

January 2006

Corporate Capital Structure

Authors

Henri Servaes*Professor of Finance*[London Business School](#)**Peter Tufano***Sylvan C. Coleman Professor
of Financial Management*[Harvard Business School](#)

Editors

James Ballingall*Capital Structure and Risk
Management Advisory*

Deutsche Bank

+44 20 7547 6738

james.ballingall@db.com**Adrian Crockett***Head of Capital Structure and
Risk Management Advisory,
Europe & Asia*


Deutsche Bank

+44 20 7547 2779

adrian.crockett@db.com**Roger Heine***Global Head of Liability
Strategies Group*

Deutsche Bank

+1 212 250 7074

roger.heine@db.com

The Theory and Practice of Corporate Capital Structure

Executive Summary

This paper discusses the theory and practice of corporate capital structure, drawing on results from a recent survey.

Theoretical Considerations

A firm could use three methods to determine its capital structure:

- **Trade off Theory:** There are various costs and benefits associated with debt financing. We would expect firms to trade off these costs and benefits to come up with the level of debt that maximizes the value of the firm or the value accruing to those in control of the firm. The most significant factors are listed below, together with the impact on the optimal level of debt. ↑ indicates that the factor is a benefit of debt and leads to a higher optimal debt level, while ↓ indicates a cost of debt that reduces the optimal level. For some factors the impact is not clear and these are indicated as ↑/↓

Variable	Effect on level of debt
Taxes	
Corporate tax rate	↑
Personal tax rate on equity income	↑
Personal tax rate on debt income	↓
Financial Distress Costs	
Direct	↓
Indirect	↓
Debt Mispricing	
Interest rates on my debt are too low	↑
Interest rates on my debt are too high	↓
Positive market sentiment towards debt financing	↑
Negative market sentiment toward debt financing	↓
Information	
Signalling firm quality	↑
Signalling aggressive competition	↑
Flexibility	↓
Access to capital markets at fair price	↑/↓
Costs of excess investment	↑
Costs of underinvestment	↓
Other	
Transaction costs	↑/↓
Creditor rights	↑/↓
Control	↑
Competitiveness of the industry	↓
Improved bargaining ability	↑

- **Pecking Order Theory:** The pecking order theory of capital structure says that firms do not have a target amount of debt in mind, but that the amount of debt financing employed depends on the profitability of the firm. Firms will use funds from the following sources in order until that source is exhausted or the cost of that source becomes too high:
 - Retained Profits
 - Debt Financing

➤ Equity Financing

The theoretical justification behind this argument is that access to capital markets—especially for equity—is so expensive that it totally dominates all other factors. This is only true if there are very significant information asymmetries

- **Inertia:** The final view of capital structure is that the debt/equity choice is mainly driven by inertia. If firms only raise outside financing when needed, the observed behaviour may be very similar to that which would emerge if firms follow the pecking order theory. However, the decision is not driven by the worry about flexibility or cost of access, but by the fact that this is the easiest outcome—i.e., this argument suggests that firms follow that course of action which takes the least effort

Practical Considerations

- The firm's credit rating is an important communication tool and previous research has shown that many companies consider it important in capital structure decisions
- In practice, firms may be concerned about their ability to access markets and their ability to achieve fair pricing, these concerns often feed into their capital structure decisions
- Earnings per Share (EPS), while irrelevant from a strictly theoretical perspective, are often actively managed by firms and debt has an impact on the level and volatility of EPS

Survey Results

- Target capital structures are rarer than we imagined. 68% of firms say that they have a target capital structure, but 32% do not
- In selecting a target, firms compare debt levels and interest payments with EBITDA, a proxy for cash flow. EBITDA/Interest and Debt/EBITDA are the two targets most frequently used by firms, although many alternatives are also used
- Credit ratings are far more important in capital structure decisions than suggested by the theory. Survey respondents indicate that they are the single most important factor in firm's decisions
- Financial flexibility, including the ability to maintain investment and dividends, is the second most important factor
- The value of tax shields associated with debt, which academics consider to be a key determinant of capital structure under tradeoff theory, ranks as the third most important in practice
- Other factors that significantly affect the capital structure decision include:
 - Financial Covenants – Many firms have already committed to certain levels of debt financing
 - Impact on EPS – Firms prefer not to use equity because of its impact on EPS and share price
 - Information Asymmetries – Managers' perceptions of undervalued equity leads them to more highly levered capital structures

Contents

Table of Contents

Introduction	7
This Paper	7
Global Survey of Corporate Financial Policies & Practices.....	7
Related Papers	7
Notation and Typographical Conventions.....	8
Theoretical Considerations	9
Irrelevance	9
Corporate Taxes	12
Personal Taxes.....	16
Costs of Financial Distress	20
Information.....	22
Signalling Firm Quality	22
Signalling Aggressive Competition.....	23
Access to Financial Markets and Financial Flexibility	23
Pecking Order Theory	24
Flexibility.....	25
Managerial Self Interest.....	26
Positive Impact of Debt on Managers	26
Negative Impact of Debt on Managers.....	27
General Case	27
Mispricing/Sentiment	28
The Interest Rate is Not Fair	28
If Equity is Valued at a Premium or Discount.....	29
Other Factors.....	30
Transaction Costs	30
Creditor Rights	30
Control.....	30
Effect of Competition.....	31
Bargaining with Stakeholders.....	31
Summary.....	31
Practical Considerations	33
Credit Ratings	33
The Market's Capacity for the Firm's Debt	33
The Ability to Manage Earnings Per Share (EPS).....	33
The Definition of Debt.....	34
Summary.....	34
Survey Results	35
Defining Debt.....	35
Do Firms Have Target Capital Structures?.....	36

Defining the Target	37
Deciding on the Level of Debt	41
Credit Rating	42
Ability to Continue Making Investments	42
Tax Shield.....	43
Other Factors	43
Regional Analysis.....	44
Summary	44
Adding Debt	45
Financial Distress	45
Other Factors	46
Regional Analysis.....	47
Adding Equity.....	48
Target debt ratio	48
EPS dilution.....	49
Control.....	50
Transaction Costs	50
Other Factors	50
Regional Analysis.....	50
Summary.....	51

Table of Figures

Figure 1: Expected Rates of Return as a Function of the Ratio of Debt to Equity	11
Figure 2: Firm Valuation With and Without Debt Financing.....	12
Figure 3: Firm Value as a Function of Debt, Assuming Perfect Capital Markets	12
Figure 4: Firm Valuation with Taxes but without Debt Financing	13
Figure 5: Creating Value with the Tax Shield on Debt.....	14
Figure 6: Firm Value as a Function of Debt, Assuming Corporate Taxes	15
Figure 7: Firm Value assuming Corporate Taxes and Risky Tax Shields	16
Figure 8: Corporate and Personal Tax Cases	18
Figure 9: Gain from Leverage at Various Corporate and Personal Tax Rates.....	19
Figure 10: Firm Value assuming no Taxes but with Financial Distress Costs.....	21
Figure 11: Firm Valuation with Financial Distress Costs	22
Figure 12: Firm Value with Possible Under-investment and Possible Over-investment	27
Figure 13: Firm Valuation with Debt Financing if the Interest Rate is Too Low.....	28
Figure 14: Firm Valuation with Debt Financing if the Interest Rate is Too High.....	29
Figure 15: Firm Valuation with Debt Financing if Market Punishes Debt	29
Figure 16: Firm Valuation with Debt Financing if Market Rewards Debt.....	29
Figure 17: Elements of Debt Included.....	35
Figure 18: Proportion of Firms with a Target Capital Structure by Region	37
Figure 19: Capital Structure Targets.....	38
Figure 20: Capital Structure Targets by Region	40
Figure 21: Factors in Determining Level of Debt	42
Figure 22: Importance of Tax Shields.....	43

Figure 23: Factors in Deciding Not to Add More Debt.....	45
Figure 24: Factors in Deciding Not to Add More Debt - Regional Analysis.....	47
Figure 25: Factors in Deciding Not to Add More Equity.....	48
Figure 26: Theoretical versus Perceived Practical Viewpoints.....	49
Figure 27: Factors in Deciding Not to Add More Equity.....	51

Table of Appendices

Appendix I: References.....	53
Appendix II: Formula Derivations.....	55
Appendix III: Detailed Results.....	57

Acknowledgments

The thanks of the Authors and Editors are due to various parties who have assisted in the preparation and testing of the survey itself, the compilation of results and the preparation of these reports. We would specifically like to thank Sophia Harrison of Deutsche Bank for her extensive work on data analysis and presentation of materials and Steven Joyce of Harvard University for his research assistance. Our thanks are also due to the members of Deutsche Bank's Liability Strategies Group and other specialists throughout Deutsche Bank for their useful insights throughout the process; to the project's secondary sponsor, the Global Association of Risk Professionals (GARP), and GARP members for their assistance in preparing and testing the survey questions and website; and to the technology providers, Prezza Technologies, for developing the survey website and especially for accommodating last minute changes to very short deadlines. Finally, we would like to thank Deutsche Bank's corporate clients who participated in the survey for their time and effort. Without them this project would not have been possible.

Introduction

This Paper

This paper provides an overview of current capital structure theory together with a detailed analysis of the results of a recent corporate capital structure survey. Specifically, it addresses how firms determine their level of debt. The paper is divided into four sections:

- **This Introduction**
- **Theoretical Considerations**
- **Practical Considerations**
- **Survey Results**

Global Survey of Corporate Financial Policies & Practices

The empirical evidence in this paper is drawn from a survey conducted during mid 2005 by Professor Henri Servaes of London Business School and Professor Peter Tufano of Harvard Business School. The project was originated and sponsored by Deutsche Bank AG with the Global Association of Risk Professionals (GARP) acting as secondary sponsor.

334 companies globally participated with responses distributed widely by geography and by industry. Further details of the sample can be found in the note "Survey Questions and Sample" which is available at www.dbbonds.com/lsg/reports.jsp.

Related Papers

In addition to this paper, five other papers drawing on the results of the survey include:

- CFO Views
- Corporate Debt Structure
- Corporate Liquidity
- Corporate Dividend Policy
- Corporate Risk Management

All these papers are available at www.dbbonds.com/lsg/reports.jsp. The website also contains a streaming video of Professors Servaes and Tufano presenting an overview of the results at a Deutsche Bank hosted conference.

Notation and Typographical Conventions

Although all the symbols that we use in formulas are described when they are first used, we also list them here for ease of reference:

- V_{NoDebt} Value of the firm without any debt
- V_{Debt} Value of the firm with debt
- C Annual cashflow generated by the assets
- $E(r_a)$ Expected return generated by the assets
- $E(r_e)$ Expected return on the firm's equity
- $E(r_d)$ Expected return on the firm's debt
- E Market value of the firm's outstanding equity
- D Market value of the firm's outstanding debt
- T_c Corporate tax rate on the firm's profits
- T_d Personal tax rate that applied to interest payments on debt
- T_e Blended personal tax rate that applies to dividend payments and capital gains on equity

The following symbols are used when discussing the results of the survey:

- \bar{x} Mean of a dataset
- \tilde{x} Median of a dataset
- N Size of the dataset

All questions in the survey were optional and some questions were not asked directly, depending on the answers to previous questions. Therefore, the number of responses, N , to different questions varies and is shown for each question. Items in *italics* indicate that the term appeared as one of the answer options in the survey question. Items underlined indicate a reference to one of the other papers in this series. Due to rounding, the numbers in some figures may not add up to the 100% or the total shown.

Unless otherwise stated, all data in this document are drawn from the results of The Global Survey of Corporate Financial Policies and Practices.

Theoretical Considerations

In this section we discuss the various theoretical arguments about capital structure that have been put forward over the last half century since Modigliani and Miller's seminal paper in 1958.

Irrelevance

To understand why capital structure matters and how corporates can employ capital structure to enhance shareholder value, it is important to understand under what circumstances it does not matter.

Assumptions

As a starting point in the analysis, let's consider a very simplified scenario in which:

- There are no taxes
- Corporate executives have the same set of information as investors
- There are no transaction costs
- Investors and markets are rational
- The firm's level of investment is fixed
- There are no costs of recontracting or bankruptcy
- The interests of managers and shareholders are aligned

We call these the *perfect capital markets* assumptions. Under these conditions, consider the following example:

Example 1

A firm has assets which generate annual returns of €10 in perpetuity and require no reinvestment of profits. The required rate of return on these assets is 10%. The firm does not have any debt financing.

The value of the firm in this case is €100, computed as:¹

$$\begin{aligned}
 V_{\text{No debt}} &= \text{Value of firm} \\
 &= \text{Value of perpetual cashflow} \\
 &= \frac{\text{Cashflow}}{\text{Return}} \\
 &= \frac{C}{\mathbf{E}(r_a)} \\
 &= \frac{10}{10\%} \\
 &= 100
 \end{aligned}$$

and the value of the equity of the firm is also €100 because there is no debt outstanding.

Is it now possible for this firm to create value by replacing €50 of equity by €50 of debt?

¹ See Appendix II for a derivation of this formula.

Assume that the market interest rate on this debt is 7%, and that the debt will be rolled over whenever it matures. By market interest rate, we mean that this is a fair interest rate, reflecting the risk of the business.

Initially, it may appear that value has been created. These are the cash flows to the investors in the firm:

Debtholders receive	$50 \times 7\%$	$= \text{€}3.5$
Equityholders receive	$10 - \text{€}3.5$	$= \text{€}6.5$

We know that the debt is worth €50. If the equityholders receive a cash flow of €6.5 per year, one may be tempted to believe that the equity is now worth €65 [=6.5/10%], so that the value of the firm has now increased to €115 [=65+50]. However, this is incorrect. When the firm has increased its level of debt financing, shareholders in the firm will no longer be satisfied with a return of 10%. They will require a higher compensation for the increased risk in holding the shares of the company. The required rate of return on the shares of the firm will go up to 13% (see below) so that the value of equity becomes €50 [=6.5/13%]. The value of the company will remain unchanged at €100, €50 of which is debt financing, and €50 of which is equity financing.

The weighted average of the cost of debt and equity will remain at 10% [= (50×7%+50×13%)/100], which is the return generated by the assets of the firm.

We can look at the above result from a portfolio perspective. The debt and the equity of the firm are both claims on the assets of the firm. If we hold a portfolio of both the debt and the equity, we have a claim with the same risk as the assets of the firm. If the required rate of return on the debt of the firm is 7%, then the required rate of return on the equity of the firm has to be 13%, so that the average required rate of return on the two investments is 10%. This portfolio of debt and equity has the same risk as the equity investment in a similar firm without debt financing outstanding.

General Case

By issuing debt, we divide up the claims against the assets into a safer part and a riskier part. The debt is the safer part because debtholders get paid first. The equity is the riskier part because equityholders get paid last. As a result, the required rate of return on the debt will always be below the required return on the equity.

In sum, under the perfect markets assumptions, debt financing does not create *any* value because it does not affect the value of the assets against which the firm has a claim. Ultimately, the value of the debt and the equity of the firm depend on the value of the assets of the business. If debt financing does not affect the value of the assets, it will not affect the combined value of the debt and equity issued against those assets. This proposition is also known as Modigliani and Miller proposition I, named after the two economists who first made this argument.

Figure 1 illustrates the relationship between various rates of return and the ratio of the debt to equity of the firm. Note that the expected rate of return on the assets of the firm does not change as we include more debt in the capital structure. However, the expected rates of return on both equity and debt increase as the firm has more debt. The expected return on debt increases as this claim on the firm becomes riskier. Equityholders also want a higher return when more debt is outstanding, because they are taking on more risk. However, the weighted average of the two remains unchanged.

Thus, the irrelevance argument suggests that the amount of debt financing employed in the firm does not affect value.

The rate of return required by the equityholders in the firm can be expressed as:

$$\mathbf{E}(r_e) = \mathbf{E}(r_a) + \frac{D}{E} [\mathbf{E}(r_a) - \mathbf{E}(r_d)]$$

Where $\mathbf{E}(r_a)$ is the expected return on the assets,

$\mathbf{E}(r_e)$ is the expected return on the equity of the firm,

$\mathbf{E}(r_d)$ is the expected return on the debt of the firm,

D is the market value of the debt and

E is the market value of the equity.

The equation is also known as Modigliani Miller Proposition II.

In the above example

$$\mathbf{E}(r_e) = 10\% + \left(\frac{50}{50}\right)[10\% - 7\%] = 13\% .$$

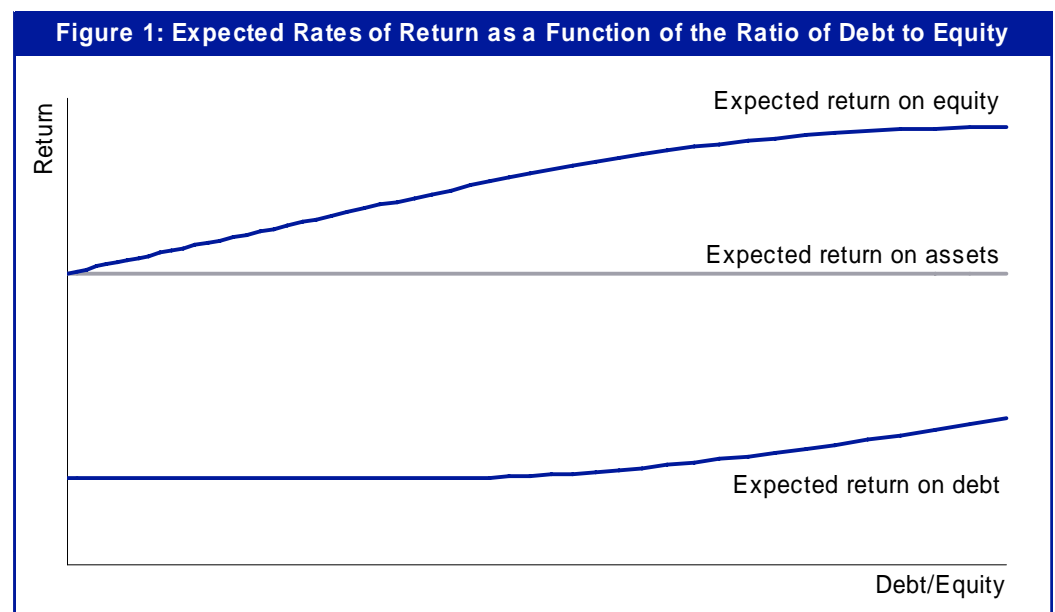
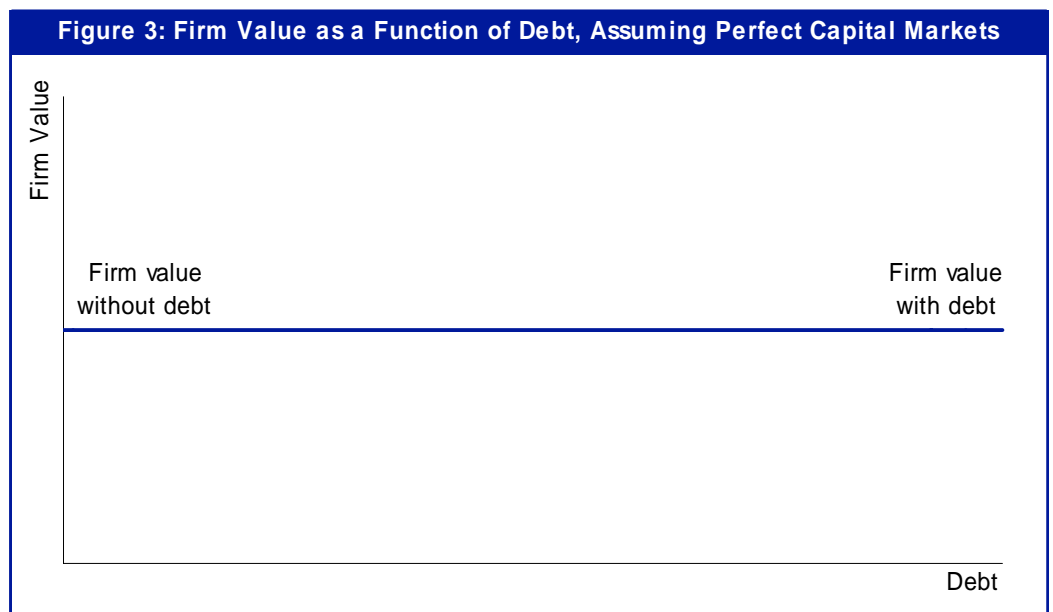


Figure 2 illustrates the valuations of different capital structure components with and without debt. The figures shown are market values and not necessarily accounting values.

Figure 2: Firm Valuation With and Without Debt Financing				
Without Debt	Assets	Liabilities and Equity		
	Assets	100	Equity	100
	Total	100	Total	100
With Debt	Assets	Liabilities and Equity		
	Assets	100	Debt	50
	Total	100	Equity	50
		100	Total	100

Figure 3 below is a graphical illustration of the relationship between the value of the firm and the amount of debt outstanding. Given the above assumptions, the relationship is simply a flat line: firm value is not affected by the amount of debt outstanding.



In the remainder of this section, we relax some of the perfect capital market assumptions and examine the impact on the optimal level of debt financing.

Corporate Taxes

Sadly, few firms operate in the idyllic environment described above. One of the most obvious imperfections is taxation. This section discusses the impact of corporate taxes on capital structure. It assumes that there are no personal taxes.

Assumptions

We start with the perfect capital market assumptions except for the tax assumption, which changes to:

- Corporations are taxed, but interest payments on debt are tax deductible while dividend payments on equity are not. Also:
 - The corporate tax rate is T_c
 - There are no personal taxes

- There is always enough profit to make interest valuable from a tax perspective. That is, the taxable profit before interest and tax is always greater than the interest expense so that the interest leads to a lower tax bill²

Let us now revisit Example 1, but with corporate taxes.

Example 2

A firm has assets which generate annual returns of €10 in perpetuity, after corporate tax payments of 35%. The required rate of return on these assets is 10%. The firm does not have any debt financing.

The value of the firm in this case is €100 [=10/10%], and the value of the equity of the firm is also €100 because there is no debt outstanding. The situation without debt financing is:

Figure 4: Firm Valuation with Taxes but without Debt Financing

With Debt	Assets		Liabilities and Equity	
	Assets	100	Debt	0
			Equity	100
Total	100	Total	100	

Would it now be possible for this firm to create value by replacing €50 of equity with €50 of debt? We assume, as before, that the market interest rate on this debt is 7% and that the debt will be rolled over whenever it matures.

The firm earned €10 after corporate tax payments of 35%. This means that pre-tax income was €15.38 [=10/(1-35%)]. If the firm were to have €50 of debt, the cash flows to investors would be the following:

Cashflow to equityholders	$= (\text{€}15.38 - 7\% \times \text{€}50)(1 - 0.35)$	= €7.73
Cashflow to debtholders	$= 7\% \times \text{€}50$	= €3.50
Total cashflows generated by the firm		= €11.23

This cash flow is higher than the cash flow generated by the firm without debt financing, because of the tax deductibility of interest payments. With debt financing, the firm is able to deduct interest payments of €3.50 from its income, before computing tax payments. This results in a tax saving of €1.23 [=35%×3.50]. This tax saving is called the *debt tax shield*, the amount by which the firm is able to reduce taxes because of the debt financing.

The next step is to determine what the value of the firm is, now that it is able to reduce its annual tax bill by €1.23. There is a convenient way of computing the new value of the firm. We can divide the cash flows to the firm into two pieces, which we can value:

$$\text{Cashflow to equityholders if there had been no debt} = \text{€}10.00$$

² Alternatively, if the government pays loss making firms a subsidy at the same rate at which it would tax profits then the arguments in this section all still hold.

Tax savings because of debt financing = €1.23

We know that the value of the cash flow of €10 is €100 because this is the value of the firm without debt. To value the tax savings associated with debt financing, it is often assumed that the tax savings are as risky as the debt. This would imply a discount rate of 7%. Thus, the value of the tax savings would be €17.5 [=1.23/7%].³ This assumes that the debt is permanently in the capital structure of the firm, so that the tax savings will last forever. Notice that this is equal to the amount of debt outstanding, multiplied by the corporate tax rate. This leads to the following formula:

Value of firm with debt = Value of firm without debt + Debt × Corporate Tax Rate

$$V_{\text{Debt}} = V_{\text{No debt}} + D \times T_c$$

The present value of the tax savings is an additional asset of the firm. It does not show up on the traditional financial statements of the company, but in market value terms, we can think about this as an additional asset.

To get from the initial structure to the new structure, the company would go through the following steps:

Figure 5: Creating Value with the Tax Shield on Debt

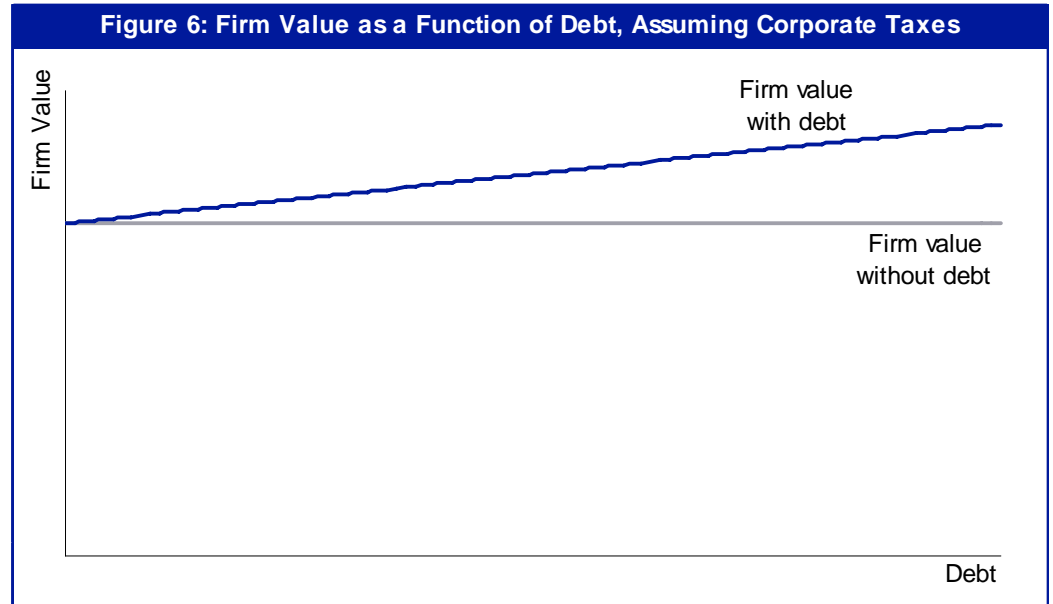
		Assets		Liabilities and Equity	
Current Situation	Assets	100	Equity	100	
	Total	100	Total	100	
Step 1 Announce Intention to Replace €50 of Equity with Debt	Assets		Liabilities and Equity		
	Assets	100	Equity	117.5	
	Tax Shield	17.5			
	Total	117.5	Total	117.5	
Step 2 Issue €50 of Debt	Assets		Liabilities and Equity		
	Assets	100	Debt	50	
	Tax Shield	17.5	Equity	117.5	
	Cash holdings	50			
Total	167.5	Total	167.5		
Step 3 Repurchase €50 of shares	Assets		Liabilities and Equity		
	Assets	100	Debt	50	
	Tax Shield	17.5	Equity	67.5	
	Total	117.5	Total	117.5	

When the transactions are completed the firm has increased the value of equity by €17.5, the present value of the tax savings.

