5.67$
 $= £2.74$

Therefore theoretical ex-rights price is £2.74

* Based on number of shares in issue when rights issue made.

Calculation of Weighted Average No. Shares
.....

Total proceeds from rights issue	$26,305,639 \times £2.27$ $= £59,713,800$
Market price per share	$= £2.84$
Fresh issue at market value	$= £59,713,800/£2.84$ $= 21,025,986 \text{ shares}$
Total no. shares issued	$= 26,305,639$
Less fresh issue at market value	$= (21,025,986)$
Bonus issue	$= 5,279,653$

Bonus issue based on: (i) 122,760,000 shares in issue before rights issue
(ii) 21,025,986 shares (fresh issue)

$\text{Total} = 143,785,986 \text{ shares}$
 $\text{Bonus ratio} = 5,279,653 : 143,785,986$
 $= 1 : 27.23 (4 : 109)$
 $\text{Factor} = 109/113$

Shares	Actual		Weighted Av.
At start of year	122,760,000	$\times 113/109$	$\times 7.5/12$ 79,540,596
Fresh issue	21,025,986		
	-----		--
	143,785,986	$\times 113/109$	$\times 4.5/12$ 55,898,451
Bonus issue	5,279,653		-
	-----		-----
	149,065,639		135,439,047
	-----		-----

As the 75,343,000 issue was made in early October, close to the start of the company's year, it has been included as shares 'at start of year'.

APPENDIX 6-1-40

Example: Whitbread ye Feb 1991 : YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		203100		203100
INTEREST (ex new fin)	47584		47584	
NEW FINANCE INTEREST	2616		0	
	-----		-----	
TOTAL INTEREST		50200		47584
		-----		-----
Net profit after int		152900		155516
Pub.pre-tax profit		286800		289416
basic taxation	71000		71000	
tax change	0		889	
	-----		-----	
TOTAL TAX		71000		71889
		-----		-----
Earnings after tax		215800		217526
Prof dividend	400		400	
Minority interest	5600		5600	
EARNINGS for ORD		209800		211526
	=====		=====	
EPS (pence/ord share)		47.29		47.17
	=====		=====	
Total ord. shares at start of year ('000)	441744		441744	
Average no. ord. shares (at start of year, '000)		441300		441300
No. of new ord. shares (total, '000)	3971		15939 *	
No. of new ord. shares (used in EPS calc., '000)		2301		7171
Total ord. shares at y/e ('000)	445715		457683	
Average no. ord. shares (used in EPS calc., '000)		443601		448471
Amount of new debt £ (nominal)		135000000		N/A
Coupon rate		11.625		N/A
Tax rate		34.00		34.00

071290 £135000000 11.625% 2011 issued at 99.286
Interest Jan 31 and Jul 31.

Share price 071290 = £14.00

If 20% discount, then would issue £134036100/ £11.20 (.8 x £14)
= 11967509 new ordinary shares

Interest has been taken into account for two months.

There has been an actual increase in the number of shares in issue of 3,971,000. These were issued 5 Sep 1990.

On the original debt scenario the EPS is 47.29p, on the equity recon. the EPS decreases to 47.17p.

* Comprises the hypothetical rights issue of 11,967,509 plus the actual increase of 3,971,000 shares.

Note. There was interest capitalised of £9m for y/e Feb 1991.

Example: Whitbread ye Feb 1992 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE		HYPOTHETICAL ISSUE	
	-----		-----	
	DEBT		EQUITY ALT.	
	£000	£000	£000	£000
Operating profit		148700		148700
INTEREST (ex new fin)	37306		37306	
NEW FINANCE INTEREST	15694		0	
	-----		-----	
TOTAL INTEREST		53000		37306
	-----		-----	
Net profit after int		95700		111394
Pub.pre-tax profit		219000		234694
basic taxation	53500		53500	
tax change	0		5179	
	-----		-----	
TOTAL TAX		53500		58679
	-----		-----	
Earnings after tax		165500		176015
Prof dividend	400		400	
Minority interest	5100		5100	
EARNINGS for ORD		160000		170515
	=====		=====	
EPS (pence/ord share)		35.78		37.13
	=====		=====	
• Total ord. shares at start of year ('000)		445715		457683
Average no. ord. shares (at start of year, '000)		443601		448471
No. of new ord. shares (total, '000)		3171		3171
No. of new ord. shares (used in EPS calc., '000)		3599		10798
Total ord. shares at y/e ('000)		448886		460854
Average no. ord. shares (used in EPS calc., '000)		447200		459269
Amount of new debts £ (nominal)		135000000		N/A
Coupon rate		11.625		N/A
Tax rate		33		33