³ Present value of tax savings = $\frac{Dr_d T_c}{r_d} = DT_c$

General Case: Profit after Tax Always Positive

The above discussion implies that the firm should employ as much debt financing as possible to take advantage of the tax savings. Figure 6 is a graphical representation of the relationship between the value of the firm and the amount of debt outstanding under these assumptions of perfect capital markets with corporate taxes.



General Case: Delayed and Risky Tax Shields

The above discussion assumes that the firm can always get a tax deduction from interest payments. In practice, this is not always the case. If the firm is not profitable, it may have to carry forward tax losses. These may result in tax deductions in the future. However, the value of these tax loss carry forwards is likely to be less than an upfront tax deduction because:

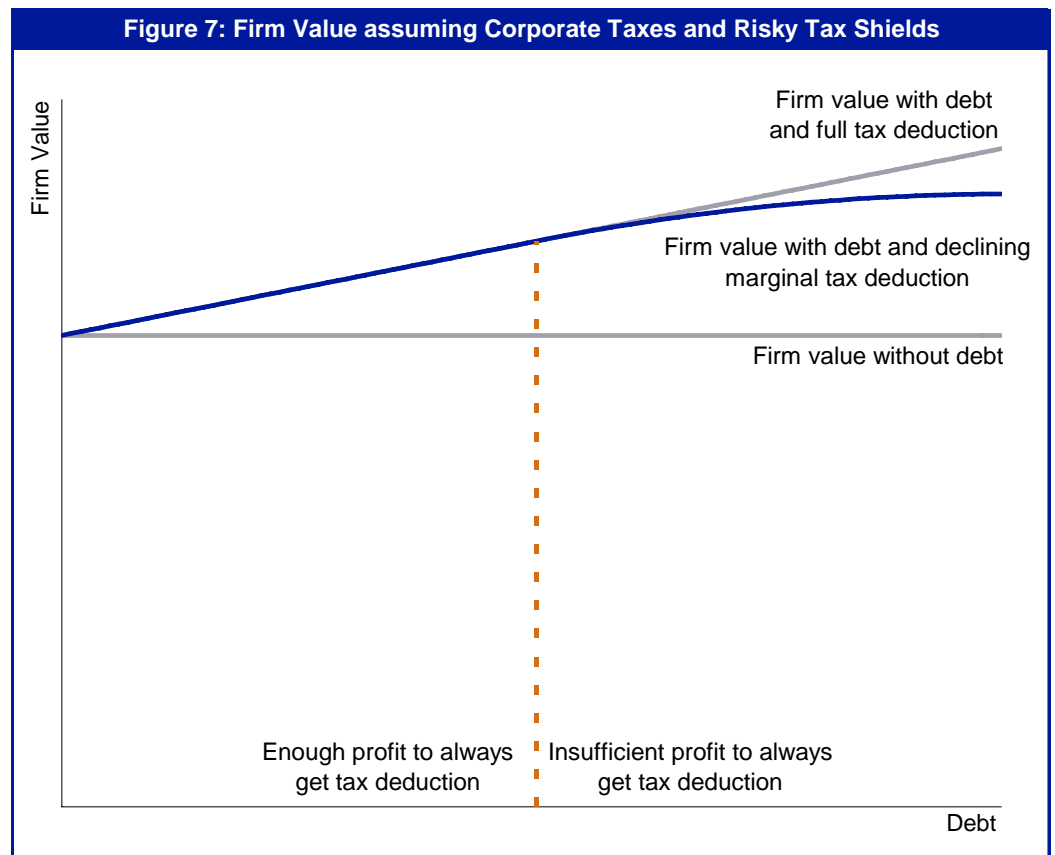
- Tax loss carry forwards do not generate any return and cannot be traded or sold
- The firm may go bankrupt before it has an opportunity to use the carry forwards. Also, in some jurisdictions the number of years a tax loss can be carried forward is limited⁴

In the above example, it is impossible to tell how this impacts firm value because we do not know the actual level of profitability of the firm, only the expected level. If the firm will always have enough profits to deduct the interest on €50 of debt [$=50 \times 7\% = €3.50$], then nothing changes. However, if there are some scenarios under which the firm does not have enough profits to obtain the tax deduction, then the value of the future tax savings declines.

Figure 7 illustrates what the relationship between the amount of debt financing and firm value looks like when the marginal benefit of debt tax deductions declines. Firm value with debt financing is the same under both scenarios as long as the firm is certain to have enough profits to always enjoy the full tax saving from deducting the interest payments. This is the case as long as the amount of debt is below the point where the dotted line hits the horizontal axis. Above that level, the firm is no longer certain to get

⁴ Also note that the more debt a firm has the longer it is likely to take to return to profitability.

the full tax shield on the interest payments and the marginal benefit of the tax deduction declines. Eventually, it becomes zero.⁵



Personal Taxes

In this section, we assume not only that tax is paid at a corporate level but also at a personal level by investors.

Assumptions

Assume again perfect capital markets, except there are both corporate and personal taxes:

- At the corporate level interest payments on debt are tax deductible (at T_c) while dividend payments on equity are not
- At an investor level
 - interest income is taxed at T_d
 - dividend income and capital gains are taxed at T_e
- There is always enough profit to make interest valuable from a tax perspective. That is, the taxable profit before interest and tax is always greater than the interest expense so that the interest leads to a proportionally lower tax bill

⁵ But never negative. If the marginal benefit is zero that means that there is no possibility that the incremental tax shield is used and hence has no additional value. Under the assumed setup (perfect capital markets + corporate taxes) incremental debt never reduces firm value.

Note that T_d and T_e can be zero. If they are both zero this case reduces to the case discussed under Corporate Taxes.

General Case

If firms include more debt in their capital structure, then the investors holding the firms' securities will receive less income on the equity of the firm and more income on the debt. These investors are concerned about their returns after paying personal taxes as well. It is therefore important to also consider personal taxes when considering optimal financing policy.

If it is the case that personal taxes on equity income and debt income are the same, then this additional complication does not affect the outcome: personal taxes do not change when equity income is substituted by debt income. However, if these tax rates are different from each other, they may affect capital structure decisions. The relationship between personal taxes and the benefits are quite intuitive. Investors will prefer to receive less income in the form that is taxed more heavily at the personal level. If debt income is taxed higher than equity income at the personal level, then investors prefer to receive less debt income.

Thus, while debt is beneficial at the corporate level because it reduces the firm's tax burden, the effect of debt income on personal taxes may further increase the benefit of debt financing, or it may reduce or even reverse the benefit. It all depends on the personal tax rates on debt and equity income.

It is possible to derive the relationship between the amount of debt outstanding and the value of the firm in the presence of both personal and corporate taxes. This yields the following relationship:⁶

$$V_{\text{Debt}} = V_{\text{NoDebt}} + D \left[1 - \frac{(1-T_c)(1-T_e)}{(1-T_d)} \right]$$

Figure 8 shows the various combinations of relative tax rates, and the incremental impact of adding more debt on the aggregate after-tax values of all claimants, conditional on the tax relationships shown.

⁶ See Appendix II for a derivation of the formula.

Figure 8: Corporate and Personal Tax Cases

Case	Condition	Description	Effect of Additional Debt
1	$T_c = T_e = T_d = 0$	There are no taxes	None
2	$T_c > 0; T_e = T_d = 0$	There are no personal taxes	Beneficial
3	$T_c, T_e, T_d > 0; T_e = T_d$	Debt and equity are taxed at the same rate. Only the corporate rate matters	Exactly as beneficial as case 2
4	$T_e > T_d$	Payments to equity are taxed twice and one of those is a higher rate than debt	Even more beneficial than case 2
5	$T_e < T_d;$ $(1 - T_c)(1 - T_e) < (1 - T_d)$	The personal taxes on equity are lower than on debt but the combined corporate and personal taxes on equity are higher than on debt, meaning debt is still attractive	Beneficial but not as beneficial as case 2
6	$T_e < T_d;$ $(1 - T_c)(1 - T_e) = (1 - T_d)$	The combined corporate and personal taxes on equity are the same as the personal taxes on debt	None
7	$T_e < T_d;$ $(1 - T_c)(1 - T_e) > (1 - T_d)$	The combined corporate and personal taxes on equity are lower than the personal taxes on debt	Detrimental

Figure 9 illustrates the gain from leverage for various combinations of tax rates:

Figure 9: Gain from Leverage at Various Corporate and Personal Tax Rates

T_c	T_e	T_d	Gain from Leverage	Case	Description
35%	0%	0%	35%	2	The gain from leverage per dollar of debt is equal to the corporate tax rate if personal tax rates are zero or equal to each other
35%	31%	31%	35%	3	
35%	15%	35%	15%	5	The gain from leverage is reduced substantially if we employ the highest tax rates on income currently applicable in the United States: a corporate tax rate of 35%, a personal tax rate on equity income of 15% (both dividend and capital gains taxes are 15%) and a personal tax rate on debt income of 35% (the highest personal tax rate bracket). In that case, the gain from leverage is reduced substantially from 0.35 per dollar of debt to 0.15 per dollar of debt
35%	10%	28%	19%	5	This row illustrates a more realistic U.S. scenario. The corporate income tax rate is still set at 35%; the personal tax rate on equity income is reduced to 10% to reflect the fact that capital gains taxes can be deferred. Finally, the personal tax rate on debt income is set to 28% because investors with higher tax rates are less likely to hold taxable debt. Setting the personal tax rates on debt to 28% assumes that investors in higher tax brackets hold tax-exempt bonds instead. Under this scenario, the value gain per dollar of leverage is roughly 0.19
30%	25%	22%	33%	4	This row illustrates a scenario more relevant to the U.K. The corporate tax rate is equal to 30%, the tax on equity income is set to 25%, reflecting the rate of dividend taxation. The capital gains tax rate in the U.K. is higher, but investors are not taxed on a fraction of the capital gain if they have a longer holding period. In addition, there is the ability to defer taxes. Finally, the tax rate on debt income is set equal to 22%, which is the second highest tax bracket. This results in a gain from leverage of roughly 0.33 per Pound of debt.

Costs of Financial Distress

The discussions in the sections on irrelevance and taxes assumed that we keep the value of the assets of the business constant as debt financing is added (with the exception of the value of the tax shield discussed above). This is unlikely to be the case, particularly if debt levels are high, so we relax that assumption in this section by assuming:

- The value of the assets declines as debt increases

We consider below various ways in which the level of debt may affect the value of the assets.

Direct Costs of Financial Distress

If the firm has so much debt that it is forced to formally renegotiate its debt or enter into bankruptcy it will incur a number of costs such as:

- Court costs
- Other legal expenses, such as lawyer fees
- Costs of consultants

These direct costs must be deducted from the value of the assets in the event of bankruptcy.

Indirect Costs of Financial Distress

As the level of debt rises, various constituents may become concerned about the ongoing viability of the firm and respond in various ways:

Management Management's focus may change from running the business to negotiating with bankers and bondholders about the terms of debt financing

Employees Employees may become worried about the future of the firm and may decide to seek alternative employment. Hiring new people will require training and the firm may have difficulty attracting new employees if the future of the firm is uncertain. This may require the firm to pay above market rates. These costs may be particularly severe if the employees are very specialized and require a lot of training before they can be fully effective or when the ability to generate a proper return on assets heavily depends on the ability of the employees

Customers Customers may become reluctant to do business with a company whose future is uncertain, and may only be willing to do so if they can pay below market prices. This is particularly the case if the firm sells ongoing services or products that may require support

Suppliers Suppliers may not be interested in establishing a working relationship with a firm whose future looks highly uncertain. They may also not extend the same payment terms extended to healthy firms or be willing to make useful customer-specific investments, such as supply chain modifications

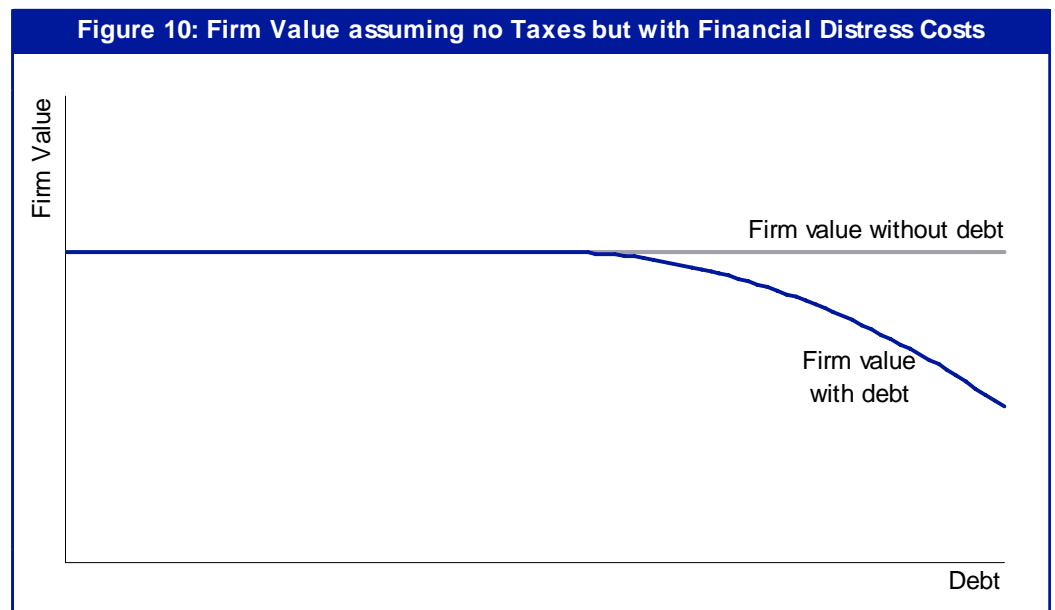
As the firm becomes more indebted the above costs, which are called indirect costs of financial distress, may become quite severe even if the firm is still able to meet its obligations and service its debt.

General Case

Combined, the direct and indirect costs reduce the value of the assets of the firm because they reduce the cash flows generated by the assets. Increasing the level of debt increases the likelihood of distress, and hence expected costs of distress. Thus, if there are no offsetting benefits associated with debt financing (i.e., if there are no taxes), firms should not use any debt. We have little evidence on the nature of costs of financial distress. However, it is likely that they:

- Are very small for low levels of debt
- Increase gradually as more debt is added
- Increase substantially at high levels of debt when the probability of bankruptcy is high

Figure 10 below illustrates the value of the firm as debt increases.



See Andrade and Kaplan (1998) for further details.

Example 4

We return to the setup of Example 1 (perfect capital markets, €50 of debt, no costs or benefits of debt) but here we assume that costs of financial distress associated with the debt are expected to reduce cash flows generated by the assets of the firm by 5%. This is illustrated in Figure 11:

Figure 11: Firm Valuation with Financial Distress Costs

With Debt	Assets		Liabilities and Equity	
		Assets	95	Debt
			Equity	45
	Total	95	Total	95

Notice that the reduction in firm value is entirely borne by the equityholders of the firm. This is the case because the debtholders will only be willing to offer new debt to the firm at a fair rate of return. Thus, they will only provide €50 of debt financing if their claim on the firm is worth €50. If, as a result of adding this debt to the firm's capital structure, the value of the firm's assets declines, this comes out of the pockets of equityholders.

Information

The previous discussion assumes that all participants in financial markets share the same information set as the managers of the firm. That is, all investors know exactly what firm management knows about the value of the firm. This is unlikely to be the case, and through various channels, this asymmetry of information between the firm (i.e., firm management) and financial markets affects capital structure decisions. This section discusses these channels and assumes:

- Corporate executives have better information about the firm than investors
- Both executives and investors are aware of this asymmetry

Signalling Firm Quality

The idea behind debt signalling is relatively straightforward:

- By issuing debt, the firm commits to make certain interest payments in the future
- Breaking this commitment will lead to financial distress and possibly bankruptcy
- Thus, firms are unlikely to commit to such a policy unless they feel confident that they can actually meet these interest payments

As such, employing debt financing is a mechanism which allows high quality firms to distinguish themselves from low quality firms. Low quality firms could not issue debt to mimic the behaviour of high quality firms because it would lead to their demise.

This idea was first formalized by Ross (1977).

It is important to stress that under this scenario, debt does not affect the true value of the firm. However, capital market participants may not be aware of the true value of the firm, and issuing debt is a mechanism employed by the firm to communicate its value to financial markets. The cost to false communication is financial distress and possible bankruptcy.

One may wonder why a firm would choose debt as a communication tool rather than press releases or other forms of communication. Clearly, the firm has many communication tools at its disposal and using debt as a communications device does not preclude the firm from using other tools as well. But the reason debt is a particularly powerful communications tool is that the cost of false communication is so high. That is, the firm putting its money where its mouth is.

Signalling Aggressive Competition

If a firm is highly leveraged, then the equityholders of the firm, who participate in all the upside but have limited downside, will prefer for the firm to engage in high risk and high return commercial activities. This suggests that firms with a lot of debt are more likely to compete more aggressively and that competitors will be more wary of firms with high levels of debt.

It is not clear what this argument implies about the optimal level of debt, however, because it is not obvious whether more aggressive competition is good for the value of a particular firm.

A converse argument, regarding possible aggressive moves by competitors when debt is high is made below under Other Factors: Effect of Competition

Access to Financial Markets and Financial Flexibility

We continue the discussion of information asymmetries but focus on the potential costs of accessing financial markets. If financial markets are as well informed as managers about the prospects of the firm and its projects, then raising money for new projects should never be a problem. Projects that add value to the firm receive financing and projects that destroy value do not receive financing. The firm can access equity markets and debt markets and will pay a fair price for both sources of financing. When capital markets are not as well informed as the firm about future prospects, these arguments may no longer be the case. We will employ a simple example to illustrate this issue. Suppose that:

- The firm's assets are worth either €90 or €110
- From the market's perspective both values are equally likely
- The firm management knows the true value (either €90 or €110) of the firm with certainty
- The firm is currently all equity financed
- The firm has identified an investment opportunity that requires €10 of additional capital but which would create €1 of additional value

Without further information, capital markets would value this firm at €100, the average of €90 and €110. Eventually, of course, capital markets will find out what true value is through earnings announcements, and other firm disclosures.

Would the above firm access equity markets? That depends on the true value of the firm:

- **True value is €90:** Given that it is currently valued at €100, it has nothing to lose. It needs to raise money for a new project and it appears that it is currently overvalued. This firm would go ahead.
- **True value is €110:** We are not sure. On the one hand, the firm needs to raise funds to take the new project. Without additional funding, the value of the project is lost. On the other hand, if the firm accesses capital markets, it will be forced to sell its shares at 'too low' a price. Clearly, some firms may not be willing to dilute their current shareholders and will therefore forego the project. This is costly because it represents a loss in value: the project is not taken.

But investors are aware of this decision logic and will use it to infer information about the true value of the firm. That is, if capital markets know that undervalued firms do not access the market, then accessing the market implies overvaluation and the stock market adjusts. In the above example, if the firm's true valuation is €90 and it announces an equity issue, its value will drop from €100 to €90.⁷ This revaluation is not a true cost, however. The firm will be able to sell equity at a fair price and it is able to take the project. In contrast, forgoing the project in the €110 case does destroy value.

To summarize, if managers are better informed than capital markets:

- Undervalued firms prefer to forego projects, rather than issuing new securities at too low a price
- Overvalued firms will issue securities, but the announcement of the issue will lead to a price adjustment

How could the above problem be avoided? It may seem that debt financing can solve the problem, but this is not necessarily the case. If the market is not well informed about the prospects of the firm, its debt will also not be fairly priced. Assume that the overvalued firm would normally pay 8% interest, the undervalued firm would normally pay 6% interest, but because financial markets cannot tell the difference between the two firms, the debt is priced at 7%. We have to ask again whether the undervalued firm would be willing to issue new debt at an interest rate of 7% if its fair interest rate is only 6%. The answer again depends on the quality of the project. There will certainly be cases where the firm is unwilling to pay the high interest rate because it turns a good project into a bad one. However, it is also the case that the mispricing of the debt is generally less severe than the mispricing of the equity. This implies that an undervalued firm might still be willing to issue debt to finance a new project, but would not be willing to issue equity.

The only way this problem could be solved for sure is if the firm had internal funds available to finance the project. In that case, no value would be foregone and valuable projects would always be undertaken.

Pecking Order Theory

In the previous section we gave an example where the costs of accessing debt markets were high and the costs of accessing equity markets were very high. We can summarise this as:

- If firms have sufficient internal funds available, they can take all profitable projects and no value is lost
- If firms have to access capital markets, they prefer to issue debt financing because debt securities are less likely to be mispriced. Firms that are severely undervalued will not access debt markets, however, because the interest rate is much higher than the fair rate
- If firms have exhausted their debt capacity, and they need more financing, they issue equity. Firms that are undervalued will not access equity markets, however, because they have to sell new shares at too low a price

How does this affect firms' long-run capital structure decisions? After all, if financial markets price firms fairly, on average, each company is as likely to be overvalued or

⁷ The market knows that the true value is either €90 or €110. The equity issuance precludes the €110 valuation and so the market can conclude that the true value is €90.

undervalued when new funds are needed. This is indeed the case, but the payoffs are asymmetric:

- Overvalued firms can always invest
- Undervalued firms sometimes choose to forego investment opportunities

Firms should therefore try to insure that the costs of having to forego investment opportunities are lowest. To do this, they should avoid accessing capital markets at all cost; if they have to access capital markets because internal funds are not sufficient, they should go for debt financing; if they cannot obtain debt financing, they should go for equity financing. This ordering of financing choices is sometimes called the *pecking order theory* of debt financing. This theory says that the costs of accessing the financial markets dominate all other factors in the capital structure decision.

Implications of Pecking Order Theory

The major implication of Pecking Order Theory is that the level of debt is not well defined. The important distinction is not between debt and equity but between internally generated funds, and accessing capital markets.

The implication for corporations is very simple. If the market is not well informed about the prospects of your firm then your debt is likely to be undervalued and your equity is likely to be undervalued even more. You should, therefore:

- Finance as much of your investment as you can internally
- If you have more investment needs, issue debt, unless the interest rate on the debt is so high that it makes the new investments look bad
- If you have borrowed as much as you can and you still have investment needs, issue equity, unless you have to sell the new shares at such a low price that it makes new investment look bad

The major empirical implication is that more profitable firms should have less debt because they do not need outside financing.

Flexibility

This discussion also provides the theoretical foundation for the argument employed by some firms that their capital structure is driven by the need for financial *flexibility*. Flexibility implies being able to move quickly. However, many firms can access capital markets quickly because they have financing programmes set up. Even those firms that need more time may be able to estimate future financing needs ahead of time. The flexibility argument is therefore hard to justify theoretically, unless firms want to protect themselves from having to issue securities at unfavourable conditions. While it may be relatively easy to estimate future financing needs, it is impossible to determine whether the market will value the firm fairly when the funds are actually being raised. Having the flexibility to make investments when the need arises, and knowing what the exact cost of the funds is, can be very valuable. In industries where opportunities arise quickly and need to be taken quickly, this type of flexibility could be quite valuable, especially in M&A situations.

Flexibility does not only refer to the ability to make investments quickly, it also refers to the ability to continue the firm's dividend policy in case available funds are temporarily low.

In terms of the relationship between firm value and the amount of debt financing, if more debt financing *now* prevents the firm from making investments *later*, there would be a negative relationship between firm value and the amount of debt, not dissimilar to the relationship described in the section on financial distress. In fact, one could argue that the loss of flexibility due to debt financing is a distress cost.

Inertia

The previous discussions, including those on the pecking order theory, assume that capital structure is a result of evaluating the costs and benefits of debt. The tradeoff theory compares the benefits of the tax shield on debt with possible costs such as financial distress, while the pecking order theory says that the cost of accessing the markets is so high that it dominates the financing decision.

There is one other possible approach, which is simply not to have a policy at all and to only access the capital markets when the need arises.

One interesting observation is that it is virtually impossible to distinguish between firms that truly follow the pecking order theory and those who have no policy at all [see Welch (2004)].

Managerial Self Interest

Some observers, Michael Jensen (1986) being the most prominent, have argued that managers often prefer to grow the firm beyond its optimal size. This may be the case because they have the wrong compensation contract, based on some measure of firm size, or because they derive some private utility from running a large business. If this is the case, then managers may invest in projects that increase firm size, but have a negative impact on shareholder value.

A firm with debt financing is prevented to some extent from engaging in this managerial self-serving behaviour because the cash flows generated by the assets of the firm cannot all be reinvested. Instead, they need to be employed to service the debt. This is valuable if their alternative use was in a project that destroyed value for shareholders. Debt thus serves as a bonding device on the part of managers, where they commit themselves not to overinvest.

It is important to note, however, that this argument does not affect the level of debt unless there is some type of asymmetric information as outlined above. Otherwise, the manager who wants to grow the firm beyond its optimal size would simply access capital markets to raise more financing. Something must be preventing the managers from doing so, while at the same time they are willing to spend internal cash flows freely. One possibility is that it is more difficult to raise funds for poor projects or that capital markets will take a closer look at the firm and its management when new funds are being raised. This is not a problem for managers who are maximizing value for the firm's investors, but it could cause problems for managers who are misallocating shareholder money instead. For example, more scrutiny from financial markets could lead to scrutiny from the board, and could lead to dismissal.

Positive Impact of Debt on Managers

The managerial self-interest argument implies a positive relationship between firm value and the amount of debt outstanding. Debt increases the value of the assets of the firm because it prevents managers from wasting resources. This is only part of the argument.

Not only will debt prevent managers from misallocating resources, it will also force managers to run the current operations more efficiently so that funds are available to service the debt. Finally, it will lead managers to carefully examine whether the current assets are the most valuable in the current corporate structure or whether they would be worth more if sold off.

Several articles have found evidence in support of the disciplinary role of debt [see, among others, Kaplan (1989) and Denis and Denis (1993)].

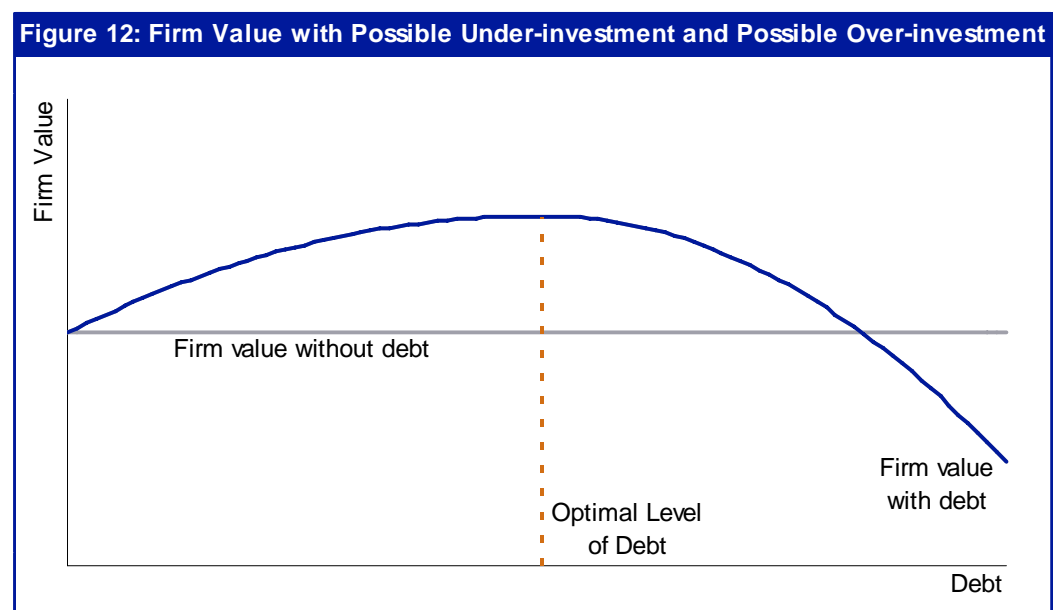
Negative Impact of Debt on Managers

The above discussion suggests that adding debt adds value to the firm because it forces the firm to operate more efficiently and to only take projects that add value to the firm. There is a flip side to this argument, however. As the firm adds more debt, it will not only cut projects that do not add value, but may also have to start cutting projects that do add value because the funds will be needed to service the debt. The argument that debt may crowd out good investment was first made by Myers (1977).

Thus, while debt may prevent firms from making bad investments, it may also prevent them from making good investments. Thus, the optimal amount of debt is chosen to minimize the joint costs of overinvestment and underinvestment [see Stulz (1990) for a model formalizing this tradeoff]. Empirical evidence for the fact that debt may sometimes prevent firms from investing optimally is found in Peyer and Shivdasani (2001). The fact that debt may sometimes prevent firms from making good investments is also another theoretical motivation for the flexibility argument.

General Case

Figure 12 illustrates the relation between firm value and the amount of debt outstanding based on the above arguments if we assume that the firm with no debt has more funds available for investment than projects to invest it in. In that case, firm value first increase with the amount of debt outstanding as the debt prevents the firm from taking poor projects. At some point, value decreases as debt now also constrains the firm from taking projects that add value. Notice that this effect can be so severe that firm value with debt declines below the value of the firm without debt.



This figure assumes that the firm with zero debt has more funds available than required to fund all projects that add value to the firm

Mispricing/Sentiment

Assume perfect capital markets except that:

- Investors and markets are not fully rational so that debt and equity securities are subject to mispricing

Firms may adjust their capital structure to take advantage of this situation. We will first discuss mispricing in the debt market, followed by mispricing in the equity market.

The Interest Rate is Not Fair

If debtholders require an interest rate that is not a true reflection of the risk they are incurring, then the amount of debt financing may matter for the shareholders of the firm. If the interest rate is 'too low', then debtholders are essentially subsidizing equityholders. Equityholders should take advantage of such a situation by borrowing as much as possible at the subsidized rate.

While we would encourage firms to try and find this form of subsidized borrowing, we do not believe that there are many opportunities to borrow at below market rates.⁸

If the debt is truly subsidized, the actual market value of the debt will decline to reflect the interest rate which is too low. The value of the equity will increase to reflect the value of the subsidy. Thus, while the value of the firm as a whole remains unchanged, it will be beneficial for equityholders to exploit this subsidy.

Figure 13 illustrates the valuations, using the set-up from Figure 2.

With Debt	Assets		Liabilities and Equity	
	Assets	100	Debt	<50
		Equity	>50	
Total	100	Total	=100	

Conversely, it is possible that interest rates are deemed too high compared to what a fair rate of return should be. Some researchers have noted that traditional debt pricing models have not been able to explain the credit spread charged on publicly traded debt [see, for example, Eom, Helwege, and Huang (2004)]. This problem appears to be particularly severe for investment grade debt, where the default risk is small, but spreads are comparatively substantial. Most researchers see this as a failure of the models employed to price debt, not an inefficiency in the market. However, if it is an inefficiency, then companies should shy away from debt financing because it is too expensive. As a result, the cash flows available to reward shareholders are insufficient to properly compensate equityholders and the value of the equity will decline.

The following figure illustrates the valuations, using the set-up in Figure 2.

⁸ However, see Eom, Helwege, and Huang (2004) for evidence that some structural models of debt pricing predict debt spreads above the actual spreads, which would be consistent with a low borrowing rate.

Figure 14: Firm Valuation with Debt Financing if the Interest Rate is Too High

With Debt	Assets		Liabilities and Equity	
	Assets	100	Debt	>50
			Equity	<50
Total	100	Total	=100	

Debt Financing Leads to Equity Mispricing

The first possibility is that the market, for whatever reason, chooses to value firms with debt at a premium or a discount. That is, the market believes that firms with debt financing are more or less valuable than they truly are. These types of arguments are often grouped under the term: *market sentiment*. If firms trade at a discount because of debt financing, then debt should be avoided, unless there are some offsetting benefits. If firms trade at a premium because of debt financing, firms should take advantage of this situation. The following figures show the possible outcomes.

Figure 15: Firm Valuation with Debt Financing if Market Punishes Debt

With Debt	Assets		Liabilities and Equity	
	Assets	<100	Debt	50
			Equity	<50
Total	<100	Total	<100	

Figure 16: Firm Valuation with Debt Financing if Market Rewards Debt

With Debt	Assets		Liabilities and Equity	
	Assets	>100	Debt	50
			Equity	>50
Total	>100	Total	>100	

It is important to understand the nature of causality in this setup. Basically, firms are fairly valued in the absence of debt financing, but, for whatever reason, the market rewards or punishes the firms when debt enters the capital structure.

At this point, we are not aware of empirical evidence in support of this misvaluation argument and would urge firms to be cautious when applying this rationale in the decision to increase or reduce debt financing. This is particularly the case, because the sentiment in favour or against debt may turn around quite quickly. Firms should not make long-term decisions based on potentially short-term irrationalities in the market.

If Equity is Valued at a Premium or Discount

A second possibility unrelated to sentiment about debt financing or the pricing of debt is concerned with the market's valuation of the firm's equity. Suppose that a company's equity is currently overvalued by the market. If such a firm needs external financing, it may well decide to go for equity financing to exploit this misvaluation. This will tilt the firm's capital structure away from debt financing and toward equity financing.

Similarly, if a firm's equity is undervalued by the market, one would expect the firm to tilt its capital structure away from equity financing. Recent evidence by Baker and Wurgler

(2002) suggests that this attempt by firms to time the market when issuing equity has a long-term impact on the firm's observed capital structure, but this evidence has not been universally accepted [see Hovakimian (2005)].

Other Factors

Transaction Costs

There are transaction costs associated with debt issuances. When the firm issues debt to the public, these costs are quite explicit—there are underwriting spreads and registration and legal fees [see Lee, Lockhead, Ritter, and Zhao (1996)]. When the firm employs bank debt, there may be explicit fees or the fees may be reflected in the interest rate. These costs may make debt financing less attractive. Of course, when the firm considers accessing the equity market, these costs are even more substantial as a fraction of the amount of money raised. However, when choosing between internal finance and issuing debt, transactions costs may well be important.

Costs of disclosure are another type of transaction costs, which may deter some firms from accessing public markets. If firms are private and unwilling to access public markets, then bank debt financing may be the only available source of outside financing. Such firms may have more debt than we would otherwise expect.

Creditor Rights

When a firm gets into financial distress and bankruptcy, the ability of creditors to recover their funds depends on the laws and regulations in effect in the country in which the firm is operating. In fact, research suggests that credit markets are larger in countries where creditors are better protected [see La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997)].

If creditors are better protected, they are likely to recover more in case of default, which also implies that they may be willing to charge a lower interest rate in normal circumstances. We already discussed the level of interest rates relative to fair rates in previous sections, so that it is not clear why there would be an independent creditor rights effect. Given the evidence on the relationship between the size of credit market and creditor rights, this may be an important consideration in the mind of managers.

There is also an alternative argument. If creditors' rights are well protected, it is more difficult for managers to recover anything from creditors in distress situations. While this should be reflected in the interest rate, it is possible that this discourages firms from issuing debt.

While creditor rights may affect the amount of debt employed by the firm, this argument does not make a prediction about the relation between the value of the firm and the amount of debt outstanding.

Control

If the firm accesses the equity market, the ownership stake of existing shareholders gets reduced, unless existing owners participate pro rata in the offer. This is not always possible because existing shareholders may not be able or willing to increase their investments in the firm. If management wants existing equity holders to maintain control, a firm may therefore decide to finance additional investments with debt if internal funds

are not available. These companies may have more debt than would otherwise be expected.

A desire to maintain certain levels of control is likely to increase the amount of debt employed by the firm. It is not clear, however, whether that debt increases or decreases firm value.

Effect of Competition

When discussing the signalling implications of debt financing, we argued that firms with more debt may compete more aggressively, because they have little to lose when performance is poor.

There is a counterargument, however, which is that highly indebted firms are weaker competitors. As a result, other firms in the industry with less debt or better access to capital may temporarily lower their prices to drive the highly indebted firm out of the market. This deep pockets or predatory pricing argument dates back to Telser (1963). This is clearly a drawback to debt financing and suggests that the amount of debt financing employed by the firm should depend on the level of competitiveness in the industry, with more debt in industries that are less competitive.

This competition argument also justifies targeting a level of debt similar to that of the other firms in the industry.

Bargaining with Stakeholders

Debt financing may put firms in a stronger bargaining position with other stakeholders in the firm, and employees in particular. Perversely, by weakening the firm—and committing to pay more out to debtholders—the firm can more credibly resist demands by other stakeholders. The results of recent renegotiations with employees in the airline sector, particularly in the United States, suggests that distressed firms are able to get substantial concessions from their employees when the formal threat of bankruptcy filing is looming.

Summary

A firm could use three methods to determine its capital structure:

- **Trade off Theory:** There are various costs and benefits associated with debt financing. We would expect firms to trade off these costs and benefits to come up with the level of debt that maximizes the value of the firm or the value accruing to those in control of the firm. The most significant are listed below, together with the impact on the optimal level of debt. ↑ indicates that the factor is a benefit of debt and leads to a higher optimal debt level, while ↓ indicates a cost of debt that reduces the optimal level. For some factors the impact is not clear and these are indicated as ↑/↓

Variable	Effect on level of debt
Taxes	
Corporate tax rate	↑
Personal tax rate on equity income	↑
Personal tax rate on debt income	↓
Financial Distress Costs	
Direct	↓
Indirect	↓
Debt Mispricing	
Interest rates on my debt are too low	↑
Interest rates on my debt are too high	↓
Positive market sentiment towards debt financing	↑
Negative market sentiment toward debt financing	↓
Information	
Signalling firm quality	↑
Signalling aggressive competition	↑
Flexibility	↓
Access to capital markets at fair price	↑/↓
Costs of excess investment	↑
Costs of underinvestment	↓
Other	
Transaction costs	↑/↓
Creditor rights	↑/↓
Control	↑
Competitiveness of the industry	↓
Improved bargaining ability	↑

■ **Pecking Order Theory:** The pecking order theory of capital structure says that firms do not have a target amount of debt in mind, but that the amount of debt financing employed depends on the profitability of the firm combined with its investment needs. Firms will use funds in the following order until that source is exhausted or the cost of that source becomes too high:

- Retained Profits
- Debt Financing
- Equity Financing

The theoretical justification behind this argument is that access to capital markets is so expensive that it totally dominates all other factors. This is only true if there are very significant information asymmetries

■ **Inertia:** The final view of capital structure is that the debt/equity choice is mainly driven by inertia. If firms only raise outside financing when needed, the observed behaviour may be very similar to that which would emerge if firms follow the pecking order theory. However, the decision is not driven by the worry about flexibility or cost of access, but by the fact that this is the easiest outcome—i.e., this argument suggests that firms follow that course of action which takes the least effort

Practical Considerations

In this section, we discuss a number of factors for which there is little theoretical justification, but which may well be very important when determining debt in practice.

Credit Ratings

Many companies care about their credit rating. A survey by Graham and Harvey (2001) on U.S. companies suggests that credit ratings are the second most important factor in deciding on the optimal capital structure.

It is difficult to disentangle whether credit ratings are important per se, or whether they merely reflect or proxy for other important issues, such as:

- **Reflecting the rate charged on its debt.** Ratings reflect credit risk, which in turn drives promised yields on debt instruments
- **Reflecting the ability to access markets.** The market for low-rated debt can sometimes appear to “dry up” in certain environments, reflecting supply and demand conditions. Managers may use debt rating as a measure of their access to timely debt capital. In the extreme, firms that seek to fund themselves using Commercial Paper face very constrained markets if they fail to maintain a rating in the highest “prime” categories (A/A2). This constraint is attributed to regulation that prevents the major purchasers of commercial paper—money market mutual funds—from holding all but minimal amounts of non-prime commercial paper
- **Reflecting the likelihood of financial distress.** As debt ratings reflect an issuer’s ability to make principal and interest payments, they implicitly capture the inability to do so—i.e., the likelihood of financial distress

The Market’s Capacity for the Firm’s Debt

In perfect capital markets, firms can always raise as much capital as they want at a fair price. We have also considered situations in which firms can raise capital, but perhaps at prices that management would consider less than fair. Managers often fear that in certain market conditions, credit rationing may occur and they may be unable to raise the amount of debt they need in a timely manner. For example, in times of market crisis, it may be difficult to raise a substantial amount of funds in a timely manner. Similarly, in the tumultuous late 1980s, it was difficult to raise non-investment grade funds. In our survey, we ask whether these types of considerations affect how firms think about their target debt structures.

The Ability to Manage Earnings Per Share (EPS)

Managers have long worried about the implications of earnings on share price and market value, but much academic research has largely dismissed these concerns. Under efficient markets, information is impounded in markets, and it was thought that markets would see through arbitrary accounting decisions. However, recent work, including that by Graham, Harvey, and Rajgopal (2005) has stressed that executives are very concerned about the effect of their decisions on reported EPS.

If executives are concerned about both the level of reported EPS as well as its change from year-to-year, capital structure choices can be used to manage earnings. Firms that

are not meeting EPS targets can repurchase shares, thereby increasing reported EPS. The effect of the share repurchase will be to increase the firm's debt/equity ratio. These shares can be sold again when the firm has exceeded its EPS target. Similarly, the firm can issue and retire debt to manage its EPS numbers.

The Definition of Debt

The previous discussions use the term debt rather generically. In general, we consider any obligation by the firm as debt. Much of the previous discussion focuses on interest-bearing debt and not, for example, trade debt. However, trade debt is an important source of financing for many corporations [see Petersen and Rajan (1994)]. In addition, a number of firms hold substantial cash balances. Do firms consider these cash holdings to be negative debt?

In the survey, we explicitly ask executives what variables are covered by their definition of debt, including:

- Long-term maturing in one year
- Short-term debt
- Trade debt/accounts payable
- Other current liabilities
- Capitalized operating leases
- Unfunded pension liabilities
- Cash holdings (negative debt)
- Associated debt-related derivatives

Another question is how do firms think about debt in their firms? Do they look at debt as a stock measure or as a flow measure? That is, do they measure debt relative to equity or the enterprise value of the firm or do they measure debt as the interest obligations relative to fund available to meet those obligations? Of course, it is possible that the measure used depends on the circumstances. We ask executives what primary and secondary measures of debt they employ when determining the target level of capital structure.

Summary

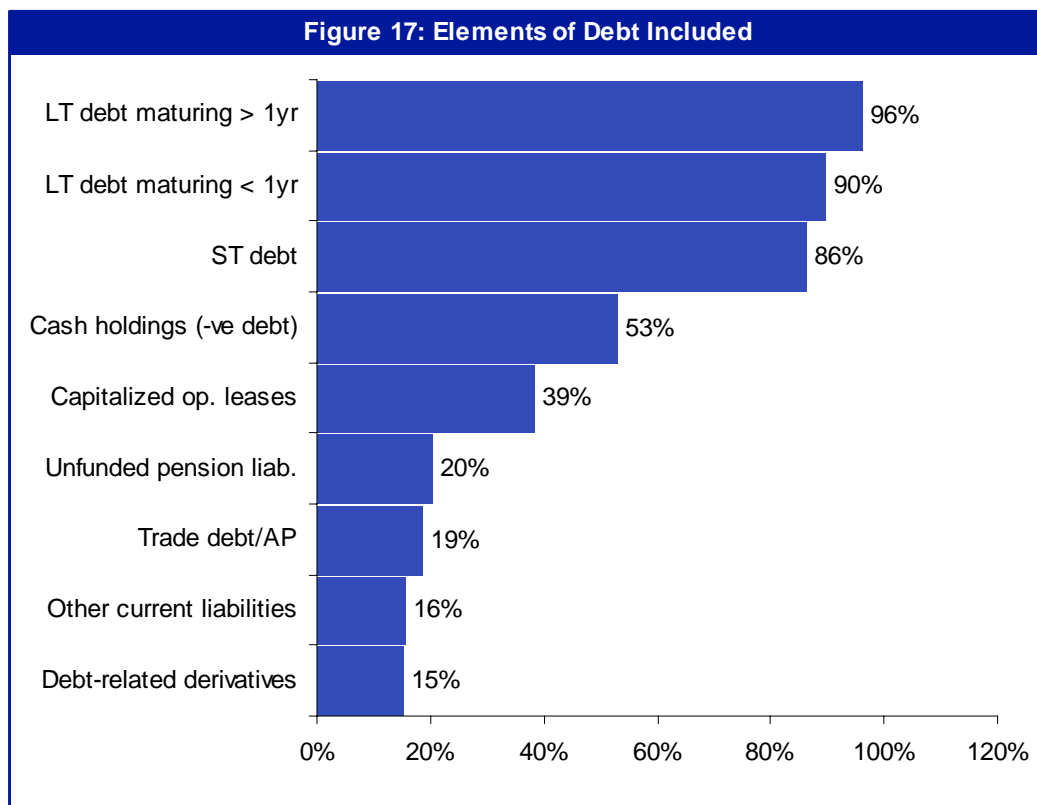
- The firm's credit rating is an important communication tool and previous research has shown that many companies consider it important in capital structure decisions
- In practice, firms may be concerned about their ability to access markets and their ability to achieve fair pricing, these concerns often feed into their capital structure decisions
- Earnings per Share (EPS), while irrelevant from a strictly theoretical perspective, are often actively managed by firms and debt has an impact on the level and volatility of EPS

Survey Results

In this section we present the results of the survey pertaining to capital structure.

Defining Debt

To start the capital structure section of the survey, we asked the respondents to provide details on which elements of debt they include for capital structure purposes. The following figure summarizes the findings.



Q3.1: "Which of the following do you include when you measure the level of "debt" for Capital Structure purposes?" N = 262.

Several interesting results emerge. First, there is a clear dichotomy between two groups of instruments. Most firms include long-term debt (whether it is maturing within one year or not) and short-term debt into their definition of debt for capital structure purposes. The other instruments receive much less attention. The one exception is cash: about half the companies consider cash as a negative component of their debt levels; the others do not. Finally, only 15% of companies include the derivatives associated with debt into their measure of debt for capital structure purposes.

What does this mean? Clearly, the traditional view of debt financing dominates, which suggests that firms only consider an instrument to be debt-like if it is associated with an explicit interest cost. This may partly be the case because the interest cost is actually a driving force behind the choice of the instrument because the associated tax shield increases firm value. However, such a consideration should also be important for

capitalized operating leases. It is therefore surprising to find that these are only included by 39% of the companies⁹.

The fact that trade debt is not considered “debt” by 81% of firms suggests that it is considered part of working capital, and generally not something firms actively manage when making capital structure decisions.

Another motivation behind the firm's decision as to which categories of debt to include and exclude is the view taken by rating agencies. While ratings agencies often consider the other categories of debt, the only ones always taken into account are short-term and long-term debt.

About half of the companies consider cash to be negative debt. These are likely to be firms which have relatively easy access to capital markets, and who, as a result, do not need to hold on to cash to meet future contingencies.

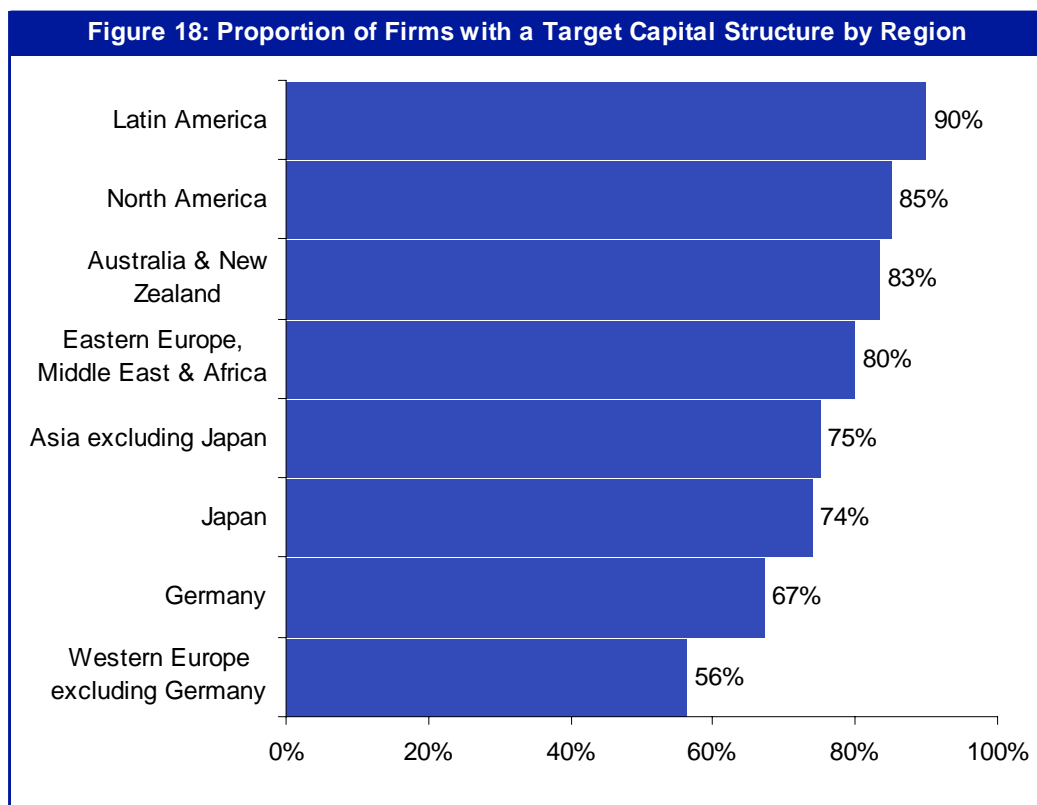
When analyzing the results by industry and region, few significant differences emerge. These results are therefore robust across countries and industries. One exception is the transportation section, where 69% of all companies consider operating leases part of debt. This is an industry where leases make up a large part of the property, plant, and equipment.

Do Firms Have Target Capital Structures?

While all firms have to make a judgement as to how much debt financing they are willing to use at each particular point in time, we wanted to find out whether firms arrive at their current level as the by-product of other decisions (such as investment decisions, mergers, and dividend policy) or whether they have a clear target capital structure in mind. The tradeoff theory of capital structure suggests that firms trade off costs and benefits of debt financing and come up with a target level, which they strive to maintain. This does not imply that the firm never deviates from the target, but the target should ultimately guide financing decisions over the long run. The alternative ‘model’ is the pecking order theory, which assumes that the cost of raising external financing is so high that it dominates financing choice. As a result, the observed capital structure is usually the by-product of other decisions.

The results are surprising. Overall, only 68% of the respondents have a target capital structure. Moreover, there are substantial differences across regions. Figure 18 illustrates what fraction of firms has a target capital structure by region.

⁹ Of course, some companies may have limited operating leases and not consider them material enough to include in their definition of debt. A similar argument applies to unfunded pension liabilities and debt-related derivatives.



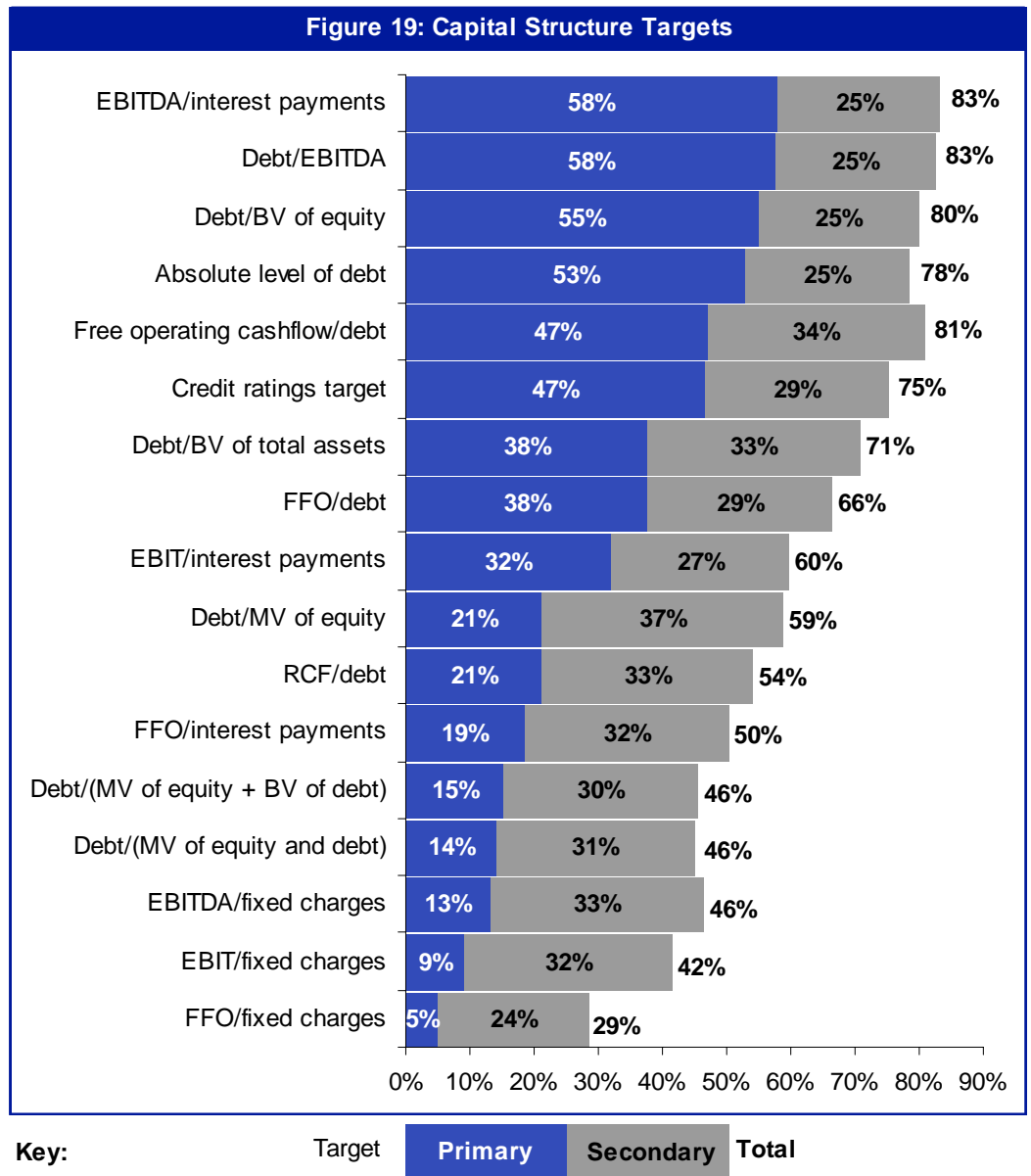
Q3.3: "Do you have a target capital structure?" N = 260 overall. See Appendix III, Q3.3 by Region, Ratings and Listing for breakdown of N by region.