071290 £135000000 11.625% 2011 issued at 99.286

Interest Jan 31 and Jul 31.

Share price 071290 = £14.00

If 20% discount, then would issue £134036100/ £11.20 (.8 x £14)
= 11967509 new ordinary shares

Interest has been charged for the whole year.

There has been an increase in the actual number of shares of 3,171,000 issued 4 September 1991. This increase has also been included in the equity reconstruction.

For the equity recon., shares in issue during the year:

01/03/91 - 03/09/91 = 457,683,000

04/09/91 - 29/02/92 = 460,854,000

The weighted average number of shares is calculated as:

$457,683,000 \times 6/12 + 460,854,000 \times 6/12 = 459,268,500$

On the original debt issue the EPS is 35.78p, under the equity recon., this increases to 37.13p.

Note. There was interest capitalised of £8.8m for y/e Feb 1992.

Calcn. of ex-rights price

$$\begin{aligned} P_o &= 0.8P_c \\ &= 0.8 \times \text{£}14 \\ &= \text{£}11.20 \end{aligned}$$

$$N = 445,715,000 \text{ shares}$$

$$\begin{aligned} M &= \text{£}B/P_o \\ &= 134,036,100/\text{£}11.20 \\ &= 11,967,509 \end{aligned}$$

The terms of the rights issue are:

$$\begin{aligned} M : N &= m : n \\ 11,967,509 : 445,715,000 \\ 1 : 37.24 \end{aligned}$$

$$\begin{aligned} P_x &= \frac{mP_o + nP_c}{m+n} \\ &= \frac{1 \times \text{£}11.20 + 37.24 \times \text{£}14}{1 + 37.24} \\ &= \frac{532.56}{38.24} \\ &= \text{£}13.93 \end{aligned}$$

Therefore theoretical ex-rights price is £13.93

Calculation of Weighted Average No. Shares

$$\begin{aligned} \text{Total proceeds from rights issue} &= 11,967,509 \times \text{£}11.20 \\ &= \text{£}134,036,100 \end{aligned}$$

$$\text{Market price per share} = \text{£}14$$

$$\begin{aligned} \text{Fresh issue at market value} &= \text{£}134,036,100/\text{£}14 \\ &= 9,574,007 \text{ shares} \end{aligned}$$

$$\text{Total no. shares issued} = 11,967,509$$

$$\text{Less fresh issue at market value} = (9,574,007)$$

$$\text{Bonus issue} = 2,393,502$$

Bonus issue based on: (i) 445,715,000 shares in issue before rights issue
(ii) 9,574,007 shares (fresh issue)

$$\text{Total} = 455,289,007 \text{ shares}$$

$$\text{Bonus ratio} = 2,393,502 : 455,289,007$$

$$= 1 : 190.22 \text{ (1 : 190)}$$

$$\text{Factor} = 190/191$$

Shares	Actual		Weighted Av.
At start of year	441,744,000	x191/190 x6/12	222,034,484
Issue in Sep 1990	3,971,000		

	445,715,000	x191/190 x3/12	112,015,217
Fresh issue	9,574,007		
	-----		--
	455,289,007	x191/190 x3/12	114,421,316
Bonus issue	2,393,502		-
	-----		-----
	457,682,509		448,471,017
	=====		=====