In Western Europe and Germany between half and two thirds of firms have a target capital structure while in the Americas 85% of firms have one.

These results are not fully consistent with pecking order concept that firms do not target a specific capital structure when the costs of raising external financing are higher. On one hand, capital markets, and in particular bond markets, are still less developed in Europe than in North America. On the other hand, bond markets are also less developed in Latin America, and firms in this region are most likely to have a target capital structure. Thus, while in Europe capital structure is more the by-product of other firm decisions, the exact factor driving this decision is not known.

Defining the Target

Do companies with targets select leverage ratios of some sort (which represent the levels of debt) or coverage ratios (which focus on debt service flows) or hybrid measures? For leverage ratios, do they use book or market values of debt? Against what do they compare levels of debt or debt service? We asked companies what they employed as their primary and secondary measures and which measures were never employed. We did not limit the number of different measures companies could list as primary or secondary measures. The following figure lists the different debt measures, together with the proportion of respondents who list each measure as one of their primary or secondary measures. Respondents could select more than one primary or secondary measure.



Q3.4: "Which of the following measures do you use to determine your target Capital Structure?"
 N = 140 - 156. See Appendix III, Q3.4 for a breakdown of N by target.

None of the measures receive universal support. Different companies appear to use different measures as debt targets. Four measures are employed as primary measures by more than half of the respondents:

- EBITDA to interest (58%)
- Debt relative to EBITDA (58%)
- Debt to book value of equity (55%)
- Absolute level of debt (53%)

The two highest ranked measures—selected by 83% of firms—compare interest and the book value of debt to a common measure of cash flow (EDITDA). Clearly both debt service and debt levels are of paramount concerns, but cash flow is the key metric by which both are evaluated, implying that liquidity considerations may trump solvency considerations. We believe that this is the case because:

- Firms that cannot deal with liquidity problems may eventually become insolvent
- Rating agencies place greater emphasis on flow measures

Not all of the evidence supports the above interpretation, however, because relatively few of the respondents compare their profit flows to all fixed charges. For example, only 14% of the companies in our analysis indicate that they target the level of EBITDA relative to fixed charges, which includes payments other than interest. It is of course, possible that fixed charges, other than interest, are of little importance to most firms.

Given that flow measures such as EBITDA are quite volatile over time, using ratios that involve flow measure also implies a lot of planning, foresight, and continuous monitoring of both the ability to adhere to a target and the merits of having such target in the first place.

The traditional leverage ratio of the book value of debt divided by the book value of equity was nearly as popular as the EBITDA-based measures, selected by 80% of all firms and used as a primary target for 55% of firms. This measure has the virtue of simplicity and easy comparability, and may also be important if various contracts (such as bond or loan covenants) were keyed off of it.

What is also interesting is that more than half of the respondents also employ the absolute level of debt as a primary measure. There is little theoretical reason for pre-specifying a fixed amount of debt: as the business grows, the amount of debt should also be allowed to grow. However, a pre-specified maximum level of debt may be a good communications tool with investors and may help guide the company's board. It could also be useful if the firm currently exceeds this level and uses it to guide its debt reduction programme.

We also note that 47% of the firms use a credit ratings target as a primary measure.

Only one third of the companies use the ratio of EBIT relative to interest payments as one of their primary debt measures. It is surprising that this measure is not employed more often, because there is a direct link between high EBIT/interest and the ability to enjoy the full tax benefits of debt financing. If firms primary aim in financing debt were to gain tax advantages, this measure would seem useful to ensure that there is sufficient EBIT against which can be offset by interest payments to reduce taxes.

Finally, firms are more concerned with book value than market value measures. Only one fifth of the companies specify debt to the market value of equity as a primary measure, while other measures involving market values are even less important. This may reflect various factors: the market value of equity is volatile; as we report in our paper [CFO Views](#), managers find it often "incorrect"; and finally, many of our sample firms were not publicly traded.

There are some modest differences in the choice of primary measures around the world. Figure 20 shows the regional ranking of the measures. A full regional breakdown is available in Appendix III, 3.4 by Region.

Figure 20: Ranking of Capital Structure Targets by Region

Target	All	Asia excluding Japan	Germany	Japan	Latin America	North America	Western Europe excluding Germany
EBITDA/interest payments	1	3	5	8	1	1	2
Debt/EBITDA	2	7	1	8	2	2	1
Debt/BV of equity	3	1	2	5	3	7	3
Absolute level of debt	4	2	3	5	8	3	5
Free operating cashflow/debt	5	8	6	1	4	6	5
Credit ratings target	6	5	3	4	4	4	8
Debt/BV of total assets	7	4	7	2	11	14	9
FFO/debt	8	11	8	8	8	5	4
EBIT/interest payments	9	5	9	8	11	8	7
Debt/MV of equity	10	9	13	7	4	13	13
RCF/debt	11	13	11	3	15	11	10
FFO/interest payments	12	11	10	14	8	14	11
Debt/(MV of equity and debt)	13	10	14	12	13	9	16
Debt/(MV of equity + BV of debt)	14	14	14	12	7	14	15
EBITDA/fixed charges	15	15	12	14	15	10	12
EBIT/fixed charges	16	15	14	14	15	12	14
FFO/fixed charges	17	17	17	14	13	17	17

Q3.4: "Which of the following measures do you use to determine your target Capital Structure?"

The regions Australia & New Zealand and Eastern Europe, Middle East & Africa are excluded because the sample sizes are too small

See Appendix III, Q3.4 for a breakdown of *N* by region.

Debt relative to EBITDA is in the top two primary measures throughout the world, except in Asia.

Asia, excluding Japan Debt to book equity and the absolute level of debt are the two most important primary measures, with 75% and 71% of the respondents listing these as their primary measures.

Japan The ratio of free operating cash flow to debt is listed most often as a primary measure (64%), followed by debt relative to the book value of assets (62%). The first seven measures listed by Japanese companies do not consider interest payments or fixed charges. Instead, they focus on the level of debt relative to either profit or asset measures. The lack of the importance of interest-based measures is perhaps not surprising in Japan, because the low level of interest rates may make targets based on interest commitments less useful. What is surprising, however, is that the ratio of debt to EBITDA receives only about the same weight as the ratio of

EBITDA to interest payments.

Deciding on the Level of Debt

This is perhaps the key question in this part of the survey. As outlined in previous sections of this article, there are many theoretical reasons for choosing a certain level of debt. However, in practice, it is less clear which factors firms consider most important in setting their level of debt. We probe the debt decision from two perspectives. First, we ask about the level of debt—which elements do firms consider when they think about how much debt to have. Second, we ask about incremental decisions: what factors prevent them from adding more debt or more equity to their capital structure. Together the responses to these questions provide insight into the thinking behind the capital structure choices of corporations around the world.

We listed 20 factors derived from corporate finance theory and asked respondents to indicate on a six point scale how important each factor was in their decision about the appropriate level of debt. Respondents could select from a range that included *Not Important* (0) through *Very Important* (5). The following figure lists all the factors and the fraction of companies marking this factor as either a 4 or a 5.

Figure 21: Factors in Determining Level of Debt

Factors	% 4 or 5	% 4 or 5	N
Credit rating		57%	252
Ability to continue making investments		52%	253
Tax shield		32%	256
Ability to maintain dividends		31%	254
The market's capacity for my debt		29%	248
Transaction costs on debt issues		25%	252
Other companies in industry		20%	250
Credit spread relative to fair spread		18%	246
Competitor actions when debt is high		18%	248
Ability to manage Earnings per Share		17%	246
Other companies in rating category		16%	246
Supplier attitudes		15%	255
Customer attitudes		13%	253
High debt => efficient management		8%	248
Shareholders maintaining control		7%	243
Investor taxes		6%	246
Debt signals high quality		6%	246
Creditors rights in home jurisdiction		5%	244
Signalling to competitors		5%	249
Employees attitude to high debt		4%	255
Debt improves employee bargaining		0%	247

Q3.2: "How important are the following factors in determining the appropriate level of debt for your company?" Scale is Not Important (0) to Very Important (5).

Two factors stand out with scores above 50%: the credit rating (57%) and the ability to continue making investments when debt service is high (52%).

Credit Rating

The result on the credit rating is surprising, because there is no theoretical reason to believe that a credit rating, by itself, is important. It is clear that having a high credit rating may make it easier for the firm to conduct business, but our aim was to explicitly exclude that line of reasoning by asking about the credit rating, independent of any other factor [the exact wording for this option was "Credit Rating (independent of any other factors)" and it was listed after related options]. These findings indicate that companies care about the rating, per se. Further work is required by finance theorists to investigate why this might be the case. A discussion of whether CFOs see their assigned ratings as fair is in our paper [CFO Views](#).

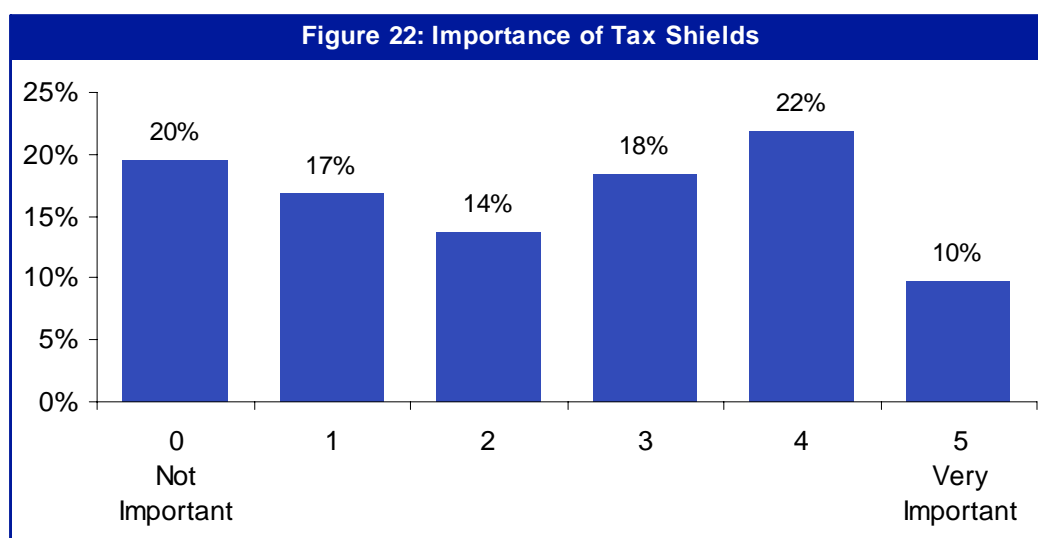
Ability to Continue Making Investments

The fact that *Ability to continue to make investments* was the second highest-ranked determinant of debt levels suggests that many firms are worried about their ability to

obtain further financing when they have issued a lot of debt already. In other words, they want to maintain investment flexibility. This answer also sheds light on the results of an earlier survey which focused on US companies only [see Graham and Harvey (2001)]. In their survey, executives ranked flexibility as the main driver of capital structure policy, but were never asked what was actually meant by flexibility. This survey indicates that one element of flexibility, namely the ability to continue investing, is very important. Another element of flexibility is the ability to continue making dividend payments. This factor is also important, with 31% ranking it as either a 4 or a 5. Overall though, firms are more concerned about their continued investment than about their continued ability to make dividend payments. Some companies worry that if they increase debt too much, their competitors will make aggressive moves, albeit that only 18% classify this factor as a 4 or a 5.

Tax Shield

Corporate tax savings rank third in importance using our ranking method, with 32% of the respondents giving it a 4 or a 5. Under the textbook tradeoff theory, tax shields are an important determinant of debt levels. As discussed in previous sections, the value of the tax savings associated with debt financing can be substantial. To examine this result more deeply we show the full distribution of responses in the figure below:



Q3.2: "How important are the following factors in determining the appropriate level of debt for your company?" Scale is Not Important (0) to Very Important (5).

Overall, tax shields are not particularly important and certainly much less important than the theory suggests. The evidence in support of tax arguments weakens further when we consider the other tax-related question: Do you consider the taxes paid by investors on interest income, relative to the taxes paid on dividend income and capital gains? Only 6% of the companies surveyed consider this factor important enough to assign it a 4 or a 5, while 55% of all companies think it is essentially unimportant (rank 0 or 1).

Other Factors

The other factors listed in the survey receive mixed support or no support at all. Interestingly, the factors with mixed support have relatively little theoretical merit, while the factors with no support are actually quite important from a theoretical perspective. 29% of the respondents think that the market's capacity for their debt is an important factor, and 25% consider the transaction costs and fees associated with debt issues to

be important. The latter result indicates that while transaction costs are low, they are not unimportant, and affect firm decision making.

Four sets of factors are not judged very important by our survey respondents:

- Distress Costs** Few companies care about distress costs, other than the loss of flexibility, which we discussed earlier. When we ask companies whether the concerns of suppliers, customers, and employees about the indebtedness of a company are important in their debt decision, the bottom line is that these factors do not really matter
- Signalling Theories** There is also little support for various signalling theories. Companies do not employ debt financing to signal firm quality to financial markets or to signal to their competitors that they will compete aggressively. Related to this, the ability to improve bargaining with employees is not important in practice
- Agency costs** Agency cost explanations have little merit – firms do not employ debt to improve the way they manage the firm's assets
- Control** Finally, firms do not issue debt to allow large shareholders to remain in control. If control is important, firms must be employing other mechanisms to maintain control in the hands of large shareholders (e.g., dual class shares)

While firms often benchmark themselves against others, the survey respondents profess to place relatively little emphasis on this information in setting their capital structures. Its average ranking is 2.2, 20% of the firms rank it in the highest two categories and 29% in the lowest two. This factor is more important, though, than the level of debt of other firms with the same credit rating: 16% of the respondents rank it 4 or 5, but more than double, 35%, give it a 0 or 1.

The relatively low score of the interest rate charged relative to what firms consider to be fair suggests that mispricing of debt is not that important in the capital structure decision and is consistent with the observation in our [CFO Views](#) paper that respondents generally felt that their credit spread was fair.

Regional Analysis

There are remarkably few differences in the importance of these factors across regions. The credit rating ranks first or second in every region, except for Eastern Europe, the Middle East and Africa where it only ranks 8th. We do not have a good explanation for this difference, except to note that a lot of companies in these regions have not yet obtained a credit rating. Similarly, the ability to continue making investments when debt service is high ranks first or second everywhere, except for Australia and New Zealand, where it ranks 4th.

Summary

Overall, credit ratings considerations and a strong preference to maintain flexibility are the key determinants of the choice of the level of debt, even when considering credit ratings independent of any other factors. Taxes are next in importance, but most firms

do not judge taxes to be important determinants of their level of debt. Practical considerations, such as the market's capacity to absorb debt, transaction costs and fees, are salient considerations. Other factors—even ones with much theoretical merit—are not considered as important by the firms in our survey

Adding Debt

We next tackle the capital structure decision from an incremental viewpoint by asking why firms do not add more debt or more equity to their capital structure. First, we ask why firms do not add more debt. The following figure provides an overview of the reasons, and the fraction of firms who indicate that these factors are very important (scoring 4 or 5 on the survey).

Figure 23: Factors in Deciding Not to Add More Debt

Factor	% 4 or 5	N
Target debt level	61%	161
Credit rating	60%	159
Financial covenants	60%	161
More debt would constrain us financially	38%	161
More debt would cause financial distress	37%	156
Credit spreads are too wide	29%	157
We cannot raise any more debt	28%	155
Not the cheapest source of financing	26%	155
Interest rates are too high	25%	161
Transaction costs	20%	161
Investors distrust our judgement	10%	153
The costs of disclosure are too high	5%	153
Investors unaware of our opportunities	5%	153

Q3.8: "How important are the following factors in your decision not to use more debt in your capital structure?" Scale is Not Important (0) to Very Important (5).

The two most important reasons follow straight from the response to the levels question. Firms do not add more debt because they have reached their target and because this would lead to a drop in credit ratings. 60% of the respondents consider these factors to be important. Equally important, about 60% of firms would not add more debt because doing so would violate financial covenants. While often underemphasized in theory, in practice, these contracts are binding constraints on firms. Some firms would probably get more debt if they had not committed to not doing so in the past.

No other factor scores above 50%, but a number of considerations are still worth mentioning.

Financial Distress

37% of all firms do not increase their level of debt because they are worried about being financially constrained in the future. The same fraction lists financial distress as a concern. This is perhaps surprising in light of the response to the level of debt question, where few firms indicated that they worried about distress costs when deciding on how

much debt is appropriate. But there is a relatively straightforward explanation for this finding. When deciding on the level of debt, distress costs are relatively unimportant because they are quite small relative to the factors firms care about: loss of a credit rating, inability to continue making investments and to continue paying the dividend, and the tax savings associated with debt financing. Once the firm has decided on its optimal capital structure, these factors have been balanced out. At the margin, changes in debt may only have a small beneficial effect on firm value, because, to start with, deviations from the optimal are small. Thereafter, the marginal distress costs are suddenly quite substantial relative to the value loss from deviating from the optimal.¹⁰

Other Factors

Four other factors are considered important by about a quarter of the companies. They are:

- Our credit spread is too wide (29% of the firms assign it a 4 or 5)
- We cannot raise any more debt (28%)
- This is currently not the cheapest source of financing (26%)
- The general level of interest rates is too high (25%)

The first and last factors in this list are worth stressing, in particular, because they receive a relatively high score on average: the argument that credit spreads are too wide receives an average score of 2.4, while concern about the general level of interest rates receives a score of 2.3. The credit spread concern suggests that firms are not always happy with the pricing of their debt by banks or in capital markets, and the feeling that they are paying too much for their debt affects marginal capital structure decisions. This concern is less important for firms when they consider the appropriate level of debt, which indicates that the concern about debt spreads is not likely to be a permanent one. Thus, companies do not believe that spreads are always too high, but only some of the time. Whether this is due to the fact that the market is not pricing the debt rationally, or the fact that firms feel the market is poorly informed about their prospects is unclear.

A substantial minority of companies are also worried about the general level of interest rates. Of course, when debt is 'expensive' because of high interest rates, equity should be expensive as well. This response suggests that some companies are actually taking a view on future interest rates. We would urge companies to exercise great care when doing so.

The fact that 28% of the firms indicate that they cannot raise any more debt is interesting. It would be hard to imagine that all of these firms are indeed completely locked out from the debt market, but it might be the case for those firms that have a low debt rating already or have not obtained a rating (yet). However, even among the firms that have an investment grade debt rating, 24% of the respondents mention that they cannot raise any more debt. We believe that this suggests that these firms feel that they cannot raise debt at competitive rates. This is also consistent with the fact that a similar

¹⁰ This explanation is similar to the one provided by DeAngelo and Masulis (1980) in their work on optimal capital structure. In his work on debt and taxes, Miller (1977) had argued that bankruptcy costs were not very important because they were small relative to the value gains from tax savings. He famously called the analysis of the tax benefits and distress costs a 'horse and rabbit' stew, where the tax savings, the proverbial horse, outweigh the bankruptcy costs (the rabbit) by so much that the result does not really have much of a distress costs flavour. DeAngelo and Masulis (1980) pointed out that when firms have already optimized their capital structure from a tax perspective, marginal bankruptcy costs suddenly become as important as marginal tax savings. It appears that the respondents to our survey have used the same line of reasoning.

fraction of the respondents feel that debt is currently not the cheapest source of debt financing.

A fifth of firms mentioned transaction costs as an important factor explaining why they did not raise additional debt. Roughly the same fraction identified this factor as important in determining their average target level of debt. Given that transactions costs are unlikely to vary much over time, they are important, on average, as well as at the margin for a substantial number of firms.

Firms are not concerned about disclosure requirements or about the fact that potential debtholders are not well informed about the prospects of the firm. Thus, for those firms that feel that their spreads are too high, this does not appear to be caused by lack of information. These firms must believe that the pricing is simply unfair.

Regional Analysis

When we study the responses across regions, we find that the three primary factors listed remain important. Figure 24 contains the results.

Figure 24: Factors in Deciding Not to Add More Debt - Regional Analysis

	All	Asia excluding Japan	Australia & New Zealand	Germany	Japan	Latin America	North America	Western Europe excluding Germany
Target debt level	61%	88%	100%	49%	50%	56%	55%	63%
Credit rating	60%	58%	60%	51%	79%	44%	87%	56%
Financial covenants	60%	83%	80%	31%	46%	67%	70%	63%
More debt would constrain us financially	38%	64%	40%	26%	40%	67%	48%	22%
More debt would cause financial distress	37%	63%	60%	26%	8%	33%	39%	37%
Credit spreads are too wide	29%	64%	0%	20%	47%	22%	26%	18%
We cannot raise any more debt	28%	61%	40%	20%	14%	11%	30%	21%
Not the cheapest source of financing	26%	64%	20%	20%	27%	33%	18%	14%
Interest rates are too high	25%	71%	0%	3%	27%	22%	22%	20%
Transaction costs	20%	68%	0%	6%	27%	0%	13%	16%
Investors distrust our judgement	10%	33%	20%	3%	7%	11%	13%	5%
The costs of disclosure are too high	5%	13%	20%	6%	0%	0%	0%	5%
Investors unaware of our opportunities	5%	14%	20%	0%	7%	0%	5%	2%

Q3.8: "How important are the following factors in your decision not to use more debt in your capital structure?" Scale is Not Important (0) to Very Important (5).

See Appendix III for *N* by region.

Worldwide, firms do not add debt to their financing mix because it would push the company above its target, have a negative effect on their credit ratings or violate covenants. However, other factors stand out in certain regions. Companies in Asia (excluding Japan), in particular, are worried about a myriad of factors. We believe that these concerns reflect sensitivities in the wake of the financial upheaval in Asia in recent times. Consistent with this view, we do not find the same level of concern in Japanese companies, which were much less affected by the Asian crisis than firms from most other Asian countries.

Adding Equity

We now turn to the question of why firms do not use more equity in their capital structure. The next figure shows the fraction of respondents marking the question with a 4 or a 5 on a scale from 0 to 5.

Figure 25: Factors in Deciding Not to Add More Equity

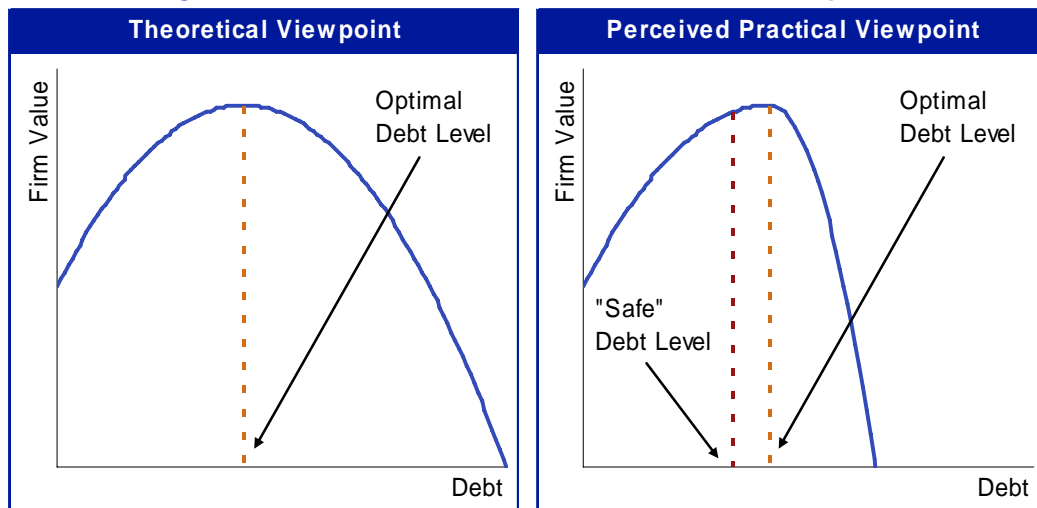
Factor	% 4 or 5	N
EPS dilution	49%	152
Not the cheapest source of financing	49%	148
Share Price	47%	152
Ownership stakes of key shareholders	41%	151
Equity is undervalued	40%	146
Debt target	28%	149
We cannot raise any more equity	20%	148
Our shares are illiquid	18%	144
Transaction Costs	17%	148
Investors distrust our judgement	9%	141
The costs of disclosure are too high	7%	143
Investors unaware of our opportunities	6%	144

Q3.9: "How important are the following factors in your decision not to use more equity in your capital structure?" Scale is Not Important (0) to Very Important (5).

No single factor receives overwhelming support. However, several findings do stand out.

Target debt ratio

Only 28% of the companies argue that by adding more equity, they would be below their target debt ratio. This is half of the fraction of firms who say that adding more debt would move the firm above its target debt ratio. This response indicates that firms believe that the payoffs from optimizing capital structure are asymmetric. That is, firms believe that having too little debt is not as costly as having too much debt, even if the deviations from the optimal level are symmetric. The following figure illustrates this point.

Figure 26: Theoretical versus Perceived Practical Viewpoints

The graph on the left-hand side illustrates the tradeoff theory of optimal capital structure from a finance theoretic perspective. Firm value increases up to a point and then decreases. The loss in value from being below the optimal by a certain amount is more or less the same as the loss in value from being above the optimal by same amount. The graph on the right-hand side is consistent with the view of the respondents. Having too much debt is much costlier than having too little debt.

If the graph on the right-hand side is indeed a better representation of reality than the graph on the left-hand side, it should not necessarily be a surprise if firms do not issue the amount of debt that maximizes firm value. Clearly, if the relationship between the amount of debt and the value of the firm is estimated without error, the exact form of the relationship does not matter, and the optimal amount of debt is the same in both graphs. However, if the relationship between the amount of debt and firm value is estimated with some error, then firms on the right-hand side may decide to be more conservative than what appears to be optimal and chose a “safe” debt level. That is the case because issuing too much debt is much worse than issuing too little debt. And this is exactly what the survey responses reveal. Recent work by Philippon (2003) supports this view.

EPS dilution

The second result that stands out is that 60% of firms are very concerned about EPS dilution when they consider new equity issues. A smaller fraction (47%) argue that issuing equity would have a negative effect on their stock price. 49% of the respondents also mention that equity financing is not currently the cheapest source of financing. While not direct evidence, this argument supports the view that managers do not want to issue equity when they feel their shares are not fairly valued by the market. When we ask about this specific issue explicitly, 39% of the firms remark that undervaluation is indeed a concern. Undervaluation is therefore not the complete story, especially because 40% of the respondents do not believe undervaluation to be an issue at all (by assigning it a score of 0 or 1). The concern about EPS dilution may therefore be due purely to the mechanical effect of the increase in the number of shares and the belief (whether correct or incorrect) that the market punishes the firm when EPS decline. What is also interesting is that even if undervaluation is a key concern, firms do not believe that the undervaluation is about the lack of information about future investment opportunities. Only 7% of all respondents believe that this is an important consideration,

while almost two thirds of the respondents (64%) do not believe that this is important at all.

Control

For 40% of the respondents, control is important in the decision to avoid further equity financing. This is in contrast to the response on the amount of debt financing discussed previously. Few firms issue debt because they want large shareholders to retain their controlling stake, but a much larger fraction of companies pays attention to control when new equity issues are being considered.

Transaction Costs

Only 17% of the companies consider transaction costs to be important, while a full 47% do not consider these to be important at all. This response is similar to the response on the additional debt question. However, the transaction costs associated with debt issues are much smaller than those related to equity issues. If the same fraction of firms consider them to be important, this suggests that firms are not comparing one to the other, but compare the costs to the third alternative, which is not to issue any additional securities but instead to continue with the current capital structure and finance investments internally.

Other Factors

Of the remaining factors, 20% of the firms mention that they cannot raise any more equity, 18% say that their shares are illiquid, 10% argue that equityholders distrust their ability to make good investments, and 7% are worried about the cost of disclosure. The fact that only 10% of the firms believe that equityholders are worried about their ability to make good investments indicates that few firms are worried about agency problems.

Regional Analysis

Across different regions, a number of differences emerge. The following figure shows the findings for three regions. EPS dilution, the negative effect of equity issues on the stock price, undervaluation, and the fact that equity is not the cheapest source of financing are much more important in North America and Asia than in the rest of the

world. About two thirds of North American firm list all four factors as being important.

Figure 27: Factors in Deciding Not to Add More Equity - Regional Analysis

	All	Asia including Japan	Western Europe including Germany	North America
EPS dilution	88%	74%	35%	64%
Not the cheapest source of financing	83%	49%	42%	65%
Share Price	71%	77%	30%	65%
Ownership stakes of key shareholders	68%	62%	38%	27%
Equity is undervalued	64%	58%	24%	64%
Debt target	64%	28%	31%	23%
We cannot raise any more equity	64%	31%	14%	27%
Our shares are illiquid	63%	21%	15%	19%
Transaction Costs	61%	36%	12%	5%
Investors distrust our judgement	58%	9%	8%	14%
The costs of disclosure are too high	33%	17%	4%	0%
Investors unaware of our opportunities	14%	6%	4%	10%

Q3.9: "How important are the following factors in your decision not to use more equity in your capital structure?" Scale is Not Important (0) to Very Important (5).

See Appendix III for *N* by region and for results of other regions.

Summary

- Target capital structures are rarer than we imagined. 68% of firms say that they have a target capital structure, but 32% do not
- In selecting a target, firms compare debt levels and interest payments with EBITDA, a proxy for cash flow. EBITDA/Interest and Debt/EBITDA are the two targets most frequently used by firms, although many alternatives are also used
- Credit ratings are far more important in capital structure decisions than suggested by the theory. Survey respondents indicate that they are the single most important factor in firm's decisions
- Financial flexibility, including the ability to maintain investment and dividends, is the second most important factor
- The value of tax shields associated with debt, which academics consider to be a key determinant of capital structure under tradeoff theory, ranks as the third most important in practice
- Other factors that significantly affect the capital structure decision include:
 - Financial Covenants – Many firms have already committed to certain levels of debt financing
 - Impact on EPS – Firms prefer not to use equity because of its impact on EPS and share price
 - Information Asymmetries – Undervaluation of equity restricts its use

Appendices

Appendix I: References

- Andrade, G. 1998. How costly is financial (not economic) distress? Evidence from highly leveraged transactions that became distressed. *Journal of Financial Economics* 53, 1443–1494.
- Baker, M. P. and J. Wurgler. 2002. Market timing and capital structure. *Journal of Finance* 57, 1–32.
- Brealey, M., S. Myers and F. Allen. 2005. *Principals of Corporate Finance*. 8th Ed. McGraw Hill/Irwin
- DeAngelo, H. and R. W. Masulis. 1980. Optimal capital structure under corporate and personal taxation. *Journal of Financial Economics* 8, 3–29.
- Denis, D. J. and D. K. Denis. 1993. Managerial discretion, organizational structure, and corporate performance: A study of leveraged recapitalizations. *Journal of Accounting and Economics* 16, 209-236.
- Eom, Y. H., J. Helwege, and J. Huang. 2004. Structural models of corporate bond pricing: An empirical analysis. *Review of Financial Studies* 17, 499–544.
- Graham, J. R. and C. R. Harvey. 2001. The theory and practice of corporate finance: Evidence from the field, *Journal of Financial Economics* 60, 187-243.
- Graham, J. R., C. R. Harvey and S. Rajgopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, forthcoming.
- Hovakimian, A. G., 2005, Are observed capital structures determined by equity market timing, *Journal of Financial and Quantitative Analysis*, forthcoming.
- Jensen, M. C. 1986. The agency costs of free cash flow: Corporate finance and takeovers. *American Economic Review* 76, 323-329.
- Kaplan, S. 1989. The effects of management buyouts on operating performance and value. *Journal of Financial Economics* 24, 217-254.
- Miller, M. 1977. Debt and Taxes. *Journal of Finance* Vol 32, No 2 (May, 1977), 261–275
- Modigliani, F. and M. Miller. 1958. The Cost of Capital, Corporation Finance and the Theory of Investment, *American Economic Review* 48 (June 1958), 261–297.
- Myers, S. 1977. Determinants of corporate borrowing, *Journal of Financial Economics* 5, 147–175.
- Petersen, M. and R. G. Rajan. 1994. The benefits of firm-creditor relationships: Evidence from small business data. *Journal of Finance* 49, 3–37.
- Peyer, U. and A. Shivdasani. 2001. Leverage and internal capital markets: Evidence from leveraged recapitalizations. *Journal of Financial Economics* 59, 477–515.
- Philippon, T. 2003. Revealed preferences for corporate leverage, Working paper, New York University.
- Ross, S. 1977. The determination of financial structure: The incentive signalling approach, *Bell Journal of Economics* 8, 23–40.
- Stulz, R. M. 1989. Managerial discretion and optimal financing policies. *Journal of Financial Economics* 26, 3–28.

Welch, I. 2004. Capital structure and stock returns. *Journal of Political Economy* 112, 106–131.

Appendix II: Formula Derivations

The value of a perpetual cashflow

We follow the logic outlined by Brealey and Myers (2005).

Start with the general formula for the present value of a cashflow:

$$V = \sum_{i=1}^{\infty} \frac{C}{1+r} = \frac{C}{1+r} + \frac{C}{(1+r)^2} + \frac{C}{(1+r)^3} + \dots$$

Define: $x := \frac{1}{1+r}$ and $a := Cx$ to give (1) $V = a(1+x+x^2+x^3+\dots)$. Multiply both sides by x to give (2) $Vx = a(x+x^2+x^3+\dots)$. Subtract (2) from (1) to give $V(1-x) = a$ which expands to:

$$V\left(1 - \frac{1}{1+r}\right) = \frac{C}{1+r}$$

Multiply both sides by $1+r$ and rearrange to give:

$$V = \frac{C}{r}$$

Firm value with debt inc. corporate and personal taxes

Suppose a firm earns pre-tax income of C in perpetuity. Suppose also that:

The amount of debt outstanding is	D
The interest rate on the debt is	r_D
The corporate tax rate is	T_c
The personal tax rate on equity income is	T_E
The personal tax rate on debt income is	T_D

The income to investors after taxes is as follows:

Equity investors receive:	$(C - r_D D)(1 - T_c)(1 - T_E)$
Debt investors receive:	$r_D D(1 - T_D)$
Total outflows from firm:	$(C - r_D D)(1 - T_c)(1 - T_E) + r_D D(1 - T_D)$

These cash flows can be split up in the following pieces:

Part 1:	$C(1 - T_c)(1 - T_E)$
Part 2:	$r_D D[(1 - T_D) - (1 - T_c)(1 - T_E)]$

Part 1 is simply the cashflow that would accrue to the firm if it were all equity financed. It is therefore equal to the value of the firm without debt.

Part 2 is directly related to the interest rate and therefore the appropriate discount rate is the after-tax cost of debt, which is $r_D(1 - T_D)$. Thus, the value of part 2 is:

$$D \left[1 - \frac{(1 - T_c)(1 - T_E)}{(1 - T_D)} \right]$$

giving a value for the firm with debt of:

$$V_{\text{Debt}} = V_{\text{No Debt}} + D \left[1 - \frac{(1 - T_c)(1 - T_E)}{(1 - T_D)} \right]$$

Appendix III: Detailed Results

In this Appendix we present the results of the questions asked in the Capital Structure section of the survey.

As before, the symbol \bar{x} denotes the mean of a dataset, while \tilde{x} denotes the median. N denotes the size of the dataset. All questions in the survey were optional and some questions were not asked directly, depending on the answers to previous questions. Therefore, the number of responses, N , to different questions varies and is shown for each question.

This was an anonymous survey and to further protect the confidentiality of participants, results are shown on an aggregated basis and the statistics are only displayed if there are at least 5 datapoints in the sub-sample. Sub-samples without five datapoints are marked "<5" and the statistics are shown as "na".

The data for Questions 3.12 and 3.13 can be found in the Appendices to our paper [CFO Views](#).

3.1: Definition of Debt by Region, Ratings and Listing

Question: Which of the following do you include when you measure the level of "debt" for Capital Structure purposes?

Results of Question 3.1: Definition of Debt by Region, Ratings and Listing										
	LT debt maturing > 1yr	LT debt maturing < 1 yr	ST debt	Trade debt/AP	Other Current Liabilities	Capitalized Op. Leases	Unfunded Pension Liabilities	Cash Holdings (-ve Debt)	Debt Related Derivatives	N
All	96%	90%	86%	19%	16%	39%	20%	53%	15%	262
Region										
Asia excluding Japan	97%	85%	74%	24%	18%	47%	12%	29%	9%	34
Australia & New Zealand	100%	100%	100%	0%	0%	33%	0%	83%	33%	6
Eastern Europe, Middle East & Africa	na	na	na	na	na	na	na	na	na	<5
Germany	91%	87%	85%	29%	18%	24%	33%	60%	11%	55
Japan	100%	92%	92%	20%	24%	36%	28%	24%	8%	25
Latin America	100%	90%	80%	20%	20%	40%	10%	40%	50%	10
North America	100%	100%	96%	0%	0%	54%	4%	46%	18%	28
Western Europe excluding Germany	96%	88%	86%	18%	16%	40%	22%	65%	17%	99
Undisclosed	na	na	na	na	na	na	na	na	na	<5
Ratings										
Investment Grade	100%	92%	87%	9%	7%	45%	24%	56%	22%	89
Non-investment Grade	100%	100%	96%	11%	11%	44%	11%	44%	4%	27
Not Rated	100%	100%	100%	40%	40%	100%	80%	60%	20%	5
Undisclosed	93%	86%	84%	26%	21%	31%	18%	52%	13%	141
Listing										
Listed	99%	92%	91%	14%	13%	46%	22%	54%	15%	170
Not Listed	90%	84%	76%	30%	22%	25%	16%	49%	15%	88
Undisclosed	na	na	na	na	na	na	na	na	na	<5

3.1: Definition of Debt by Industry

Question: Which of the following do you include when you measure the level of "debt" for Capital Structure purposes?

Results of Question 3.1: Definition of Debt by Industry										
	LT debt maturing > 1yr	LT debt maturing < 1 yr	ST debt	Trade debt/AP	Other Current Liabilities	Capitalized Op. Leases	Unfunded Pension Liabilities	Cash Holdings (-ve Debt)	Debt Related Derivatives	N
All	96%	90%	86%	19%	16%	39%	20%	53%	15%	262
Industry										
Automobiles	100%	80%	80%	30%	20%	40%	30%	60%	40%	10
Business Services	100%	100%	80%	40%	40%	20%	0%	40%	20%	5
Chemicals	94%	94%	89%	6%	0%	33%	17%	72%	17%	18
Consumer	95%	90%	88%	15%	15%	35%	15%	60%	23%	40
Consumer Finance	100%	83%	83%	17%	33%	50%	33%	0%	17%	6
Diversified & Conglomerates	100%	83%	67%	50%	33%	33%	17%	67%	17%	6
Health Care & Pharmaceuticals	100%	92%	100%	17%	8%	58%	17%	25%	25%	12
Industrials and Materials	95%	93%	89%	18%	14%	34%	18%	57%	9%	56
Media	100%	82%	100%	27%	9%	27%	18%	55%	18%	11
Metals & Mining	89%	89%	78%	56%	44%	22%	44%	56%	11%	9
Oil & Gas	100%	92%	92%	17%	17%	50%	25%	67%	25%	12
Technology	94%	94%	94%	12%	18%	53%	12%	41%	12%	17
Telecommunications	100%	100%	88%	13%	25%	50%	25%	50%	0%	8
Transportation Services	100%	84%	84%	16%	16%	63%	32%	63%	5%	19
Utilities	100%	85%	69%	8%	8%	15%	38%	15%	15%	13
Undisclosed & Other	90%	85%	75%	20%	10%	35%	10%	55%	10%	20

3.2: Factors Determining Level of Debt

Question: How important are the following factors in determining the appropriate level of debt for your company?

Results of Question 3.2: Factors Determining Level of Debt											
	Not Important						Very Important		\bar{x}	\tilde{x}	N
	0	1	2	3	4	5					
Tax shield	20%	17%	14%	18%	22%	10%	2.4	2.5	256		
Customer attitudes	25%	23%	17%	21%	9%	5%	1.8	2.0	253		
Supplier attitudes	19%	21%	22%	23%	11%	4%	2.0	2.0	255		
Employee Attitudes to High Debt	31%	29%	22%	13%	3%	1%	1.3	1.0	255		
Ability to continue making investments	8%	3%	15%	22%	38%	15%	3.2	4.0	253		
Ability to maintain dividends	16%	13%	16%	24%	20%	11%	2.5	3.0	254		
Competitor actions when debt is high	18%	21%	21%	22%	12%	6%	2.1	2.0	248		
Credit rating	7%	5%	11%	21%	32%	25%	3.4	4.0	252		
Transaction costs on debt issues	10%	18%	23%	25%	18%	7%	2.5	2.5	252		
Investor taxes	25%	30%	20%	19%	5%	1%	1.5	1.0	246		
Signals to competitors	33%	33%	23%	7%	4%	1%	1.2	1.0	249		
High debt signals high quality to the market	39%	30%	17%	8%	4%	2%	1.1	1.0	246		
High debt => efficient management	28%	26%	25%	13%	4%	3%	1.5	1.0	248		
Debt improves bargaining with employees	49%	32%	13%	6%	0%	0%	0.8	1.0	247		
Credit spread relative to fair spread	16%	22%	25%	20%	16%	2%	2.1	2.0	246		
Shareholders maintaining control	38%	26%	21%	9%	5%	2%	1.2	1.0	243		
Ability to manage Earnings per Share	28%	22%	18%	15%	14%	2%	1.7	1.5	246		
The market's capacity for my debt	19%	9%	19%	24%	23%	6%	2.4	3.0	248		
The rights of creditors in my home jurisdiction	36%	26%	22%	11%	4%	2%	1.3	1.0	244		
Other companies in industry	18%	11%	26%	26%	18%	2%	2.2	2.0	250		
Other companies in rating category	20%	15%	24%	25%	14%	2%	2.0	2.0	246		

3.2: Factors Determining Level of Debt by Region

Question: How important are the following factors in determining the appropriate level of debt for your company?

Results of Question 3.2: Factors Determining Level of Debt by Region																														
	All			Asia excluding Japan			Australia & New Zealand			Eastern Europe, Middle East & Africa			Germany			Japan			Latin America			North America			Western Europe excluding Germany			Undisclosed		
	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N			
Tax shield	2.4	2.5	256	2.4	3.0	36	2.3	1.5	6	na	na	<5	2.0	2.0	55	2.0	2.0	21	3.2	4.0	10	2.4	3.0	27	2.5	3.0	95	na	na	<5
Customer attitudes	1.8	2.0	253	1.8	1.0	36	2.0	2.5	6	na	na	<5	1.9	2.0	55	2.0	2.0	21	1.2	1.0	10	1.9	2.0	27	1.7	1.0	92	na	na	<5
Supplier attitudes	2.0	2.0	255	1.9	1.5	36	1.7	2.0	6	na	na	<5	2.1	2.0	55	2.1	2.0	21	1.8	1.5	10	1.7	1.0	27	2.0	2.0	94	na	na	<5
Employee Attitudes to High Debt	1.3	1.0	255	1.3	1.0	36	1.7	1.5	6	na	na	<5	1.3	1.0	55	1.9	2.0	21	1.0	1.0	10	1.3	1.0	27	1.2	1.0	94	na	na	<5
Ability to continue making investments	3.2	4.0	253	3.2	4.0	35	3.0	4.0	5	na	na	<5	3.0	3.0	54	3.5	4.0	23	4.1	4.0	10	3.2	4.0	27	3.1	3.0	93	na	na	<5
Ability to maintain dividends	2.5	3.0	254	2.6	3.0	36	3.7	4.0	6	na	na	<5	2.4	2.0	54	3.1	3.0	22	3.5	3.0	10	2.4	3.0	27	2.3	3.0	93	na	na	<5
Competitor actions when debt is high	2.1	2.0	248	2.3	2.0	35	2.7	3.0	6	na	na	<5	1.7	1.0	53	2.4	3.0	21	2.0	2.0	10	2.6	3.0	26	1.8	2.0	91	na	na	<5
Credit rating	3.4	4.0	252	3.1	3.0	35	3.7	4.0	6	na	na	<5	3.6	4.0	53	3.6	4.0	24	3.5	3.5	10	3.7	4.0	26	3.2	4.0	92	na	na	<5
Transaction costs on debt issues	2.5	2.5	252	2.9	3.5	34	2.2	2.5	6	na	na	<5	2.2	2.0	54	2.6	3.0	22	2.4	2.5	10	2.3	2.0	27	2.5	3.0	93	na	na	<5
Investor taxes	1.5	1.0	246	1.8	2.0	35	2.0	2.5	6	na	na	<5	1.1	1.0	53	1.8	2.0	21	1.6	1.0	9	1.4	1.0	26	1.6	1.0	90	na	na	<5
Signals to competitors	1.2	1.0	249	1.6	2.0	35	1.5	1.5	6	na	na	<5	0.9	1.0	53	1.9	2.0	22	1.8	1.5	10	1.1	1.0	27	1.0	1.0	91	na	na	<5
High debt signals high quality to the market	1.1	1.0	246	1.6	1.0	34	1.8	2.0	6	na	na	<5	1.0	0.0	53	1.7	2.0	21	1.4	1.0	10	0.9	1.0	27	1.0	1.0	90	na	na	<5
High debt => efficient management	1.5	1.0	248	1.7	1.0	35	2.2	1.5	6	na	na	<5	1.3	1.0	54	1.8	2.0	21	1.7	2.0	10	1.7	2.0	27	1.3	1.0	90	na	na	<5
Debt improves bargaining with employees	0.8	1.0	247	1.0	1.0	35	1.0	1.0	6	na	na	<5	0.6	0.0	54	1.2	1.0	21	0.9	1.0	10	0.5	0.0	27	0.7	0.0	89	na	na	<5
Credit spread relative to fair spread	2.1	2.0	246	2.4	3.0	35	2.0	2.0	6	na	na	<5	1.9	2.0	53	2.2	2.0	21	2.0	2.0	10	1.7	1.0	27	2.1	2.0	89	na	na	<5
Shareholders maintaining control	1.2	1.0	243	1.6	1.0	35	0.4	0.0	5	na	na	<5	1.1	1.0	54	1.3	2.0	21	1.3	1.0	9	0.8	0.0	27	1.3	1.0	87	na	na	<5
Ability to manage Earnings per Share	1.7	1.5	246	2.2	2.0	35	3.0	3.5	6	na	na	<5	1.3	1.0	53	2.0	2.0	21	1.5	1.0	10	1.4	1.0	27	1.7	1.0	89	na	na	<5
The market's capacity for my debt	2.4	3.0	248	2.9	4.0	35	2.7	2.5	6	na	na	<5	1.8	2.0	53	2.4	3.0	21	2.6	2.5	10	2.4	3.0	27	2.5	3.0	90	na	na	<5
The rights of creditors in my home jurisdiction	1.3	1.0	244	2.1	2.0	35	0.8	1.0	6	na	na	<5	1.2	1.0	52	1.4	1.0	21	1.2	1.0	10	0.7	0.5	26	1.2	1.0	89	na	na	<5
Other companies in industry	2.2	2.0	250	2.4	3.0	35	2.4	3.0	5	na	na	<5	1.8	2.0	54	2.7	3.0	22	3.1	3.5	10	2.7	3.0	27	2.0	2.0	92	na	na	<5
Other companies in rating category	2.0	2.0	246	2.2	2.5	34	3.2	3.5	6	na	na	<5	1.7	2.0	52	2.7	3.0	21	2.9	3.0	10	2.0	2.0	27	1.9	2.0	91	na	na	<5

Means and Medians in Percent

3.2: Factors Determining Level of Debt by Industry

Question: How important are the following factors in determining the appropriate level of debt for your company?

Results of Question 3.2: Factors Determining Level of Debt by Industry																																																			
	All			Automobiles			Business Services			Chemicals			Consumer			Consumer Finance			Diversified/Conglomerates			Health Care & Pharmaceuticals			Industrials and Materials			Media			Metals and Mining			Oil and Gas			Technology			Telecommunications			Transportation Services			Utilities			Undisclosed & Other		
	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N												
Tax shield	2.4	2.5	256	1.8	2.0	8	na	na	<5	2.7	3.0	18	2.5	3.0	42	2.0	2.5	6	1.8	2.0	6	2.5	2.5	12	2.6	3.0	55	1.7	0.0	11	2.2	2.0	9	2.8	3.0	12	1.9	1.0	16	2.0	2.0	8	2.8	3.0	19	2.3	2.0	11	1.7	1.0	19
Customer attitudes	1.8	2.0	253	2.4	2.5	8	na	na	<5	1.9	2.0	18	1.5	1.0	41	1.7	1.5	6	0.8	0.5	6	1.4	1.0	12	2.1	3.0	55	1.5	1.0	11	0.9	1.0	9	2.3	2.0	12	2.4	2.0	16	1.3	1.0	8	1.8	2.0	18	1.5	1.5	10	1.8	1.0	19
Supplier attitudes	2.0	2.0	255	2.8	3.0	8	na	na	<5	2.1	2.0	18	2.1	2.0	42	2.3	2.5	6	1.0	1.0	6	1.3	1.0	12	2.1	2.0	55	1.5	1.0	11	1.2	1.0	9	2.3	2.0	12	2.3	2.0	16	0.9	0.5	8	2.3	2.0	18	1.5	2.0	11	2.1	1.0	19
Employee Attitudes to High Debt	1.3	1.0	255	1.3	1.0	8	na	na	<5	1.6	1.5	18	1.3	1.0	42	1.7	1.0	6	0.8	1.0	6	1.0	1.0	12	1.5	1.0	55	0.7	1.0	11	0.6	0.0	9	1.4	1.5	12	1.4	1.5	16	0.9	0.5	8	1.7	2.0	18	1.2	1.0	11	1.5	1.0	19
Ability to continue making investments	3.2	4.0	253	3.1	3.0	9	na	na	<5	3.7	4.0	18	3.1	3.5	42	3.0	3.5	6	3.3	3.5	6	2.7	2.5	12	3.2	3.5	54	3.5	4.0	11	2.0	2.0	9	3.7	3.5	12	3.6	4.0	16	1.9	2.0	8	3.6	4.0	17	3.6	4.0	10	3.2	4.0	19
Ability to maintain dividends	2.5	3.0	254	2.2	2.0	9	na	na	<5	2.4	2.5	18	2.6	3.0	42	2.5	3.0	6	3.0	3.0	6	2.3	2.5	12	2.4	2.0	54	2.7	3.0	11	2.4	3.0	9	2.9	3.0	12	2.2	1.5	16	2.0	2.0	8	2.7	3.0	18	2.6	3.0	10	2.6	3.0	19
Competitor actions when debt is high	2.1	2.0	248	1.8	1.5	8	na	na	<5	2.3	2.0	18	2.1	2.0	41	2.0	2.0	6	na	na	<5	2.5	3.0	12	2.0	2.0	53	1.9	2.0	11	1.7	1.0	9	2.5	2.5	12	2.8	3.0	16	1.4	1.5	8	1.7	2.0	17	1.5	1.0	10	2.2	2.0	19
Credit rating	3.4	4.0	252	3.8	4.0	10	na	na	<5	3.7	3.5	18	3.3	4.0	40	3.8	4.5	6	2.2	3.0	5	3.5	4.0	11	3.5	4.0	54	2.5	2.5	10	3.0	4.0	9	3.4	3.5	12	3.0	2.0	15	3.0	3.0	8	3.7	4.0	18	4.3	4.5	12	3.1	4.0	20
Transaction costs on debt issues	2.5	2.5	252	2.4	2.5	8	na	na	<5	2.4	2.0	18	2.4	3.0	41	2.8	3.0	6	2.0	2.0	5	2.4	2.5	12	2.5	3.0	54	1.8	2.0	11	2.1	2.0	9	2.8	3.0	12	2.8	3.0	16	2.8	2.5	8	2.3	2.5	18	2.4	2.0	11	2.4	2.0	19
Investor taxes	1.5	1.0	246	0.8	1.0	8	na	na	<5	1.6	1.0	18	1.7	2.0	40	1.6	1.0	5	1.2	1.0	6	1.7	1.5	12	1.4	1.0	53	1.0	1.0	11	1.3	1.0	9	1.8	2.0	10	1.9	2.0	16	2.4	3.0	8	1.8	1.5	18	1.5	1.0	10	1.0	1.0	18
Signals to competitors	1.2	1.0	249	1.4	1.0	9	na	na	<5	0.7	1.0	18	1.3	1.0	40	2.2	2.0	5	1.2	1.0	6	0.9	1.0	12	1.3	1.0	54	1.0	1.0	11	0.7	1.0	9	1.4	2.0	12	1.3	1.0	16	1.8	2.0	8	1.2	1.0	18	1.2	1.0	10	1.1	1.0	17
High debt signals high quality to the market	1.1	1.0	246	0.9	0.0	8	na	na	<5	0.7	0.0	18	1.1	1.0	39	2.8	3.0	5	2.0	1.0	6	1.2	1.0	12	1.1	1.0	54	0.7	0.0	11	0.7	0.0	9	1.4	1.0	12	1.3	1.0	16	1.3	1.5	8	1.0	1.0	17	1.8	1.0	10	1.1	0.0	17
High debt => efficient management	1.5	1.0	248	1.1	1.0	8	na	na	<5	1.3	1.0	18	1.6	1.0	39	2.8	3.0	5	2.2	2.0	6	1.3	1.0	12	1.4	1.0	54	1.1	1.0	11	1.0	1.0	9	1.8	2.0	12	1.7	2.0	16	1.5	2.0	8	1.6	1.0	18	2.0	2.0	10	1.6	1.0	18
Debt improves bargaining with employees	0.8	1.0	247	0.4	0.0	8	na	na	<5	0.7	0.0	18	0.9	1.0	39	1.4	1.0	5	0.8	1.0	6	0.7	0.5	12	0.8	1.0	53	0.5	0.0	11	0.7	1.0	9	1.1	1.0	12	0.8	1.0	16	1.1	1.0	8	0.8	0.5	18	0.7	0.5	10	0.5	0.0	18
Credit spread relative to fair spread	2.1	2.0	246	1.7	1.0	7	na	na	<5	1.9	1.5	18	2.2	2.0	39	3.0	3.0	5	1.8	1.5	6	1.5	1.0	12	2.2	2.0	53	1.5	1.0	11	2.1	2.0	9	1.6	2.0	12	2.1	2.0	16	2.1	2.0	8	1.7	2.0	18	2.4	2.0	10	2.5	3.0	18
Shareholders maintaining control	1.2	1.0	243	0.3	0.0	8	na	na	<5	1.0	1.0	18	1.5	1.0	38	1.6	2.0	5	1.2	0.5	6	1.4	0.5	12	1.3	1.0	52	0.6	1.0	11	0.7	1.0	9	1.5	2.0	11	1.4	1.0	16	1.8	2.0	8	1.4	1.0	18	1.1	1.0	9	0.8	0.0	18
Ability to manage Earnings per Share	1.7	1.5	246	0.3	0.0	7	na	na	<5	1.6	1.5	18	2.2	2.0	39	2.6	3.0	5	1.8	2.0	6	2.0	1.5	12	1.5	1.0	53	0.5	0.0	11	1.1	1.0	9	1.8	2.0	12	1.6	1.0	16	1.6	2.0	8	2.1	2.0	18	2.0	2.0	10	1.9	2.0	18
The market's capacity for my debt	2.4	3.0	248	1.9	2.0	7	na	na	<5	2.1	2.0	18	2.5	3.0	39	3.6	4.0	5	1.7	1.0	6	2.3	2.5	12	2.1	2.0	54	2.2	3.0	10	1.8	2.0	9	3.1	3.0	12	2.6	3.0	16	3.4	4.0	8	2.8	3.0	18	3.0	3.0	11	2.3	3.0	19
The rights of creditors in my home jurisdiction	1.3	1.0	244	1.4	1.0	8	na	na	<5	1.2	1.0	18	1.2	1.0	38	1.4	1.0	5	1.2	1.0	6	1.1	1.0	12	1.2	1.0	53	1.2	1.0	11	0.7	1.0	9	1.4	1.5	12	1.2	1.0	16	2.0	2.5	8	1.6	2.0	18	1.4	1.0	10	1.3	0.0	16
Other companies in industry	2.2	2.0	250	1.9	2.0	8	na	na	<5	2.1	2.0	18	2.0	2.0	40	2.4	3.0	5	2.3	2.5	6	2.3	2.5	12	2.0	2.0	54	2.2	2.0	11	1.6	1.0	9	3.2	3.5	12	2.4	2.5	16	1.9	2.0	8	2.6	3.0	18	3.5	4.0	11	1.8	1.5	18
Other companies in rating category	2.0	2.0	246	1.5	2.0	8	na	na	<5	2.1	2.0	18	2.0	2.0	40	2.0	3.0	5	2.2	2.0	5	2.1	2.0	12	2.0	2.0	53	1.7	2.0	11	1.6	1.0	9	2.2	3.0	12	2.1	2.0	16	1.5	1.5	8	2.4	3.0	16	3.2	3.0	11	1.8	2.0	18

Means and Medians in Percent

3.2: Factors Determining Level of Debt by Ratings and Listing

Question: How important are the following factors in determining the appropriate level of debt for your company?