APPENDIX 6-1-41

Example - Helical Bar plc ye Jan 1988 : YEAR OF ISSUE

	ACTUAL ISSUE	HYPOTHETICAL ISSUE
	DEBT	EQUITY ALT.
Operating profit	8023	8023
INTEREST (ex new fin)	0	0
NEW FINANCE INTEREST	0	0
	-----	-----
TOTAL INTEREST	0	0
	-----	-----
Net profit after int	8023	8023
Pub.pre-tax profit	7164	7164
basic taxation	2431	2431
tax change	0	
	-----	-----
TOTAL TAX	2431	2431
	-----	-----
Earnings after tax	4733	4733
Pref dividend	204	0
Minority interest	382	382
EARNINGS for ORD	4147	4351
	=====	=====
EPS(pence/share)	21.92	21.56
	=====	=====
Total ord. shares at start of year ('000)	3620	3620
Average no. ord. shares (at start of year,'000)	3620	3620
No. of new ord. shares (total,'000)	15300	20327
No. of new ord. shares (used in EPS calc., '000)	15300	16557
Total ord. shares at y/e ('000)	18920	23947
Average no. ord. shares (used in EPS calc., '000)	18920	20177
Amount of debt (nominal)	N/A	N/A
Coupon rate	N/A	N/A
Tax rate	35	35

051187 Issue of 5.25% Conv. Cum. Red. Preference shares.
Raised £19.6m. Redeemable 2012 at par (£1).

Redemption details : Company may at any time purchase the shares at a price not greater than the average of the middle market quotations for the 10 days preceding the date of the purchase or, in the case of a purchase in the market, at the market price provided that the price is not more than 5% above the average price.

Conversion details : 1 Pref. may be converted into 1 ordinary share at a price of 348p (cum price 348p, xe 09/10/87). Convertible into ordinary 25p shares on 1 Sep in each of the years from 1990-2006 inc. on the basis of 25.65 ords on the basis of 25.65 ords for every 100 prefs.

This reconstruction will be carried out on the basis of what would have been the effect if the conv. cum. red. prefs. had been converted IMMEDIATELY at the conversion ratio of 25.65 ords. for every 100 prefs.?

The number of ordinary shares would have increased by
 $19,600,000/100 \times 25.65 = 5,027,400$

The preference dividend would not be payable under the recon. scenario.

For the recon., the total number of ordinary shares is calculated as:

01/02/87 - 04/11/87 = 18,920,000
05/11/87 - 31/01/88 = 23,947,000

For the recon., the weighted average is calculated as :

$18,920,000 \times 9/12 + 23,947,000 \times 3/12 = 20,176,750$

For the original issue the EPS is 21.92p, on the recon., the EPS decreases to 21.56p.

Note that the increase in shares of 15,300,000 relates to the subdivision of existing shares into a smaller nominal value. Per SSAP3 any such increase in the number of shares arising from a stock split is treated in effect from the start of the year for weighted average number of shares.

Example - Helical Bar plc ye Jan 1989 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE ----- DEBT	HYPOTHETICAL ISSUE ----- EQUITY ALT.
Operating profit	18987	18987
INTEREST (ex new fin)	0	0
NEW FINANCE INTEREST	0	0
	-----	-----
TOTAL INTEREST	0	0
	-----	-----
Net profit after int	18987	18987
Pub.pre-tax profit	12212	12212
basic taxation	4028	4028
tax change	0	
	-----	-----
TOTAL TAX	4028	4028
	-----	-----
Earnings after tax	8184	8184
Pref dividend	994	0
Minority interest	473	473
EARNINGS for ORD	6717	7711
	=====	=====
EPS(pence/share)	35.50	32.20
	=====	=====
Total ord. shares at start of year ('000)	18920	23947
Average no. ord. shares (at start of year, '000)	18920	20177
No. of new ord. shares (total, '000)	0	0
No. of new ord. shares (used in EPS calc., '000)	0	3770
Total ord. shares at y/e ('000)	18920	23947
Average no. ord. shares (used in EPS calc., '000)	18920	23947
Amount of debt (nominal)	N/A	N/A
Coupon rate	N/A	N/A
Tax rate	35	35

051187 Issue of 5.25% Conv. Cum. Red. Preference shares.
Raised £19.6mn. Redeemable 2012 at par (£1).

Redemption details : Company may at any time purchase the shares at a price not greater than the average of the middle market quotations for the 10 days preceding the date of the purchase or, in the case of a purchase in the market, at the market price provided that the price is not more than 5% above the average price.