Results of Question 3.2: Factors Determining Level of Debt by Ratings and Listing																											
	Ratings									Listing																	
	All			Investment Grade			Non-Investment Grade			Not Rated			Undisclosed			Listed			Not Listed			Undisclosed					
	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N			
Tax shield	2.4	2.5	256	2.7	3.0	86	2.2	2.0	26	2.8	3.0	5	2.2	2.0	139	2.5	3.0	165	2.0	2.0	88	na	na	<5			
Customer attitudes	1.8	2.0	253	2.0	2.0	85	1.7	1.0	26	2.4	3.0	5	1.7	1.0	137	1.9	2.0	164	1.5	1.0	86	na	na	<5			
Supplier attitudes	2.0	2.0	255	2.0	2.0	85	1.8	1.0	26	2.6	3.0	5	2.0	2.0	139	2.0	2.0	165	1.9	2.0	87	na	na	<5			
Employee Attitudes to High Debt	1.3	1.0	255	1.5	1.0	85	1.2	1.0	26	2.2	2.0	5	1.2	1.0	139	1.4	1.0	165	1.0	1.0	87	na	na	<5			
Ability to continue making investments	3.2	4.0	253	3.4	4.0	86	3.1	3.5	26	4.0	4.0	5	3.1	3.0	136	3.2	4.0	166	3.1	3.0	84	na	na	<5			
Ability to maintain dividends	2.5	3.0	254	3.1	3.0	86	2.3	2.5	26	3.0	3.0	5	2.2	2.0	137	2.9	3.0	165	1.9	2.0	86	na	na	<5			
Competitor actions when debt is high	2.1	2.0	248	2.3	2.0	83	2.1	2.0	26	1.4	1.0	5	1.9	2.0	134	2.4	2.0	160	1.5	1.0	85	na	na	<5			
Credit rating	3.4	4.0	252	4.0	4.0	87	3.8	4.0	26	4.0	4.0	5	2.9	3.0	134	3.6	4.0	163	3.0	3.0	85	na	na	<5			
Transaction costs on debt issues	2.5	2.5	252	2.5	2.0	86	2.8	3.0	26	2.6	3.0	5	2.4	3.0	135	2.5	3.0	164	2.2	2.0	85	na	na	<5			
Investor taxes	1.5	1.0	246	1.7	1.0	83	1.5	1.0	26	1.8	2.0	5	1.4	1.0	132	1.6	1.0	159	1.3	1.0	84	na	na	<5			
Signals to competitors	1.2	1.0	249	1.3	1.0	85	1.4	1.0	26	1.4	1.0	5	1.1	1.0	133	1.3	1.0	163	1.0	1.0	84	na	na	<5			
High debt signals high quality to the market	1.1	1.0	246	1.2	1.0	84	1.2	1.0	26	1.2	1.0	5	1.1	1.0	131	1.2	1.0	162	1.0	1.0	82	na	na	<5			
High debt => efficient management	1.5	1.0	248	1.6	2.0	84	1.8	2.0	26	1.2	1.0	5	1.3	1.0	133	1.7	2.0	162	1.1	1.0	84	na	na	<5			
Debt improves bargaining with employees	0.8	1.0	247	0.8	1.0	84	0.9	1.0	26	1.0	1.0	5	0.8	0.0	132	0.9	1.0	161	0.6	0.0	84	na	na	<5			
Credit spread relative to fair spread	2.1	2.0	246	1.9	2.0	83	2.2	2.5	26	2.2	2.0	5	2.1	2.0	132	2.1	2.0	160	1.9	2.0	84	na	na	<5			
Shareholders maintaining control	1.2	1.0	243	1.0	1.0	82	1.5	1.0	26	1.6	1.0	5	1.3	1.0	130	1.4	1.0	161	1.0	0.0	80	na	na	<5			
Ability to manage Earnings per Share	1.7	1.5	246	1.8	2.0	83	1.6	1.0	26	2.8	3.0	5	1.6	1.0	132	2.1	2.0	160	1.1	0.0	84	na	na	<5			
The market's capacity for my debt	2.4	3.0	248	2.5	3.0	84	3.2	3.5	26	2.8	3.0	5	2.2	2.0	133	2.7	3.0	162	1.8	2.0	83	na	na	<5			
The rights of creditors in my home jurisdiction	1.3	1.0	244	1.2	1.0	83	1.4	1.0	25	1.8	2.0	5	1.3	1.0	131	1.3	1.0	159	1.1	1.0	83	na	na	<5			
Other companies in industry	2.2	2.0	250	2.7	3.0	84	2.8	3.0	26	2.6	3.0	5	1.8	2.0	135	2.6	3.0	164	1.6	2.0	84	na	na	<5			
Other companies in rating category	2.0	2.0	246	2.5	3.0	83	2.6	3.0	26	2.2	3.0	5	1.6	2.0	132	2.3	2.0	161	1.6	2.0	83	na	na	<5			

Means and Medians in Percent

3.3: Capital Structure Target by Region, Ratings and Listing

Question: Do you have a target Capital Structure?

3.3: Capital Structure Target by Region, Ratings and Listing			
	Yes	No	<i>N</i>
All	68%	32%	260
Region			
Asia excluding Japan	75%	25%	36
Australia & New Zealand	83%	17%	6
Eastern Europe, Middle East & Africa	80%	20%	5
Germany	67%	33%	55
Japan	74%	26%	23
Latin America	90%	10%	10
North America	85%	15%	27
Western Europe excluding Germany	56%	44%	96
Undisclosed	na	na	<5
Ratings			
Investment Grade	80%	20%	87
Non-investment Grade	78%	22%	27
Not Rated	60%	40%	5
Undisclosed	59%	41%	141
Listing			
Listed	74%	26%	172
Not Listed	56%	44%	85
Undisclosed	na	na	<5

3.3: Capital Structure Target by Industry

Question: Do you have a target Capital Structure?

3.3: Capital Structure Target by Industry			
	Yes	No	<i>N</i>
All	68%	32%	260
Industry			
Automobiles	90%	10%	10
Business Services	na	na	<5
Chemicals	72%	28%	18
Consumer	67%	33%	42
Consumer Finance	67%	33%	6
Diversified & Conglomerates	33%	67%	6
Health Care & Pharmaceuticals	75%	25%	12
Industrials and Materials	67%	33%	55
Media	45%	55%	11
Metals & Mining	56%	44%	9
Oil & Gas	83%	17%	12
Technology	71%	29%	17
Telecommunications	75%	25%	8
Transportation Services	83%	17%	18
Utilities	85%	15%	13
Undisclosed & Other	53%	47%	19

3.4: Capital Structure Measures

Question: Which of the following measures do you use to determine your target Capital Structure?

Results of Question 3.4: Capital Structure Measures				
	Primary	Secondary	Not Used	N
Absolute level of debt	53%	25%	22%	153
Debt relative/MV of equity	21%	37%	41%	155
Debt/BV of equity	55%	25%	20%	156
Debt/BV of total assets	38%	33%	29%	154
Debt/(MV of equity + BV of debt)	15%	30%	54%	149
Debt/(MV of equity and debt)	14%	31%	55%	148
EBITDA/interest payments	58%	25%	17%	155
EBITDA/fixed charges	13%	33%	54%	142
EBIT/interest payments	32%	27%	40%	146
EBIT/fixed charges	9%	32%	58%	142
FFO/debt	38%	29%	34%	149
FFO/interest payments	19%	32%	50%	145
FFO/fixed charges	5%	24%	71%	140
Free operating cashflow/debt	47%	34%	19%	151
Debt/EBITDA	58%	25%	17%	151
RCF/debt	21%	33%	46%	146
Credit ratings target	47%	29%	25%	154

3.4: Capital Structure Measures by Region

Question: Which of the following measures do you use to determine your target Capital Structure?

Results of Question 3.4: Capital Structure Measures by Region																														
	All			Asia excluding Japan			Australia & New Zealand			Eastern Europe, Middle East & Africa			Germany			Japan			Latin America			North America			Western Europe excluding Germany			Undisclosed		
	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N
Absolute level of debt	53	25	153	71	21	24	60	0	5	na	na	<5	58	15	33	42	33	12	33	44	9	67	24	21	42	24	45	na	na	<5
Debt relative/MV of equity	21	37	155	32	45	22	na	na	<5	na	na	<5	9	26	34	31	38	13	44	33	9	18	50	22	17	41	46	na	na	<5
Debt/BV of equity	55	25	156	75	17	24	na	na	<5	na	na	<5	59	21	34	42	25	12	50	25	8	50	23	22	49	34	47	na	na	<5
Debt/BV of total assets	38	33	154	54	33	24	na	na	<5	na	na	<5	45	30	33	62	31	13	22	56	9	14	14	21	31	40	45	na	na	<5
Debt/(MV of equity + BV of debt)	15	30	149	27	41	22	na	na	<5	na	na	<5	6	12	33	8	58	12	11	56	9	27	36	22	10	24	42	na	na	<5
Debt/(MV of equity and debt)	14	31	148	15	50	20	na	na	<5	na	na	<5	6	18	33	8	42	12	38	25	8	14	48	21	11	27	45	na	na	<5
EBITDA/interest payments	58	25	155	63	33	24	60	0	5	na	na	<5	55	18	33	18	45	11	78	22	9	82	9	22	53	28	47	na	na	<5
EBITDA/fixed charges	13	33	142	9	73	22	na	na	<5	na	na	<5	15	15	33	0	55	11	0	33	9	24	33	21	18	21	38	na	na	<5
EBIT/interest payments	32	27	146	48	39	23	na	na	<5	na	na	<5	30	9	33	18	45	11	22	22	9	29	29	21	37	29	41	na	na	<5
EBIT/fixed charges	9	32	142	9	64	22	na	na	<5	na	na	<5	6	21	33	0	50	10	0	25	8	19	29	21	13	23	40	na	na	<5
FFO/debt	38	29	149	23	55	22	na	na	<5	na	na	<5	36	18	33	18	27	11	33	22	9	57	24	21	45	30	44	na	na	<5
FFO/interest payments	19	32	145	23	55	22	na	na	<5	na	na	<5	23	16	31	0	45	11	33	22	9	14	43	21	21	24	42	na	na	<5
FFO/fixed charges	5	24	140	0	62	21	na	na	<5	na	na	<5	3	10	30	0	36	11	11	11	9	10	20	20	8	13	40	na	na	<5
Free operating cashflow/debt	47	34	151	39	57	23	na	na	<5	na	na	<5	52	30	33	64	9	11	44	22	9	52	33	21	42	36	45	na	na	<5
Debt/EBITDA	58	25	151	45	41	22	na	na	<5	na	na	<5	65	12	34	18	55	11	67	33	9	68	18	22	61	25	44	na	na	<5
RCF/debt	21	33	146	22	61	23	na	na	<5	na	na	<5	18	30	33	45	27	11	0	63	8	20	25	20	23	23	43	na	na	<5
Credit ratings target	47	29	154	48	26	23	na	na	<5	na	na	<5	58	18	33	43	36	14	44	44	9	64	32	22	36	31	45	na	na	<5

Key:

P = Percentage of respondent who chose this as a primary measure

S = Percentage of respondent who chose this as a secondary measure

N = Number of respondents

3.4: Capital Structure Measures by Industry

Question: Which of the following measures so you use to determine your target Capital Structure?

Results of Question 3.4: Capital Structure Measures by Industry																																																			
	All			Automobiles			Business Services			Chemicals			Consumer			Consumer Finance			Diversified/Conglomerates			Health Care & Pharmaceuticals			Industrials and Materials			Media			Metals and Mining			Oil and Gas			Technology			Telecommunications			Transportation Services			Utilities			Undisclosed & Other		
	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N
Absolute level of debt	53	25	153	29	29	7	na	na	<5	33	17	12	43	26	23	na	na	<5	na	na	<5	67	33	9	47	32	34	20	60	5	na	na	<5	40	30	10	64	27	11	na	na	<5	77	8	13	71	14	7	89	11	9
Debt relative/MV of equity	21	37	155	13	13	8	na	na	<5	0	50	12	29	38	24	na	na	<5	na	na	<5	0	38	8	26	32	34	na	na	<5	na	na	<5	20	30	10	40	60	10	na	na	<5	23	31	13	22	67	9	11	22	9
Debt/BV of equity	55	25	156	86	14	7	na	na	<5	62	38	13	63	21	24	na	na	<5	na	na	<5	75	0	8	37	31	35	na	na	<5	100	0	5	67	0	9	36	55	11	na	na	<5	62	15	13	67	33	9	50	38	8
Debt/BV of total assets	38	33	154	29	29	7	na	na	<5	54	15	13	43	35	23	na	na	<5	na	na	<5	38	25	8	39	39	33	na	na	<5	na	na	<5	30	20	10	30	50	10	na	na	<5	31	46	13	44	44	9	22	44	9
Debt/(MV of equity + BV of debt)	15	30	149	14	14	7	na	na	<5	17	8	12	9	50	22	na	na	<5	na	na	<5	13	25	8	23	29	35	na	na	<5	na	na	<5	20	10	10	30	50	10	na	na	<5	8	17	12	14	29	7	22	22	9
Debt/(MV of equity and debt)	14	31	148	25	13	8	na	na	<5	0	25	12	14	41	22	na	na	<5	na	na	<5	14	14	7	15	38	34	na	na	<5	na	na	<5	20	40	10	20	50	10	na	na	<5	18	27	11	29	29	7	0	11	9
EBITDA/interest payments	58	25	155	29	29	7	na	na	<5	54	38	13	74	17	23	na	na	<5	na	na	<5	50	13	8	51	31	35	na	na	<5	80	20	5	60	30	10	60	30	10	na	na	<5	53	27	15	86	0	7	56	33	9
EBITDA/fixed charges	13	33	142	0	29	7	na	na	<5	22	22	9	18	36	22	na	na	<5	na	na	<5	13	25	8	9	33	33	na	na	<5	na	na	<5	11	33	9	10	50	10	na	na	<5	0	58	12	17	33	6	22	22	9
EBIT/interest payments	32	27	146	17	17	6	na	na	<5	20	30	10	39	22	23	na	na	<5	na	na	<5	50	0	8	29	38	34	na	na	<5	na	na	<5	30	20	10	30	50	10	na	na	<5	46	23	13	33	33	6	33	22	9
EBIT/fixed charges	9	32	142	0	14	7	na	na	<5	10	20	10	4	35	23	na	na	<5	na	na	<5	13	25	8	6	44	32	na	na	<5	na	na	<5	10	20	10	20	30	10	na	na	<5	9	55	11	17	33	6	11	33	9
FFO/debt	38	29	149	25	25	8	na	na	<5	58	8	12	32	41	22	na	na	<5	na	na	<5	25	50	8	32	32	34	na	na	<5	na	na	<5	40	20	10	60	40	10	na	na	<5	21	43	14	86	0	7	29	29	7
FFO/interest payments	19	32	145	0	14	7	na	na	<5	27	27	11	18	36	22	na	na	<5	na	na	<5	0	50	8	9	42	33	na	na	<5	40	0	5	30	30	10	40	40	10	na	na	<5	0	38	13	57	14	7	14	29	7
FFO/fixed charges	5	24	140	0	14	7	na	na	<5	0	18	11	5	36	22	na	na	<5	na	na	<5	0	38	8	3	31	32	na	na	<5	na	na	<5	11	0	9	20	30	10	na	na	<5	0	25	12	0	17	6	0	14	7
Free operating cashflow/debt	47	34	151	43	29	7	na	na	<5	36	18	11	48	30	23	na	na	<5	na	na	<5	63	25	8	47	44	34	na	na	<5	80	0	5	40	20	10	60	20	10	na	na	<5	14	79	14	57	29	7	56	22	9
Debt/EBITDA	58	25	151	38	13	8	na	na	<5	27	45	11	74	22	23	na	na	<5	na	na	<5	50	13	8	57	34	35	na	na	<5	na	na	<5	70	20	10	60	30	10	na	na	<5	31	46	13	71	14	7	56	11	9
RCF/debt	21	33	146	43	0	7	na	na	<5	25	25	12	9	35	23	na	na	<5	na	na	<5	38	13	8	18	41	34	na	na	<5	na	na	<5	33	33	9	33	33	9	na	na	<5	8	33	12	0	50	6	33	33	9
Credit ratings target	47	29	154	56	22	9	na	na	<5	55	18	11	35	43	23	na	na	<5	na	na	<5	38	25	8	40	29	35	na	na	<5	80	20	5	60	20	10	40	30	10	na	na	<5	38	38	13	86	14	7	63	13	8

Key:

P = Percentage of respondent who chose this as a primary measure

S = Percentage of respondent who chose this as a secondary measure

N = Number of respondents

3.4: Capital Structure Measures by Ratings and Listing

Question: Which of the following measures do you use to determine your target Capital Structure?

Results of Question 3.4: Capital Structure Measures by Ratings and Listing																										
	Ratings									Listing																
	All			Investment Grade			Non-investment Grade			Not Rated			Undisclosed			Listed			Not Listed			Undisclosed				
	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N		
Absolute level of debt	53	25	153	51	32	63	63	25	16	na	na	<5	51	21	71	55	26	110	48	24	42	na	na	<5		
Debt relative/MV of equity	21	37	155	22	45	65	29	47	17	na	na	<5	20	27	70	22	46	112	19	14	42	na	na	<5		
Debt/BV of equity	55	25	156	52	30	66	50	25	16	na	na	<5	61	20	71	54	27	112	58	21	43	na	na	<5		
Debt/BV of total assets	38	33	154	31	33	64	44	19	16	na	na	<5	42	35	71	36	33	109	41	34	44	na	na	<5		
Debt/(MV of equity + BV of debt)	15	30	149	15	31	61	12	65	17	na	na	<5	18	21	68	19	34	106	5	21	42	na	na	<5		
Debt/(MV of equity and debt)	14	31	148	22	30	63	6	50	16	na	na	<5	7	27	67	13	36	105	14	19	42	na	na	<5		
EBITDA/interest payments	58	25	155	56	24	62	61	22	18	na	na	<5	58	26	72	60	25	111	51	26	43	na	na	<5		
EBITDA/fixed charges	13	33	142	12	34	59	25	25	16	na	na	<5	13	33	64	11	37	101	20	24	41	na	na	<5		
EBIT/interest payments	32	27	146	26	22	58	19	44	16	na	na	<5	39	28	69	33	28	104	31	26	42	na	na	<5		
EBIT/fixed charges	9	32	142	10	28	58	6	31	16	na	na	<5	9	35	65	9	32	102	10	33	40	na	na	<5		
FFO/debt	38	29	149	54	24	63	19	44	16	na	na	<5	28	31	67	41	31	107	27	24	41	na	na	<5		
FFO/interest payments	19	32	145	22	32	60	13	44	16	na	na	<5	18	30	66	16	37	104	25	18	40	na	na	<5		
FFO/fixed charges	5	24	140	4	21	57	13	19	16	na	na	<5	5	28	64	5	26	100	5	15	39	na	na	<5		
Free operating cashflow/debt	47	34	151	50	33	60	47	35	17	na	na	<5	46	31	71	48	36	107	47	28	43	na	na	<5		
Debt/EBITDA	58	25	151	48	29	62	76	24	17	na	na	<5	62	22	69	58	29	108	57	17	42	na	na	<5		
RCF/debt	21	33	146	23	30	60	13	38	16	na	na	<5	21	36	67	24	34	103	14	30	43	na	na	<5		
Credit ratings target	47	29	154	73	22	64	53	47	17	na	na	<5	20	31	70	51	30	111	35	26	43	na	na	<5		

Key:

P = Percentage of respondent who chose this as a primary measure

S = Percentage of respondent who chose this as a secondary measure

N = Number of respondents

3.5: Target Leverage by Region, Ratings and Listing

Question: Approximately what would your leverage ratio be if you were at your target capital structure?

Results of Question 3.5 by Region, Ratings and Listing														
	0%	1% - 10%	11% - 20%	21% - 30%	31% - 40%	41% - 50%	51% - 60%	61% - 70%	71% - 80%	81% - 90%	91% - 100%	\bar{x}	\tilde{x}	<i>N</i>
All	2%	2%	4%	15%	19%	27%	14%	7%	6%	2%	1%	38.9	41.0	162
Region														
Asia excluding Japan	8%	4%	4%	8%	0%	32%	24%	4%	16%	0%	0%	41.3	41.0	25
Australia & New Zealand	0%	0%	0%	0%	40%	40%	0%	0%	0%	20%	0%	45.0	41.0	5
Eastern Europe, Middle East & Africa	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Germany	0%	3%	11%	11%	25%	25%	8%	6%	8%	3%	0%	37.4	36.0	36
Japan	0%	8%	8%	8%	25%	8%	17%	8%	0%	8%	8%	41.8	36.0	12
Latin America	0%	0%	0%	33%	33%	11%	22%	0%	0%	0%	0%	33.2	31.0	9
North America	0%	4%	0%	30%	30%	22%	9%	4%	0%	0%	0%	31.9	31.0	23
Western Europe excluding Germany	2%	0%	2%	15%	10%	35%	15%	13%	6%	2%	0%	42.2	41.0	48
Undisclosed	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Ratings														
Investment Grade	3%	3%	6%	19%	19%	26%	13%	6%	1%	3%	0%	35.2	36.0	68
Non-investment Grade	0%	0%	0%	6%	33%	33%	6%	6%	11%	0%	6%	44.3	41.0	18
Not Rated	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Undisclosed	1%	3%	4%	15%	15%	25%	16%	8%	10%	3%	0%	40.8	41.0	73
Listing														
Listed	3%	3%	3%	16%	20%	28%	13%	7%	5%	2%	1%	37.9	41.0	117
Not Listed	0%	0%	9%	14%	18%	23%	16%	7%	9%	5%	0%	41.2	41.0	44
Undisclosed	na	na	na	na	na	na	na	na	na	na	na	na	na	<5

3.5: Target Leverage by Industry

Question: Approximately what would your leverage ratio be if you were at your target capital structure?

Results of Question 3.5: Target Leverage by Industry														
	0%	1% - 10%	11% - 20%	21% - 30%	31% - 40%	41% - 50%	51% - 60%	61% - 70%	71% - 80%	81% - 90%	91% - 100%	\bar{x}	\tilde{x}	<i>N</i>
All	2%	2%	4%	15%	19%	27%	14%	7%	6%	2%	1%	38.9	41.0	162
Industry														
Automobiles	0%	0%	13%	13%	13%	38%	0%	25%	0%	0%	0%	38.5	8.0	8
Business Services	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Chemicals	0%	0%	8%	8%	15%	31%	23%	15%	0%	0%	0%	41.0	13.0	13
Consumer	4%	0%	0%	17%	13%	33%	8%	13%	8%	4%	0%	42.2	24.0	24
Consumer Finance	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Diversified & Conglomerates	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Health Care & Pharmaceuticals	0%	11%	0%	56%	0%	0%	22%	0%	11%	0%	0%	31.0	9.0	9
Industrials and Materials	0%	0%	6%	9%	29%	34%	6%	9%	9%	0%	0%	39.6	35.0	35
Media	0%	0%	0%	40%	40%	20%	0%	0%	0%	0%	0%	29.0	5.0	5
Metals & Mining	0%	0%	20%	40%	0%	0%	0%	0%	20%	0%	20%	43.0	5.0	5
Oil & Gas	0%	0%	0%	30%	20%	30%	20%	0%	0%	0%	0%	35.0	10.0	10
Technology	22%	11%	11%	22%	11%	22%	0%	0%	0%	0%	0%	18.6	9.0	9
Telecommunications	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Transportation Services	0%	0%	0%	7%	27%	33%	27%	7%	0%	0%	0%	41.7	15.0	15
Utilities	0%	0%	0%	10%	10%	30%	30%	10%	10%	0%	0%	46.0	10.0	10
Undisclosed & Other	0%	22%	0%	0%	22%	0%	44%	0%	0%	11%	0%	38.8	9.0	9

3.6: Target Interest Coverage by Region, Ratings and Listing

Question: Approximately what would your EBITDA/Gross interest ratio be if you were at your target capital structure?

3.6 by Region, Ratings and Listing														
	0x - 2x	2.1x - 4x	4.1x - 6x	6.1x - 8x	8.1x - 10x	10.1x - 12x	12.1x - 14x	14.1x - 16x	16.1x - 18x	18.1x - 20x	Over 20x	\bar{x}	\tilde{x}	<i>N</i>
All	2%	12%	14%	21%	16%	14%	3%	5%	1%	1%	12%	6.2	6.1	146
Region														
Asia excluding Japan	5%	14%	18%	0%	23%	18%	0%	0%	0%	0%	23%	4.7	4.1	22
Australia & New Zealand	20%	20%	20%	20%	0%	20%	0%	0%	0%	0%	0%	4.5	4.1	5
Eastern Europe, Middle East & Africa	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Germany	0%	3%	9%	38%	9%	15%	3%	9%	0%	3%	12%	7.1	6.1	34
Japan	0%	0%	0%	10%	10%	10%	10%	0%	0%	0%	60%	3.6	0.0	10
Latin America	0%	0%	22%	33%	22%	0%	0%	22%	0%	0%	0%	7.9	6.1	9
North America	0%	10%	10%	19%	29%	10%	5%	0%	5%	5%	10%	7.2	8.1	21
Western Europe excluding Germany	2%	23%	19%	19%	14%	14%	2%	2%	2%	0%	2%	5.9	6.1	43
Undisclosed	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Ratings														
Investment Grade	2%	5%	11%	20%	18%	13%	5%	5%	3%	3%	15%	7.0	6.1	61
Non-investment Grade	0%	25%	25%	13%	13%	6%	6%	6%	0%	0%	6%	5.6	4.1	16
Not Rated	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Undisclosed	3%	15%	14%	24%	14%	15%	0%	5%	0%	0%	11%	5.6	6.1	66
Listing														
Listed	3%	11%	14%	18%	19%	10%	4%	4%	2%	1%	14%	6.0	6.1	106
Not Listed	0%	13%	13%	28%	8%	23%	0%	8%	0%	3%	8%	6.8	6.1	40
Undisclosed	na	na	na	na	na	na	na	na	na	na	na	na	na	<5

3.6: Target Interest Coverage by Industry

Question: Approximately what would your EBITDA/Gross interest ratio be if you were at your target capital structure?

Results of Question 3.6: Target Interest Coverage by Industry														
	0x - 2x	2.1x - 4x	4.1x - 6x	6.1x - 8x	8.1x - 10x	10.1x - 12x	12.1x - 14x	14.1x - 16x	16.1x - 18x	18.1x - 20x	Over 20x	\bar{x}	\tilde{x}	<i>N</i>
All	2%	12%	14%	21%	16%	14%	3%	5%	1%	1%	12%	6.2	6.1	146
Industry														
Automobiles	0%	0%	17%	33%	0%	0%	0%	0%	0%	17%	33%	5.7	5.1	6
Business Services	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Chemicals	0%	9%	9%	36%	9%	27%	9%	0%	0%	0%	0%	7.4	6.1	11
Consumer	0%	18%	18%	36%	14%	5%	0%	5%	0%	0%	5%	5.6	6.1	22
Consumer Finance	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Diversified & Conglomerates	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Health Care & Pharmaceuticals	0%	0%	11%	0%	33%	0%	0%	0%	11%	0%	44%	4.9	4.1	9
Industrials and Materials	3%	17%	13%	13%	17%	17%	3%	0%	0%	3%	13%	5.8	6.1	30
Media	0%	0%	20%	20%	0%	40%	0%	20%	0%	0%	0%	8.9	10.1	5
Metals & Mining	0%	0%	0%	20%	20%	0%	20%	0%	20%	0%	20%	8.5	8.1	5
Oil & Gas	0%	0%	10%	10%	30%	20%	10%	20%	0%	0%	0%	9.5	9.1	10
Technology	13%	0%	13%	13%	13%	13%	0%	0%	0%	0%	38%	3.6	2.1	8
Telecommunications	na	na	na	na	na	na	na	na	na	na	na	na	na	<5
Transportation Services	0%	14%	14%	29%	7%	7%	0%	14%	0%	0%	14%	5.9	6.1	14
Utilities	0%	20%	20%	20%	10%	30%	0%	0%	0%	0%	0%	6.3	6.1	10
Undisclosed & Other	13%	13%	0%	13%	25%	25%	0%	0%	0%	0%	13%	5.6	7.1	8

3.7: Commitment to Rating by Region, Ratings and Listing

Question: If you are rated, what is the lowest long-term rating you would be willing to tolerate in order to:

- Take on value-enhancing investments
- Engage in strategic merger and acquisition activities
- Maintain your current dividend policy
- Avoid hostile takeover

Results of Question 3.7: Commitment to Rating by Region, Ratings and Listing

	Take on value enhancing investments			Engage in strategic merger and acquisition activities			Maintain your current dividend policy			Avoid a hostile takeover		
	Downgrade	Average Downgrade	N	Downgrade	Average Downgrade	N	Downgrade	Average Downgrade	N	Downgrade	Average Downgrade	N
All	57%	1.0	126	69%	1.2	123	44%	0.8	119	64%	1.5	104
Region												
Asia excluding Japan	63%	1.4	8	63%	1.1	8	63%	0.9	8	67%	2.7	6
Australia & New Zealand	80%	1.4	5	80%	1.4	5	80%	1.4	5	100%	1.8	5
Eastern Europe, Middle East & Africa	na	na	<5	na	na	<5	na	na	<5	na	na	<5
Germany	63%	0.9	19	65%	0.9	20	50%	0.8	18	67%	1.3	15
Japan	43%	1.1	7	43%	1.1	7	43%	1.1	7	43%	1.1	7
Latin America	67%	1.2	12	83%	1.3	12	50%	0.8	12	80%	1.2	10
North America	59%	1.0	51	74%	1.4	50	43%	0.8	46	71%	1.8	41
Western Europe excluding Germany	42%	0.7	24	62%	1.2	21	22%	0.4	23	40%	0.9	20
Undisclosed	na	na	<5	na	na	<5	na	na	<5	na	na	<5
Ratings												
Investment Grade	61%	1.1	108	73%	1.3	106	46%	0.8	105	69%	1.6	88
Non-investment Grade	33%	0.4	18	47%	0.5	17	29%	0.5	14	38%	1.1	16
Not Rated	na	na	<5	na	na	<5	na	na	<5	na	na	<5
Undisclosed	na	na	<5	na	na	<5	na	na	<5	na	na	<5
Listing												
Listed	53%	1.0	104	67%	1.2	102	41%	0.8	98	62%	1.5	89
Not Listed	77%	1.2	22	81%	1.2	21	57%	0.9	21	80%	1.3	15
Undisclosed	na	na	<5	na	na	<5	na	na	<5	na	na	<5

Key: Downgrade = Proportion of the sample that would accept a downgrade

Average Downgrade = Average number of notches of downgrade accepted. A move from BBB+ to BBB, for example, counts as a one notch downgrade

3.7: Commitment to Rating by Industry

Question: If you are rated, what is the lowest long-term rating you would be willing to tolerate in order to:

- Take on value-enhancing investments
- Engage in strategic merger and acquisition activities
- Maintain your current dividend policy
- Avoid hostile takeover

Results of Question 3.7: Commitment to Rating by Industry												
	Take on value enhancing investments			Engage in strategic merger and acquisition activities			Maintain your current dividend policy			Avoid a hostile takeover		
	Downgrade	Average Downgrade	N	Downgrade	Average Downgrade	N	Downgrade	Average Downgrade	N	Downgrade	Average Downgrade	N
All	57%	1.0	126	69%	1.2	123	44%	0.8	119	64%	1.5	104
Industry												
Automobiles	na	na	<5	na	na	<5	na	na	<5	na	na	<5
Business Services	na	na	<5	na	na	<5	na	na	<5	na	na	<5
Chemicals	25%	0.6	8	63%	1.9	8	50%	0.9	8	67%	2.2	6
Consumer	79%	1.2	14	93%	1.4	14	69%	1.1	13	100%	2.4	11
Consumer Finance	na	na	<5	na	na	<5	na	na	<5	na	na	<5
Diversified & Conglomerates	na	na	<5	na	na	<5	na	na	<5	na	na	<5
Health Care & Pharmaceuticals	75%	1.7	12	75%	1.7	12	67%	1.2	12	75%	1.6	12
Industrials and Materials	41%	0.5	27	59%	0.7	27	17%	0.2	23	44%	0.7	25
Media	100%	1.5	8	100%	2.3	8	38%	1.3	8	100%	3.7	6
Metals & Mining	40%	0.8	5	40%	0.8	5	0%	0.0	5	na	na	<5
Oil & Gas	67%	1.3	6	67%	1.2	6	33%	0.5	6	80%	1.2	5
Technology	44%	1.1	9	44%	0.9	9	38%	0.8	8	44%	2.2	9
Telecommunications	17%	0.3	6	60%	1.0	5	17%	0.3	6	na	na	<5
Transportation Services	80%	1.4	5	83%	1.3	6	80%	1.4	5	na	na	<5
Utilities	60%	1.0	15	75%	1.3	12	53%	0.9	15	80%	1.4	10
Undisclosed & Other	na	na	<5	na	na	<5	na	na	<5	na	na	<5

Key: Downgrade = Proportion of the sample that would accept a downgrade

Average Downgrade = Average number of notches of downgrade accepted. A move from BBB+ to BBB, for example, counts as a one notch downgrade

3.8: Factors Limiting Debt Usage

Question: How important are the following factors in your decision not to use more debt in your capital structure?

Results of Question 3.8: Factors Limiting Debt Usage										
	Not Important							Very Important		<i>N</i>
	0	1	2	3	4	5	\bar{x}	\tilde{x}		
Target debt level	4%	9%	7%	20%	31%	30%	3.6	4.0	161	
Credit rating	7%	5%	10%	18%	32%	28%	3.5	4.0	159	
Financial covenants	12%	7%	9%	11%	16%	44%	3.4	4.0	161	
Interest rates are too high	13%	19%	19%	24%	17%	8%	2.4	2.0	161	
Credit spreads are too wide	12%	22%	20%	17%	24%	4%	2.3	2.0	157	
Transaction costs	14%	31%	18%	17%	18%	2%	2.0	2.0	161	
More debt would constrain us financially	8%	10%	17%	27%	23%	15%	2.9	3.0	161	
More debt would cause financial distress	15%	21%	14%	13%	14%	23%	2.6	3.0	156	
Investors unaware of our opportunities	31%	29%	20%	15%	4%	1%	1.3	1.0	153	
Investors distrust our judgement	34%	27%	19%	10%	9%	1%	1.4	1.0	153	
We cannot raise any more debt	38%	21%	7%	6%	10%	17%	1.8	1.0	155	
The costs of disclosure are too high	40%	31%	10%	14%	5%	0%	1.1	1.0	153	
Not the cheapest source of financing	27%	22%	12%	12%	17%	9%	2.0	2.0	155	

3.8: Factors Limiting Debt Usage by Region

Question: How important are the following factors in your decision not to use more debt in your capital structure?

Results of Question 3.8: Factors Limiting Debt Usage by Region																														
	All			Asia excluding Japan			Australia & New Zealand			Eastern Europe, Middle East & Africa			Germany			Japan			Latin America			North America			Western Europe excluding Germany			Undisclosed		
	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N			
Target debt level	3.6	4.0	161	4.0	4.0	24	4.8	5.0	5	na	na	<5	3.0	3.0	35	3.5	3.5	14	3.3	4.0	9	3.5	4.0	22	3.8	4.0	48	na	na	<5
Credit rating	3.5	4.0	159	3.6	4.0	24	4.0	4.0	5	na	na	<5	3.1	4.0	35	3.9	4.5	14	3.3	3.0	9	4.1	4.0	23	3.4	4.0	45	na	na	<5
Financial covenants	3.4	4.0	161	4.3	5.0	24	4.4	5.0	5	na	na	<5	2.3	2.0	35	3.2	3.0	13	4.0	4.0	9	3.9	5.0	23	3.4	4.0	48	na	na	<5
Interest rates are too high	2.4	2.0	161	3.8	4.0	24	2.2	2.0	5	na	na	<5	1.4	1.0	35	2.7	3.0	15	2.7	3.0	9	2.4	2.0	23	2.0	2.0	46	na	na	<5
Credit spreads are too wide	2.3	2.0	157	3.7	4.0	22	2.4	2.0	5	na	na	<5	1.7	1.0	35	2.7	3.0	15	2.4	2.0	9	2.4	2.0	23	2.0	2.0	44	na	na	<5
Transaction costs	2.0	2.0	161	3.6	4.0	25	2.0	2.0	5	na	na	<5	1.5	1.0	35	2.5	3.0	15	1.7	2.0	9	1.7	2.0	23	1.7	1.0	45	na	na	<5
More debt would constrain us financially	2.9	3.0	161	3.7	4.0	25	2.8	3.0	5	na	na	<5	2.4	2.0	34	3.1	3.0	15	3.9	4.0	9	3.1	3.0	23	2.6	3.0	46	na	na	<5
More debt would cause financial distress	2.6	3.0	156	3.5	4.0	24	3.2	4.0	5	na	na	<5	2.1	2.0	35	1.4	1.0	13	3.1	3.0	9	2.5	2.0	23	2.7	3.0	43	na	na	<5
Investors unaware of our opportunities	1.3	1.0	153	2.5	3.0	22	1.6	1.0	5	na	na	<5	0.9	1.0	35	1.6	1.0	14	1.6	2.0	9	1.0	0.5	22	1.2	1.0	42	na	na	<5
Investors distrust our judgement	1.4	1.0	153	2.8	3.0	21	1.8	1.0	5	na	na	<5	0.9	1.0	35	1.5	1.0	14	1.3	1.0	9	1.1	0.0	23	1.2	1.0	42	na	na	<5
We cannot raise any more debt	1.8	1.0	155	3.2	4.0	23	2.4	1.0	5	na	na	<5	1.3	0.0	35	2.2	2.5	14	1.1	1.0	9	1.7	0.0	23	1.6	1.0	43	na	na	<5
The costs of disclosure are too high	1.1	1.0	153	2.1	2.0	23	1.6	1.0	5	na	na	<5	1.0	1.0	35	1.7	2.0	14	0.8	0.5	8	0.5	0.0	22	0.9	1.0	42	na	na	<5
Not the cheapest source of financing	2.0	2.0	155	3.4	4.0	22	2.8	3.0	5	na	na	<5	1.9	1.0	35	2.3	2.0	15	2.0	1.0	9	1.4	1.0	22	1.4	1.0	43	na	na	<5

Means and Medians in Percent

3.8: Factors Limiting Debt Usage by Industry

Question: How important are the following factors in your decision not to use more debt in your capital structure?

Results of Question 3.8: Factors Limiting Debt Usage by Industry																																																			
	All			Automobiles			Business Services			Chemicals			Consumer			Consumer Finance			Diversified/Conglomerates			Health Care & Pharmaceuticals			Industrials and Materials			Media			Metals and Mining			Oil and Gas			Technology			Telecommunications			Transportation Services			Utilities			Undisclosed & Other		
	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N												
Target debt level	3.6	4.0	161	4.0	4.0	7	na	na	<5	2.9	3.0	12	3.7	4.0	25	na	na	<5	na	na	<5	3.4	4.0	9	3.3	4.0	35	3.2	3.0	5	3.2	4.0	5	4.1	4.5	10	3.2	4.0	10	3.6	4.0	5	3.7	4.0	13	4.4	4.5	10	3.9	4.0	9
Credit rating	3.5	4.0	159	2.9	3.0	7	na	na	<5	3.1	3.5	12	3.3	4.0	25	na	na	<5	na	na	<5	3.9	4.5	8	3.4	4.0	34	na	na	<5	3.0	4.0	5	3.6	3.5	10	3.6	3.5	10	3.2	4.0	5	3.6	4.0	14	4.7	5.0	9	3.4	4.0	9
Financial covenants	3.4	4.0	161	2.7	3.0	7	na	na	<5	3.5	4.0	13	3.6	4.0	25	na	na	<5	na	na	<5	3.5	4.5	8	3.5	4.0	35	3.2	5.0	5	3.0	2.0	5	3.4	4.5	10	3.2	3.5	10	4.8	5.0	5	3.0	3.0	13	3.0	3.5	10	3.7	4.0	9
Interest rates are too high	2.4	2.0	161	1.6	1.0	7	na	na	<5	2.2	2.0	13	2.6	3.0	25	na	na	<5	na	na	<5	3.0	3.0	9	2.0	2.0	35	2.0	2.0	5	1.8	2.0	5	3.0	3.5	10	2.6	3.0	10	2.2	3.0	5	2.2	3.0	13	2.5	2.5	8	3.0	3.0	9
Credit spreads are too wide	2.3	2.0	157	1.6	1.0	7	na	na	<5	1.8	1.0	12	2.5	2.0	24	na	na	<5	na	na	<5	3.1	3.0	9	2.1	2.0	35	na	na	<5	2.6	4.0	5	2.4	2.5	10	2.6	3.0	10	2.4	3.0	5	2.1	2.0	13	2.6	2.5	8	2.8	2.5	8
Transaction costs	2.0	2.0	161	1.6	1.0	7	na	na	<5	1.5	1.0	13	2.2	2.0	25	na	na	<5	na	na	<5	2.7	3.0	9	1.6	1.0	34	2.0	2.0	5	1.6	1.0	5	1.9	2.0	10	2.6	2.5	10	2.4	2.0	5	1.8	2.0	14	2.8	3.0	8	2.6	3.0	9
More debt would constrain us financially	2.9	3.0	161	2.7	2.5	6	na	na	<5	2.7	3.0	13	3.2	3.0	25	na	na	<5	na	na	<5	3.1	3.0	9	2.7	3.0	35	2.4	3.0	5	2.2	3.0	5	3.2	4.0	10	3.3	4.0	10	2.4	3.0	5	2.9	3.0	14	2.9	3.0	8	3.0	2.0	9
More debt would cause financial distress	2.6	3.0	156	1.8	1.0	6	na	na	<5	2.8	3.0	12	3.0	3.0	25	na	na	<5	na	na	<5	2.9	4.0	9	2.5	2.0	34	2.8	2.0	5	1.8	1.0	5	2.9	3.5	10	2.7	3.0	10	2.6	3.0	5	2.2	2.0	14	2.0	2.0	8	3.1	3.0	8
Investors unaware of our opportunities	1.3	1.0	153	0.7	1.0	7	na	na	<5	0.5	0.0	12	1.3	1.0	24	na	na	<5	na	na	<5	1.9	2.0	9	1.4	1.0	33	0.6	0.0	5	0.4	0.0	5	2.1	2.0	9	1.7	2.0	10	1.8	2.0	5	1.4	2.0	13	1.6	1.0	8	1.4	1.0	8
Investors distrust our judgement	1.4	1.0	153	0.4	0.0	7	na	na	<5	0.6	0.0	12	1.4	1.0	23	na	na	<5	na	na	<5	2.1	2.0	9	1.4	1.0	33	0.6	0.0	5	0.6	0.0	5	1.8	2.0	10	1.6	1.5	10	1.8	2.0	5	1.3	1.0	13	1.5	1.0	8	1.6	1.0	8
We cannot raise any more debt	1.8	1.0	155	1.0	0.0	7	na	na	<5	1.5	0.0	13	2.2	1.0	23	na	na	<5	na	na	<5	2.7	3.0	9	1.6	1.0	34	na	na	<5	1.8	0.0	5	2.2	1.5	10	2.3	1.5	10	2.4	3.0	5	0.7	0.0	13	2.3	1.0	8	2.1	2.0	8
The costs of disclosure are too high	1.1	1.0	153	1.1	1.0	7	na	na	<5	0.8	0.0	13	1.5	1.0	23	na	na	<5	na	na	<5	1.4	1.0	9	0.9	1.0	34	na	na	<5	1.2	1.0	5	1.1	0.0	9	1.3	1.0	10	2.0	3.0	5	0.5	0.0	13	1.1	1.0	8	1.5	1.0	8
Not the cheapest source of financing	2.0	2.0	155	2.4	2.0	7	na	na	<5	1.1	0.5	12	2.3	2.0	23	na	na	<5	na	na	<5	2.2	2.0	9	1.8	2.0	34	0.4	0.0	5	1.4	1.0	5	2.3	2.5	10	2.4	2.0	10	2.2	3.0	5	1.2	1.0	13	2.4	1.0	8	3.1	4.0	8

Means and Medians in Percent

3.8: Factors Limiting Debt Usage by Ratings and Listing

Question: How important are the following factors in your decision not to use more debt in your capital structure?

Results of Question 3.8: Factors Limiting Debt Usage by Ratings and Listing																								
	Ratings									Listing														
	All			Investment Grade			Non-investment Grade			Not Rated			Undisclosed			Listed			Not Listed			Undisclosed		
	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N	\bar{x}	\hat{x}	N
Target debt level	3.6	4.0	161	3.7	4.0	67	4.0	4.0	20	na	na	<5	3.3	4.0	71	3.7	4.0	118	3.2	4.0	42	na	na	<5
Credit rating	3.5	4.0	159	4.1	4.0	68	4.0	4.0	20	na	na	<5	2.7	3.0	68	3.8	4.0	116	2.6	3.0	42	na	na	<5
Financial covenants	3.4	4.0	161	3.3	4.0	68	4.2	5.0	20	na	na	<5	3.4	4.0	70	3.5	4.0	117	3.3	4.0	43	na	na	<5
Interest rates are too high	2.4	2.0	161	2.3	2.0	67	2.8	3.0	20	na	na	<5	2.3	2.0	71	2.4	3.0	117	2.2	2.0	43	na	na	<5
Credit spreads are too wide	2.3	2.0	157	2.1	2.0	67	3.1	4.0	20	na	na	<5	2.2	2.0	67	2.5	2.0	115	1.9	2.0	41	na	na	<5
Transaction costs	2.0	2.0	161	1.9	2.0	66	2.5	2.0	20	na	na	<5	2.0	2.0	72	2.1	2.0	117	1.8	2.0	43	na	na	<5
More debt would constrain us financially	2.9	3.0	161	2.8	3.0	66	3.5	4.0	20	na	na	<5	2.8	3.0	72	3.0	3.0	117	2.8	3.0	43	na	na	<5
More debt would cause financial distress	2.6	3.0	156	2.3	2.0	64	3.5	4.0	20	na	na	<5	2.7	2.0	69	2.7	3.0	114	2.5	2.0	41	na	na	<5
Investors unaware of our opportunities	1.3	1.0	153	1.1	1.0	65	1.7	1.0	20	na	na	<5	1.5	1.0	65	1.4	1.0	112	1.1	1.0	40	na	na	<5
Investors distrust our judgement	1.4	1.0	153	1.1	1.0	66	1.7	1.0	20	na	na	<5	1.5	1.0	64	1.5	1.0	112	1.2	1.0	40	na	na	<5
We cannot raise any more debt	1.8	1.0	155	1.7	1.0	67	2.2	2.5	20	na	na	<5	1.9	1.0	65	1.8	1.0	112	1.8	1.0	42	na	na	<5
The costs of disclosure are too high	1.1	1.0	153	0.9	1.0	64	1.3	1.0	20	na	na	<5	1.2	1.0	66	1.2	1.0	112	1.0	1.0	40	na	na	<5
Not the cheapest source of financing	2.0	2.0	155	1.7	1.0	65	2.4	3.0	20	na	na	<5	2.0	2.0	67	2.1	2.0	114	1.8	1.0	40	na	na	<5

Means and Medians in Percent

3.9: Factors Limiting Equity Usage

Question: How important are the following factors in your decision not to use more equity in your capital structure?

Results of Question 3.9: Factors Limiting Equity Usage										
	Not Important							Very Important		<i>N</i>
	0	1	2	3	4	5	\bar{x}	\tilde{x}		
Debt target	20%	16%	15%	21%	17%	10%	2.3	2.0	149	
Equity is undervalued	25%	14%	11%	10%	23%	17%	2.4	2.5	146	
EPS dilution	21%	4%	7%	19%	30%	18%	2.9	3.0	152	
Share Price	22%	5%	14%	13%	29%	18%	2.7	3.0	152	
Ownership stakes of key shareholders	21%	9%	13%	16%	20%	21%	2.7	3.0	151	
Investors unaware of our opportunities	40%	24%	15%	15%	6%	1%	1.2	1.0	144	
Investors distrust our judgement	42%	22%	13%	14%	7%	2%	1.3	1.0	141	
We cannot raise any more equity	43%	14%	7%	16%	7%	13%	1.7	1.0	148	
Transaction Costs	29%	18%	19%	18%	14%	3%	1.8	2.0	148	
Our shares are illiquid	43%	17%	10%	11%	13%	6%	1.5	1.0	144	
The costs of disclosure are too high	45%	27%	10%	11%	7%	0%	1.1	1.0	143	
Not the cheapest source of financing	16%	9%	10%	16%	30%	19%	2.9	3.0	148	

3.9: Factors Limiting Equity Usage by Region

Question: How important are the following factors in your decision not to use more equity in your capital structure?

Results of Question 3.9: Factors Limiting Equity Usage by Region																														
	All			Asia excluding Japan			Australia & New Zealand			Eastern Europe, Middle East & Africa			Germany			Japan			Latin America			North America			Western Europe excluding Germany			Undisclosed		
	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N			
Debt target	2.3	2.0	149	2.9	3.0	21	na	na	<5	na	na	<5	2.0	2.0	32	1.9	2.0	15	2.4	2.5	8	2.0	2.0	22	2.7	3.0	43	na	na	<5
Equity is undervalued	2.4	2.5	146	3.4	4.0	21	na	na	<5	na	na	<5	1.8	1.5	30	2.9	3.0	15	2.3	2.5	8	3.4	4.0	22	1.7	1.0	42	na	na	<5
EPS dilution	2.9	3.0	152	3.9	4.0	23	na	na	<5	na	na	<5	2.0	2.0	32	3.8	4.0	16	1.5	2.0	8	3.7	4.0	22	2.6	3.0	43	na	na	<5
Share Price	2.7	3.0	152	3.8	4.0	23	na	na	<5	na	na	<5	1.8	1.5	32	4.0	4.0	16	1.9	2.0	8	3.8	4.0	23	2.1	2.0	42	na	na	<5
Ownership stakes of key shareholders	2.7	3.0	151	3.8	4.0	22	na	na	<5	na	na	<5	2.3	2.0	32	3.1	3.0	15	2.9	2.5	8	2.3	2.0	22	2.6	3.0	44	na	na	<5
Investors unaware of our opportunities	1.2	1.0	144	2.2	2.0	21	na	na	<5	na	na	<5	1.0	0.0	32	1.9	2.0	14	1.3	1.0	8	1.0	1.0	21	0.9	1.0	41	na	na	<5
Investors distrust our judgement	1.3	1.0	141	2.3	3.0	20	na	na	<5	na	na	<5	1.0	0.0	31	1.7	1.5	14	0.6	0.5	8	1.2	1.0	21	1.1	1.0	40	na	na	<5
We cannot raise any more equity	1.7	1.0	148	2.7	3.0	21	na	na	<5	na	na	<5	1.4	0.0	32	1.9	2.0	14	0.8	0.0	8	1.7	0.0	22	1.5	1.0	44	na	na	<5
Transaction Costs	1.8	2.0	148	3.2	4.0	22	na	na	<5	na	na	<5	1.7	2.0	32	1.8	2.0	14	1.4	1.5	8	1.5	1.5	22	1.4	1.0	42	na	na	<5
Our shares are illiquid	1.5	1.0	144	2.3	3.0	20	na	na	<5	na	na	<5	1.2	0.0	31	1.4	1.0	14	1.5	1.5	8	1.3	1.0	21	1.3	0.0	43	na	na	<5
The costs of disclosure are too high	1.1	1.0	143	2.2	3.0	21	na	na	<5	na	na	<5	1.1	1.0	32	1.4	1.0	14	0.9	1.0	8	0.6	0.0	21	0.7	0.0	41	na	na	<5
Not the cheapest source of financing	2.9	3.0	148	3.5	4.0	21	na	na	<5	na	na	<5	2.7	3.0	32	2.0	2.0	14	3.0	3.5	8	3.8	4.0	23	2.5	3.0	42	na	na	<5

Means and Medians in Percent

3.9: Factors Limiting Equity Usage by Industry

Question: How important are the following factors in your decision not to use more equity in your capital structure?