Conversion details : 1 Pref. may be converted into 1 ordinary share at a price of 348p (cum price 348p, xe 09/10/87). Convertible into ordinary 25p shares on 1 Sep in each of the years from 1990-2006 inc. on the basis of 25.65 ords on the basis of 25.65 ords for every 100 prefs.

This reconstruction will be carried out on the basis of what would have been the effect if the conv. cum. red. prefs. had been converted IMMEDIATELY at the conversion ratio of 25.65 ords. for every 100 prefs.?

The number of ordinary shares would have increased by
 $19,600,000/100 \times 25.65 = 5,027,400$

The preference dividend would not be payable under the recon. scenario.

For the recon., the weighted average number of shares is calculated as the shares in issue during the year, i.e. 23,947,000

For the original issue the EPS is 35.50p, on the recon., the EPS falls to 32.20p.

Note that the increase in shares of 15,300,000 relates to the subdivision of existing shares into a smaller nominal value. Per SSAP3 any such increase in the number of shares arising from a stock split is treated as though the increase had been in effect from the start of the year for weighted average number of shares.

Example - Next y/e Jan 1988 : YEAR OF ISSUE

	ACTUAL ISSUE	HYPOTHETICAL ISSUE
	DEBT	EQUITY ALT.
Operating profit	84565	84565
INTEREST (ex new fin)	5354	5354
NEW FINANCE INTEREST	1917	0
TOTAL INTEREST	7271	5354
Net profit after int	77294	79211
Pub.pre-tax profit	86471	88388
basic taxation	29435	29435
tax change	0	671
TOTAL TAX	29435	30106
Earnings after tax	57036	58282
Pref dividend	71	71
Minority interest	0	0
EARNINGS for ORD	56965	58211
EPS (pence/ord share).	19.33	19.71
Total ord. shares at start of year ('000)	254590	254590
Average no. ord. shares (at start of year, '000)	148400	148400
No. of new ord. shares (total, '000)	105180	128436
No. of new ord. shares (used in EPS calc., '000)	146300	146929
Total ord. shares at y/e ('000)	359770	383026
Average no. ord. shares (used in EPS calc., '000)	294700	295329
Amount of debts (nominal)	100000000	
Coupon rate	5.75	
Tax rate	35	35
Comput. of min.int		

180987 Issue of 100,000,000 £1 5.75% convertible bonds, 2003.
Issued at par by way of rights, being £1 bonds for 3.57 ords.
Cum-rights price of ord. £3.73, xc Sep 22).

Proceeds £100,000,000
Conversion terms: convertible into ordinary shares at any time from 12/11/87 to 02/01/03 inc. at the rate of 1 ord. share for 430p (subject to adjustment) nominal of convertible bonds.

The reconstruction is based on what would have happened if the conversion to ordinary shares had taken place immediately?

The number of ordinary shares issued would have been $100,000,000/4.30 = 23,255,814$ ordinary shares that would need to be issued if the bonds were converted immediately.

There was also an issue of shares in July 1987 of 105,180,000. This has also been included in the reconstruction scenario.

For the recon., the total shares in issue:
01/09/86 - 16/07/87 = 254,590,000
17/07/87 - 17/09/87 = 359,770,000
18/09/87 - 31/01/88 = 383,025,814

For the recon., the weighted average number of shares is calculated as:

$254,590,000 \times 10.5/17 + 359,770,000 \times 2/17 + 383,025,814 \times 4.5/18$
= 295,329,101

On the original issue, the EPS is 19.33p, on the reconstruction this would have increased to 19.71p.

It is assumed that the new equity would not result in irrecoverable ACT.

NOTE (1) The period ended 31 Jan 1988 represents a 74 week accounting period, the firm's year end prior to this was 31 August 1986.
(2) There was interest capitalised of £3.459m for y/e Jan 1988.