Results of Question 3.9: Factors Limiting Equity Usage by Industry																																																			
	All			Automobiles			Business Services			Chemicals			Consumer			Consumer Finance			Diversified/Conglomerates			Health Care & Pharmaceuticals			Industrials and Materials			Media			Metals and Mining			Oil and Gas			Technology			Telecommunications			Transportation Services			Utilities			Undisclosed & Other		
	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N												
Debt target	2.3	2.0	149	2.3	3.0	6	na	na	<5	2.2	2.0	12	1.9	1.5	22	na	na	<5	na	na	<5	2.8	2.5	8	2.4	2.5	34	na	na	<5	1.8	1.0	5	2.0	2.0	8	2.1	1.0	10	1.6	1.0	5	2.8	3.5	12	2.9	3.0	9	2.9	3.0	7
Equity is undervalued	2.4	2.5	146	2.0	1.0	5	na	na	<5	1.3	1.0	12	2.7	2.5	22	na	na	<5	na	na	<5	3.9	5.0	9	2.3	2.0	34	na	na	<5	2.8	3.0	5	2.1	1.5	8	2.9	3.5	10	2.6	4.0	5	2.3	2.5	12	1.5	1.0	8	2.8	3.0	6
EPS dilution	2.9	3.0	152	2.2	2.5	6	na	na	<5	2.4	3.0	13	2.9	3.0	22	na	na	<5	na	na	<5	3.4	4.0	9	2.5	3.0	34	na	na	<5	3.2	3.0	5	3.1	3.5	8	3.4	4.0	10	1.8	2.0	5	3.5	4.0	13	2.8	3.0	9	3.7	5.0	7
Share Price	2.7	3.0	152	2.3	2.5	6	na	na	<5	2.4	2.0	13	2.7	4.0	23	na	na	<5	na	na	<5	3.6	4.0	9	2.1	2.5	34	na	na	<5	2.8	3.0	5	3.0	3.0	8	2.9	3.0	10	2.4	2.0	5	2.9	4.0	13	3.2	4.0	9	3.6	4.0	7
Ownership stakes of key shareholders	2.7	3.0	151	2.3	2.0	6	na	na	<5	1.8	1.0	12	3.2	3.0	22	na	na	<5	na	na	<5	3.2	4.0	9	2.1	2.0	34	na	na	<5	2.0	2.0	5	3.9	4.0	9	2.5	3.0	10	2.8	3.0	5	3.1	3.0	13	2.6	3.0	9	1.9	2.0	7
Investors unaware of our opportunities	1.2	1.0	144	0.2	0.0	6	na	na	<5	0.6	0.0	12	1.6	1.0	21	na	na	<5	na	na	<5	2.2	2.0	9	1.2	1.0	33	na	na	<5	0.4	0.0	5	1.3	1.0	8	1.5	1.5	10	1.8	2.0	5	1.4	2.0	11	0.9	0.5	8	0.7	0.0	7
Investors distrust our judgement	1.3	1.0	141	0.2	0.0	6	na	na	<5	1.5	0.0	13	1.5	1.0	18	na	na	<5	na	na	<5	1.8	2.0	9	1.4	1.0	33	na	na	<5	1.0	0.0	5	1.6	1.0	7	1.3	1.0	10	1.8	2.0	5	0.9	0.0	11	0.9	0.5	8	0.7	0.0	7
We cannot raise any more equity	1.7	1.0	148	0.5	0.0	6	na	na	<5	1.8	0.0	12	2.5	3.0	21	na	na	<5	na	na	<5	2.4	3.0	9	1.4	0.0	34	na	na	<5	1.2	0.0	5	1.7	2.0	9	2.2	2.0	10	3.0	3.0	5	1.0	1.0	12	1.1	1.0	8	0.9	0.0	7
Transaction Costs	1.8	2.0	148	0.8	0.5	6	na	na	<5	0.9	0.0	13	2.1	2.5	22	na	na	<5	na	na	<5	1.9	2.0	9	1.8	2.0	34	na	na	<5	2.2	2.0	5	1.6	2.0	8	2.6	2.0	10	2.6	3.0	5	1.6	1.5	12	1.5	1.0	8	2.1	2.0	7
Our shares are illiquid	1.5	1.0	144	0.2	0.0	6	na	na	<5	0.8	0.0	12	2.0	1.5	20	na	na	<5	na	na	<5	1.9	1.0	9	1.4	1.0	34	na	na	<5	1.4	1.0	5	1.1	0.5	8	1.9	1.5	10	2.6	3.0	5	1.7	2.0	11	0.9	0.0	9	2.0	2.0	7
The costs of disclosure are too high	1.1	1.0	143	0.2	0.0	6	na	na	<5	0.3	0.0	12	1.2	1.0	21	na	na	<5	na	na	<5	1.3	1.0	9	1.1	1.0	33	na	na	<5	1.2	1.0	5	0.8	0.0	8	1.8	2.0	10	na	na	<5	0.9	1.0	11	1.1	1.0	8	1.3	0.0	7
Not the cheapest source of financing	2.9	3.0	148	1.8	1.5	6	na	na	<5	2.9	3.5	12	3.0	4.0	23	na	na	<5	na	na	<5	3.2	4.0	9	2.8	3.0	34	na	na	<5	2.6	2.0	5	2.3	2.0	8	3.8	4.0	10	2.2	3.0	5	3.1	4.0	12	3.0	4.0	8	3.6	4.0	7

Means and Medians in Percent

3.9: Factors Limiting Equity Usage by Ratings and Listing

Question: How important are the following factors in your decision not to use more equity in your capital structure?

Results of Question 3.9: Factors Limiting Equity Usage by Ratings and Listing																											
	Ratings									Listing																	
	All			Investment Grade			Non-investment Grade			Not Rated			Undisclosed			Listed			Not Listed			Undisclosed					
	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N
Debt target	2.3	2.0	149	2.5	3.0	62	2.2	2.5	20	na	na	<5	2.1	2.0	64	2.4	3.0	112	1.9	1.5	36	na	na	<5			
Equity is undervalued	2.4	2.5	146	2.6	3.0	58	2.8	3.5	20	na	na	<5	2.1	2.0	65	3.0	3.5	110	0.8	0.0	35	na	na	<5			
EPS dilution	2.9	3.0	152	3.3	4.0	62	3.2	3.5	20	na	na	<5	2.4	3.0	67	3.5	4.0	114	0.9	0.0	37	na	na	<5			
Share Price	2.7	3.0	152	3.3	4.0	62	3.1	3.5	20	na	na	<5	2.1	2.0	67	3.4	4.0	115	0.6	0.0	36	na	na	<5			
Ownership stakes of key shareholders	2.7	3.0	151	2.6	3.0	61	3.1	3.0	20	na	na	<5	2.6	3.0	67	2.9	3.0	115	2.2	2.0	35	na	na	<5			
Investors unaware of our opportunities	1.2	1.0	144	1.0	1.0	59	1.5	1.5	20	na	na	<5	1.3	1.0	62	1.5	1.0	108	0.6	0.0	35	na	na	<5			
Investors distrust our judgement	1.3	1.0	141	1.1	0.0	59	1.4	1.0	19	na	na	<5	1.4	1.0	60	1.4	1.0	104	1.0	0.0	36	na	na	<5			
We cannot raise any more equity	1.7	1.0	148	1.5	1.0	62	1.9	1.5	20	na	na	<5	1.7	1.0	63	1.8	1.0	111	1.3	0.0	36	na	na	<5			
Transaction Costs	1.8	2.0	148	1.5	1.0	60	2.2	2.0	20	na	na	<5	1.9	2.0	65	1.9	2.0	111	1.6	1.0	36	na	na	<5			
Our shares are illiquid	1.5	1.0	144	1.3	0.0	59	2.0	1.5	20	na	na	<5	1.5	1.0	62	1.6	1.0	109	1.4	0.0	34	na	na	<5			
The costs of disclosure are too high	1.1	1.0	143	0.9	0.0	59	1.4	1.0	20	na	na	<5	1.1	1.0	61	1.2	1.0	107	0.7	0.0	35	na	na	<5			
Not the cheapest source of financing	2.9	3.0	148	3.2	4.0	61	2.8	3.0	20	na	na	<5	2.6	3.0	64	3.1	4.0	112	2.5	3.0	35	na	na	<5			

Means and Medians in Percent

3.10: Hybrid Securities by Region, Ratings and Listing

Question: Has your firm issued equities or equity-related securities with the following features?

Results of Question 3.10: Hybrid Securities by Region, Ratings and Listing											
	Preferred or preference shares (nonconvertible)	Convertible preferred or preference shares	Capped appreciation preferred shares	Supervoting shares	Trust preferred securities	Convertible debt	Units consisting of debt with warrants	Mandatory convertible securities	Separately issued warrants	Share of listed subsidiary	<i>N</i>
All	26%	14%	2%	3%	2%	64%	20%	5%	8%	14%	66
Region											
Asia excluding Japan	46%	23%	0%	0%	0%	62%	8%	0%	8%	8%	13
Australia & New Zealand	na	na	na	na	na	na	na	na	na	na	<5
Eastern Europe, Middle East & Africa	na	na	na	na	na	na	na	na	na	na	<5
Germany	9%	9%	0%	0%	0%	73%	9%	9%	0%	45%	11
Japan	0%	0%	0%	0%	0%	83%	75%	8%	0%	8%	12
Latin America	na	na	na	na	na	na	na	na	na	na	<5
North America	36%	36%	9%	9%	9%	36%	0%	9%	9%	0%	11
Western Europe excluding Germany	21%	7%	0%	0%	0%	79%	14%	0%	14%	14%	14
Undisclosed	na	na	na	na	na	na	na	na	na	na	<5
Ratings											
Investment Grade	29%	11%	0%	4%	4%	61%	14%	7%	7%	18%	28
Non-investment Grade	20%	13%	7%	7%	0%	67%	47%	0%	7%	7%	15
Not Rated	na	na	na	na	na	na	na	na	na	na	<5
Undisclosed	25%	20%	0%	0%	0%	60%	10%	5%	10%	15%	20
Listing											
Listed	21%	9%	0%	0%	2%	72%	21%	5%	7%	12%	58
Not Listed	71%	57%	14%	29%	0%	0%	14%	0%	0%	29%	7
Undisclosed	na	na	na	na	na	na	na	na	na	na	<5

3.10: Hybrid Securities by Industry

Question: Has your firm issued equities or equity-related securities with the following features?

Results of Question 3.10: Hybrid Securities by Industry											
	Preferred or preference shares (nonconvertible)	Convertible preferred or preference shares	Capped appreciation preferred shares	Supervoting shares	Trust preferred securities	Convertible debt	Units consisting of debt with warrants	Mandatory convertible securities	Separately issued warrants	Share of listed subsidiary	<i>N</i>
All	26%	14%	2%	3%	2%	64%	20%	5%	8%	14%	66
Industry											
Automobiles	na	na	na	na	na	na	na	na	na	na	<5
Business Services	na	na	na	na	na	na	na	na	na	na	<5
Chemicals	na	na	na	na	na	na	na	na	na	na	<5
Consumer	38%	0%	0%	0%	0%	63%	25%	0%	13%	13%	8
Consumer Finance	na	na	na	na	na	na	na	na	na	na	<5
Diversified & Conglomerates	na	na	na	na	na	na	na	na	na	na	<5
Health Care & Pharmaceuticals	na	na	na	na	na	na	na	na	na	na	<5
Industrials and Materials	29%	7%	0%	0%	7%	64%	36%	0%	0%	14%	14
Media	na	na	na	na	na	na	na	na	na	na	<5
Metals & Mining	na	na	na	na	na	na	na	na	na	na	<5
Oil & Gas	na	na	na	na	na	na	na	na	na	na	<5
Technology	29%	29%	0%	0%	0%	71%	0%	0%	29%	0%	7
Telecommunications	na	na	na	na	na	na	na	na	na	na	<5
Transportation Services	0%	17%	0%	0%	0%	83%	0%	0%	0%	17%	6
Utilities	na	na	na	na	na	na	na	na	na	na	<5
Undisclosed & Other	na	na	na	na	na	na	na	na	na	na	<5

3.11: Factors Affecting Hybrid Issuance

Question: If so, which factors were more important in your decision to issue multiple classes of equity securities or equity-linked securities?

Results of Question 3.11: Factors Affecting Hybrid Issuance										
	Not Important					Very Important		\bar{x}	\tilde{x}	<i>N</i>
	0	1	2	3	4	5				
Risk-return preferences of new investors	23%	11%	21%	16%	23%	7%	2.3	2.0	57	
Governance preferences of new investors	45%	20%	13%	9%	11%	2%	1.3	1.0	55	
Constraints from existing investors	35%	24%	13%	11%	13%	5%	1.6	1.0	55	
Tax considerations	30%	25%	14%	16%	13%	2%	1.6	1.0	56	
Accounting considerations	31%	21%	10%	21%	12%	5%	1.8	1.0	58	
Regulatory considerations	38%	23%	13%	14%	7%	5%	1.5	1.0	56	
Listing requirements	41%	23%	11%	11%	9%	5%	1.4	1.0	56	
Limited capacity for regular equity	31%	24%	15%	13%	9%	7%	1.7	1.0	54	
Attractive pricing as an issuer	20%	3%	5%	18%	32%	22%	3.0	4.0	60	
Seeking to broaden base of investors	26%	2%	11%	18%	33%	11%	2.6	3.0	57	
Rating Agencies equity credit	31%	9%	14%	21%	14%	12%	2.1	2.0	58	

3.11: Factors Affecting Hybrid Issuance by Region

Question: If so, which factors were more important in your decision to issue multiple classes of equity securities or equity-linked securities?

Results of Question 3.11: Factors Affecting Hybrid Issuance by Region																														
	All			Asia excluding Japan			Australia & New Zealand			Eastern Europe, Middle East & Africa			Germany			Japan			Latin America			North America			Western Europe excluding Germany			Undisclosed		
	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N	\bar{x}	\bar{x}	N			
Risk-return preferences of new investors	2.3	2.0	57	3.2	3.5	10	na	na	<5	na	na	<5	1.0	0.0	12	2.6	2.5	10	na	na	<5	2.1	2.0	10	2.3	2.0	11	na	na	<5
Governance preferences of new investors	1.3	1.0	55	3.1	3.0	9	na	na	<5	na	na	<5	0.9	0.0	12	1.1	1.0	9	na	na	<5	0.4	0.0	10	1.1	1.0	11	na	na	<5
Constraints from existing investors	1.6	1.0	55	2.8	3.0	9	na	na	<5	na	na	<5	1.0	0.0	12	1.4	1.0	9	na	na	<5	1.5	0.5	10	1.0	1.0	11	na	na	<5
Tax considerations	1.6	1.0	56	2.7	3.0	10	na	na	<5	na	na	<5	1.3	1.0	12	1.1	1.0	9	na	na	<5	1.2	1.0	10	1.2	1.0	11	na	na	<5
Accounting considerations	1.8	1.0	58	2.7	3.0	10	na	na	<5	na	na	<5	1.5	0.5	12	1.5	1.0	10	na	na	<5	1.2	0.5	10	1.8	1.0	12	na	na	<5
Regulatory considerations	1.5	1.0	56	3.1	3.0	9	na	na	<5	na	na	<5	0.8	0.0	12	1.2	1.0	9	na	na	<5	1.0	0.0	10	1.5	1.0	12	na	na	<5
Listing requirements	1.4	1.0	56	3.2	3.5	10	na	na	<5	na	na	<5	1.0	0.0	12	1.2	1.0	9	na	na	<5	1.0	0.0	10	0.6	0.0	11	na	na	<5
Limited capacity for regular equity	1.7	1.0	54	2.6	3.0	9	na	na	<5	na	na	<5	1.8	1.5	12	1.0	1.0	9	na	na	<5	2.1	2.0	9	1.2	1.0	11	na	na	<5
Attractive pricing as an issuer	3.0	4.0	60	3.7	4.0	10	na	na	<5	na	na	<5	2.2	3.0	13	3.5	4.0	11	na	na	<5	2.3	3.0	10	3.4	4.0	12	na	na	<5
Seeking to broaden base of investors	2.6	3.0	57	3.4	4.0	9	na	na	<5	na	na	<5	2.2	3.0	13	2.9	3.0	10	na	na	<5	2.2	2.5	10	2.8	3.0	11	na	na	<5
Rating Agencies equity credit	2.1	2.0	58	3.0	3.0	10	na	na	<5	na	na	<5	2.2	2.0	13	2.4	2.0	9	na	na	<5	1.7	0.0	11	1.8	1.0	11	na	na	<5

Means and Medians in Percent

3.11: Factors Affecting Hybrid Issuance by Industry

Question: If so, which factors were more important in your decision to issue multiple classes of equity securities or equity-linked securities?

Results of Question 3.11: Factors Affecting Hybrid Issuance by Industry																																																												
	All			Automobiles			Business Services			Chemicals			Consumer			Consumer Finance			Diversified/Conglomerates			Health Care & Pharmaceuticals			Industrials and Materials			Media			Metals and Mining			Oil and Gas			Technology			Telecommunications			Transportation Services			Utilities			Undisclosed & Other											
	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N																					
Risk-return preferences of new investors	2.3	2.0	57	na	na	<5	na	na	<5	na	na	<5	1.7	0.5	6	na	na	<5	na	na	<5	na	na	<5	2.5	2.0	12	na	na	<5	na	na	<5	na	na	<5	2.1	3.0	7	na	na	<5	na	na	<5	na	na	<5	na	na	<5									
Governance preferences of new investors	1.3	1.0	55	na	na	<5	na	na	<5	na	na	<5	1.3	0.5	6	na	na	<5	na	na	<5	na	na	<5	na	na	<5	1.1	1.0	12	na	na	<5	na	na	<5	na	na	<5	2.1	3.0	7	na	na	<5	na	na	<5	na	na	<5	na	na	<5						
Constraints from existing investors	1.6	1.0	55	na	na	<5	na	na	<5	na	na	<5	2.0	1.5	6	na	na	<5	na	na	<5	na	na	<5	na	na	<5	2.1	2.0	12	na	na	<5	na	na	<5	na	na	<5	2.1	3.0	7	na	na	<5	na	na	<5	na	na	<5	na	na	<5						
Tax considerations	1.6	1.0	56	na	na	<5	na	na	<5	na	na	<5	1.7	1.5	6	na	na	<5	na	na	<5	na	na	<5	na	na	<5	1.6	1.5	12	na	na	<5	na	na	<5	na	na	<5	1.9	1.0	7	na	na	<5	na	na	<5	na	na	<5	na	na	<5						
Accounting considerations	1.8	1.0	58	na	na	<5	na	na	<5	na	na	<5	1.7	1.0	7	na	na	<5	na	na	<5	na	na	<5	na	na	<5	2.0	2.5	12	na	na	<5	na	na	<5	na	na	<5	1.7	1.0	7	na	na	<5	2.0	2.0	5	na	na	<5	na	na	<5	na	na	<5			
Regulatory considerations	1.5	1.0	56	na	na	<5	na	na	<5	na	na	<5	0.7	0.0	6	na	na	<5	na	na	<5	na	na	<5	na	na	<5	1.5	1.5	12	na	na	<5	na	na	<5	na	na	<5	1.9	1.0	7	na	na	<5	na	na	<5	na	na	<5	na	na	<5	na	na	<5			
Listing requirements	1.4	1.0	56	na	na	<5	na	na	<5	na	na	<5	1.0	0.5	6	na	na	<5	na	na	<5	na	na	<5	na	na	<5	1.2	1.0	12	na	na	<5	na	na	<5	na	na	<5	1.7	1.0	7	na	na	<5	3.0	4.0	5	na	na	<5	na	na	<5	na	na	<5			
Limited capacity for regular equity	1.7	1.0	54	na	na	<5	na	na	<5	na	na	<5	1.3	1.0	6	na	na	<5	na	na	<5	na	na	<5	na	na	<5	1.5	2.0	12	na	na	<5	na	na	<5	na	na	<5	1.9	2.0	7	na	na	<5	na	na	<5	na	na	<5	na	na	<5	na	na	<5			
Attractive pricing as an issuer	3.0	4.0	60	na	na	<5	na	na	<5	na	na	<5	2.4	3.0	7	na	na	<5	na	na	<5	na	na	<5	na	na	<5	3.5	4.0	13	na	na	<5	na	na	<5	na	na	<5	3.0	3.0	7	na	na	<5	4.0	4.0	5	na	na	<5	na	na	<5	na	na	<5	na	na	<5
Seeking to broaden base of investors	2.6	3.0	57	na	na	<5	na	na	<5	na	na	<5	1.9	0.0	7	na	na	<5	na	na	<5	na	na	<5	na	na	<5	2.4	3.0	12	na	na	<5	na	na	<5	na	na	<5	2.7	3.0	7	na	na	<5	na	na	<5	na	na	<5	na	na	<5	na	na	<5	na	na	<5
Rating Agencies equity credit	2.1	2.0	58	na	na	<5	na	na	<5	na	na	<5	1.5	0.5	6	na	na	<5	na	na	<5	na	na	<5	na	na	<5	2.4	2.0	13	na	na	<5	na	na	<5	na	na	<5	2.6	3.0	7	na	na	<5	2.6	3.0	5	na	na	<5	na	na	<5	na	na	<5	na	na	<5

Means and Medians in Percent

3.11: Factors Affecting Hybrid Issuance by Ratings and Listing

Question: If so, which factors were more important in your decision to issue multiple classes of equity securities or equity-linked securities?

Results of Question 3.11: Factors Affecting Hybrid Issuance by Ratings and Listing																								
	Ratings									Listing														
	All			Investment Grade			Non-Investment Grade			Not Rated			Undisclosed			Listed			Not Listed			Undisclosed		
	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N	\bar{x}	\tilde{x}	N
Risk-return preferences of new investors	2.3	2.0	57	2.1	2.0	24	2.1	2.0	13	na	na	<5	2.6	3.0	17	2.3	2.0	50	2.0	2.0	6	na	na	<5
Governance preferences of new investors	1.3	1.0	55	1.0	0.0	23	1.5	1.0	13	na	na	<5	1.3	0.5	16	1.2	1.0	48	1.7	1.0	6	na	na	<5
Constraints from existing investors	1.6	1.0	55	1.0	1.0	23	2.5	2.0	13	na	na	<5	1.7	1.0	16	1.5	1.0	48	1.7	1.0	6	na	na	<5
Tax considerations	1.6	1.0	56	1.4	1.0	23	1.4	1.0	13	na	na	<5	1.8	1.0	17	1.4	1.0	48	2.4	2.0	7	na	na	<5
Accounting considerations	1.8	1.0	58	1.7	1.0	23	1.9	1.5	14	na	na	<5	1.5	1.0	18	1.7	1.0	50	1.9	2.0	7	na	na	<5
Regulatory considerations	1.5	1.0	56	1.3	1.0	24	1.5	2.0	13	na	na	<5	1.4	1.0	16	1.4	1.0	48	1.4	1.0	7	na	na	<5
Listing requirements	1.4	1.0	56	1.2	1.0	23	1.2	1.0	13	na	na	<5	1.4	1.0	17	1.5	1.0	49	0.8	0.0	6	na	na	<5
Limited capacity for regular equity	1.7	1.0	54	1.9	1.5	22	1.8	2.0	13	na	na	<5	1.1	1.0	16	1.7	1.0	47	2.0	1.5	6	na	na	<5
Attractive pricing as an issuer	3.0	4.0	60	3.0	4.0	25	2.9	4.0	15	na	na	<5	3.1	4.0	17	3.3	4.0	53	1.5	1.0	6	na	na	<5
Seeking to broaden base of investors	2.6	3.0	57	2.7	3.5	24	2.4	3.0	14	na	na	<5	2.5	3.0	16	2.8	3.0	50	1.2	0.5	6	na	na	<5
Rating Agencies equity credit	2.1	2.0	58	2.2	2.0	25	2.4	3.0	13	na	na	<5	1.6	1.0	17	2.2	2.0	51	2.0	2.0	6	na	na	<5

Means and Medians in Percent

Corporate Financial Policies and Practices Series

Following an extensive survey of Global Corporate Financial Policies and Practices, undertaken jointly with Professor Henri Servaes (London Business School) and Professor Peter Tufano (Harvard Business School), along with our secondary project sponsors, the Global Association of Risk Professionals (GARP), we are pleased to provide corporate clients with extensive information covering:

Research Papers	Published
CFO Views on the Importance and Execution of the Finance Function	Jan 2006
The Theory and Practice of Corporate Capital Structure	Jan 2006
The Theory and Practice of Corporate Debt Structure	Feb 2006
The Theory and Practice of Corporate Liquidity Policy	Jan 2006
The Theory and Practice of Corporate Dividend and Share Repurchase Policy	Feb 2006
The Theory and Practice of Corporate Risk Management Policy	Feb 2006
The Questions and Sample of the Global Survey of Corporate Financial Policies and Practices	Jan 2006

The above reports can be accessed, free of charge, online at: www.dbbonds.com/lsg/reports.jsp. Alternatively you can order a CD by sending an email to: finance.survey@db.com.

In addition to the abovementioned research papers, both the website and CD contain streaming video of Professors Servaes and Tufano presenting an overview of the results at a Deutsche Bank hosted conference.

Disclaimer

This information is provided as an accommodation for educational purpose only and does not create any legally binding obligations on Deutsche Bank AG London and/or its affiliates (collectively "DB"). DB's provision of this information does not constitute an offer to sell or a solicitation of an offer to buy any instrument or service. This document and the information contained herein does not constitute investment advice and DB is not acting in a fiduciary capacity with respect to any party. The information contained in this document is based on material we believe to be reliable; however, we do not represent that it is accurate, current, complete, or error free. The information used was taken from a sample group and may not be indicative of the market as a whole. Results were produced from survey participants and DB is relying on their statements. Assumptions, estimates and opinions contained in this document are as of the date of the document and are subject to change without notice. The reliability, accuracy, completeness or timeliness of the information contained in this document cannot be guaranteed and therefore you should not use this information to make any investment decision. The information contained herein is made available to you on the basis that DB retains all respective intellectual property and other rights in and to the information. You may not engage in any secondary distribution of this document without the express written permission of DB. DB SPECIFICALLY DISCLAIMS ALL LIABILITY FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL OR OTHER LOSSES OR DAMAGES INCLUDING LOSS OF PROFITS INCURRED BY YOU OR ANY THIRD PARTY THAT MAY ARISE FROM ANY RELIANCE ON THIS DOCUMENT OR FOR THE RELIABILITY, ACCURACY, COMPLETENESS OR TIMELINESS THEREOF. Deutsche Bank Securities, Inc., a member of the NYSE, NASD and SIPC, a subsidiary of Deutsche Bank AG, conducts investment banking and securities activities in the United States. Deutsche Bank AG London Branch is a member of the LSE and regulated by the FSA.

Copyright© 2006 Deutsche Bank AG.