Example -

Next y/e Jan 1989 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE	HYPOTHETICAL ISSUE
	DEBT	EQUITY ALT.
Operating profit	82600	82600
INTEREST (ex new fin)	19750	19750
NEW FINANCE INTEREST	5750	0
TOTAL INTEREST	25500	19750
Net profit after int	57100	62850
Pub.pre-tax profit	62300	68050
basic taxation	22500	22500
tax change	0	2013
TOTAL TAX	22500	24513
Earnings after tax	39800	43538
Prof dividend	100	100
Minority interest	0	0
EARNINGS for ORD	39700	43438
EPS (pence/ord share)	10.86	11.19
Total ord. shares at start of year ('000)	359770	383026
Average no. ord. shares (at start of year, '000)	294700	295329
No. of new ord. shares (total, '000)	8860	8860
No. of new ord. shares (used in EPS calc., '000)	70800	92865
Total ord. shares at y/e ('000)	368630	391886
Average no. ord. shares (used in EPS calc., '000)	365500	388194
Amount of debts (nominal)	100000000	
Coupon rate	5.75	
Tax rate	35	35

Comput. of min.int

180987 Issue of 100,000,000 £1 5.75% convertible bonds, 2003.
Issued at par by way of rights, being £1 bonds for 3.57 ords.
Cum-rights price of ord. £3.73, xc Sep 22).

Proceeds £100,000,000

Conversion terms: convertible into ordinary shares at any time from
12/11/87 to 02/01/03 inc. at the rate of 1 ord. share for 430p (subject
to adjustment) nominal of convertible bonds.

The reconstruction is based on what would have happened if the conversion
to ordinary shares had taken place immediately?

The number of ordinary shares issued would have been $100,000,000/4.30 =$
23,255,814 ordinary shares that would need to be issued if the bonds were
converted immediately.

There was an actual increase in the number of shares of 8,860,000, issued
7 June 1988. This has also been included in the recon. scenario.

For the recon., the weighted average number of shares is calculated as:

01/02/88 - 06/06/88 = $383,026,000 \times 5/12 = 159,594,167$
07/06/88 - 31/01/89 = $391,886,000 \times 7/12 = 228,600,167$

i.e. 388,194,334

On the original issue the EPS is 10.86p, on the recon., this increases
to 11.19p.

It is assumed that the new equity would not result
in irrecoverable ACT.

Note. There was interest capitalised of £6.5m for y/e Jan 1989.

Example -

Worcester Group ye Dec 1990 : YEAR OF ISSUE

	ACTUAL ISSUE ----- DEBT	HYPOTHETICAL ISSUE ----- EQUITY ALT.
Operating profit	4427	4427
INTEREST (ex new fin)	758	758
NEW FINANCE INTEREST	0	0
	-----	-----
TOTAL INTEREST	758	758
	-----	-----
Net profit after int	3669	3669
Pub.pre-tax profit	3553	3553
basic taxation	1182	1182
tax change	0	0
	-----	-----
TOTAL TAX	1182	1182
	-----	-----
Earnings after tax	2371	2371
Prof dividend	30	0
Minority interest	1	1
EARNINGS for ORD	2340	2370
	=====	=====
EPS (pence/ord share)	9.59	7.66
	=====	=====
Total ord. shares at start of year ('000)	23260	23260
Average no. ord. shares (at start of year, '000)	23260	23260
No. of new ord. shares (total, '000)	3240	51329
No. of new ord. shares (used in EPS calc., '000)	1140	7660
Total ord. shares at y/e ('000)	26500	74589
Average no. ord. shares (used in EPS calc., '000)	24400	30920
Amount of pref. shares	4500000	
Coupon rate	N/A	
Tax rate	34	34

101190 Issue of £5.049m 10p Cumulative Redeemable Prefrs at 100p, redeemable 2006.

Issued 5,049,385 cum. red. prefs.

Conversion terms : Preference shares are convertible into ordinary shares at the rate of £1 nominal of ords. for every £1.05 nominal of prefs. converted on any bank business day up to 23/12/2001.

Redemption terms : Redeemable as to £50,000 nominal on each of 31 Dec and 30 Jun in each year, commencing on 31-12-96, with a final redemption of £54938.5 nominal on 30/06/2001. There shall be paid on each preference share so redeemed the nominal amount paid up plus a premium of 90p per share and any arrears of dividend.

The reconstruction is based on what would have happened if the preference shares had been converted immediately.

The number of new ordinary shares issued in the event of an immediate conversion would be: $5,049,385 / 1.05 = 4,808,938 \times 10 = 48,089,381$ (the ordinary shares have a nominal value of 10p)

In the first year of issue the preference dividend was only £30,000 and not the full year's dividend.

There has been an actual increase in the number of ordinary shares of 3,240,000, this comprises 1,990,000 issued in Apr 1990 and 1,250,000 issued in Nov 1990. These increases have also been included in the reconstruction.

For the reconstruction, the total number of ordinary shares is:

01/01/90 - 04/04/90 = 23,260,000
05/04/90 - 09/11/90 = 25,250,000
10/11/90 - 31/12/90 = 74,589,381

For the recon. the weighted average number of ordinary shares is calculated as:

$23,260,000 \times 3/12 + 25,250,000 \times 7.5/12 + 74,589,381 \times 1.5/12 = 30,919,923$

On the original issue the EPS is 9.59p, on the reconstruction scenario this decreases to 7.66p.

Example -

Worcester Group ye Dec 1991 : YEAR FOLLOWING YEAR OF ISSUE

	ACTUAL ISSUE ----- DEBT	HYPOTHETICAL ISSUE ----- EQUITY ALT.
Operating profit	5420	5420
INTEREST (ex new fin)	1280	1280
NEW FINANCE INTEREST	0	0
	-----	-----
TOTAL INTEREST	1280	1280
	-----	-----
Net profit after int	4140	4140
Pub.pre-tax profit	4520	4520
basic taxation	1160	1160
tax change	0	0
	-----	-----
TOTAL TAX	1160	1160
	-----	-----
Earnings after tax	3360	3360
Prof dividend	500	0
Minority interest	90	90
EARNINGS for ORD	2770	3270
	=====	=====
EPS (pence/ord share)	10.42	4.38
	=====	=====
Total ord. shares at start of year ('000)	26500	74589
Average no. ord. shares (at start of year, '000)	24400	30920
No. of new ord. shares (total, '000)	400	400
No. of new ord. shares (used in EPS calc., '000)	2187	43759
Total ord. shares at y/e ('000)	26900	74989
Average no. ord. shares (used in EPS calc., '000)	26587	74679
Amount of pref. shares	4500000	
Coupon rate	10	
Tax rate	34	34

101190 Issue of £5.049m 10p Cumulative Redeemable Prefs at 100p,
redeemable 2006.
Issued 5,049,385 cum. red. prefs.

Conversion terms : Preference shares are convertible into ordinary shares
at the rate of £1 nominal of ords. for every £1.05 nominal of prefs.
converted on any bank business day up to 23/12/2001.

Redemption terms : Redeemable as to £50,000 nominal on each of 31 Dec
and 30 Jun in each year, commencing on 31-12-96, with a final redemption
of £34938.5 nominal on 30/06/2001. There shall be paid on each preference
share so redeemed the nominal amount paid up plus a premium of 90p per share
and any arrears of dividend.

The reconstruction is based on what would have happened if the preference
shares had been converted immediately.

The number of new ordinary shares issued in the event of an immediate
conversion would be: $5,049,385 / 1.05 = 4,808,938 \times 10 = 48,089,381$
(the ordinary shares have a nominal value of 10p)

The preference dividend for the year is £500,000. This has been excluded
in the equity reconstruction.

There has been an actual increase in the number of ordinary shares of
400,000 issued 12 October 1991. This has also been included in the recon.

For the reconstruction, the total number of ordinary shares is:

01/01/91 - 11/10/91 = 74,589,000
12/10/91 - 31/12/91 = 74,989,000

For the recon. the weighted average number of ordinary shares is calculated
as:

$74,589,000 \times 9.3/12 + 74,989,000 \times 2.7/12 = 74,679,000$

On the original issue the EPS is 10.42p, on the reconstruction scenario
this decreases to 4.38p.

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