Corporate Finance Practices in India: A Survey

Manoj Anand

The present study surveys 81 CFOs of India to find out about their corporate finance practices vis-a-vis capital budgeting decisions, cost of capital, capital structure, and dividend policy decisions. It analyses the responses by the firm characteristics like firm size, profitability, leverage, P/E ratio, CFO's education, and the sector. The analysis reveals that practitioners do use the basic corporate finance tools that the professional institutes and business schools have taught for years to a great extent. The study also reveals that the corporate finance practices vary with firm size.

Manoj Anand is a member of the faculty in the Finance and Accounting Area at the University Business School, Punjab University, Chandigarh, e-mail: manand@mdi.ac.in

Introduction

The best-known field studies about the practices of corporate finance are Lintner's (1956) path-breaking analysis of dividend policy and Graham and Harvey's (2001) study on capital budgeting, cost of capital, and capital structure. It is believed that the findings of this study in the context of India will be of use to academia and practitioners in learning how corporate India operates, developing new theories, and identifying areas where finance theory is not implemented.

The present survey is different from the previous surveys* in a number of ways. First, the scope of the present survey is broader as it examines capital budgeting, cost of capital, capital structure, and dividend policy decisions and explores each area in depth. Second, the study surveys a large cross-section of 474 private sector and 51 public sector top firms of corporate India based on market capitalization. In all, 81 Chief Financial Officers (CFOs) from a cross-section of the firms responded to the survey with a response rate of 15.43 per cent. Third, the study analyses the responses conditional on firm characteristics. It examines the relationship of the executives' response with firm size, profitability, risk, growth, CFO's education, and the sector. By testing whether responses differ across these characteristics, the study throws light on the implications of various finance theories concerning firm size, risk, and growth.

' See, for example, Lintner (1956); Brigham (1975); Porwal (1976); Gitman and Forrester (1977); Gitman and Mercurio (1982); Moore and Reichert (1983), Stanley and Block (1984), Baker, Farrelly, and Edelman (1985); Wong, Farragher and Leung (1987); Pandey (1989); Pinegar and Wilbricht (1989); Wansley, Lane, and Sarkar (1989); Bierman (1993); Drury, Braund and Tayles (1993); Sangster (1993); Donaldson (1994); Epps and Mitchem (1994); Gilbert and Reichert (1995); Harris and Ramsay (1995); Jog and Srivastava (1995); Poterba and Summers (1995); Trahan and Gitman (1995); Billingsley and Smith (1996); Cherukuri (1996); Helwege and Dang (1996); Shao and Shao (1996); Chadwell-Hatfield, *et al.* (1997);); Bodnar, Hayt, and Marston (1998); Bruner, *et al.,* (1998); Block (1999); Kester and Chang (1999); Mohanty (1999); Fan and So (2000); and Graham and Harvey (2001).

Methodology

Research Design

The survey planned to identify corporate finance practices in India and focused on four areas: capital budgeting, cost of capital, capital structure, and dividend policy. For this purpose, a draft questionnaire was developed based on a comprehensive review of the existing literature. It was circulated to a group of prominent academics and CFOs for feedback. Their suggestions were incorporated and the questionnaire was revised. The final questionnaire contained ten questions.*

The survey asked the CFOs to respond to most of the questions on capital budgeting, cost of capital, and capital structure on the Likert scale of 0 to 5 (where 0 means "not used;" 1 means "unimportant;" and 5 means "very important"). This approach provided data on the method used and relative importance of each method in the decision-making process (Wong, Farragher and Leung, 1987). The questions on dividend policy sought the opinion of the management on a scale of -2 to +2 (where -2 means "definitely do not agree;" 0 means "neither agree nor disagree;" and +2 means "definitely agree").

Every year, *Business Today* features a report on India's most valuable 500 companies and ranks them based on their market capitalization. In its issue dated October 06, 2000, it carried a report of 500 companies in the private sector and 75 most valuable PSUs for the year 1999-2000. These constitute the universe of the corporate India for the present study. The said list included 26 non-banking financial companies (NBFCs) and banks in the private sector and 24 in the public sector category but they have been excluded as the NBFCs and banks are beyond the scope of the present study. Thus, the universe consisted of 474 firms in the private sector and 51 firms in the public sector.

Delivery and Response

The questionnaire was sent to the CFOs of sample firms through mail on May 8, 2001. Subsequently, the questionnaire was re-mailed for follow-up in order to maximize the response rate (Dillman, 1978). Eight questionnaires were undeliverable due to change in the address of the firms. It was indicated to the CFOs that the identity of the respondent companies and the executives would be kept strictly

*The questionnaire will be available from the author on request.

confidential and only aggregate generalizations would be published.

Eighty-one completed questionnaires were received by November 22, 2001 (a response rate of 15.43%). Given the length (four pages) and depth (ten questions with more than 80 sub-parts) of the questionnaire, this response rate compared favourably with other academic surveys.'

Summary Statistics and Data Issues

The financial statistics of the respondent companies were collected from secondary sources. The data on sales, export sales, assets, long-term debt to total funds ratio, price-earning ratio, and industry classification of respondent companies were taken from the *IRIS Book 2001: The Investor's Guide to Indian Corporates.* The data on return on capital employed (ROCE), economic value added (EVA), and weighted average cost of capital (WACC) were taken from the March 6, 2001 issue of *Business Today.* The market capitalization data in respect of respondent companies were taken from the October 14, 2001 issue of *Business Today.*

Table 1 presents the industry-wise composition of firms in the sample. The companies range from medium (19.8% of the sample firms have sales less than or equal to Rs 2 billion; 18.5% have assets less than or equal to Rs 2 billion; 37.2% have market capitalization less than or equal to Rs 2 billion) to very large (37% have sales greater than Rs 10 billion; 22.2% have assets greater than Rs 25 billion; and 20.5% have market capitalization greater than Rs 25 billion).

The median exports sales as a percentage of total sales is 7.42 per cent. The maximum ratio in the case of respondent firms is 96.6 per cent with a minimum of zero. The median ROCE is 12.8 per cent. Nearly 41 per cent of the respondents have ROCE greater than 15 per cent. The median EVA of respondent firms is negative and 34.6 per cent have positive EVA. The median WACC is 16.9 per cent and 19.8 per cent respondent firms have WACC less than or equal to 15 per cent.

The median debt to total value ratio of respondent firms is 21.26 per cent and 29.6 per cent have less than or equal to 5 per cent. The median price-earning ratio (maximum) is 23 and median

Graham and Harvey (2001) obtained a 9 per cent response rate in a survey mailed to 4,440 CFOs; Trahan and Gitman (1995) obtained a 12 per cent response rate in a survey mailed to 700 CFAs; and Billingsley and Smith (1996) obtained a 36.2 per cent response rate in a survey mailed to 243 CFOs.

Table 1: Composition of Sample

Industry	Sample Sine	Percentage
Automobiles and Auto Ancillary	09	11.11
Breweries and Distilleries	02	2.47
Chemicals and Pharmaceuticals	13	16.05
Cigarettes	02	2.47
Construction, Cement, and Building Material	02	2.47
Consumer Durable, Personal Care and Food Products	07	8.64
Diversified	03	3.70
Engineering and Capital Goods	09	11.11
Information Technology : Software	02	2.47
Iron Ore and Non-Ferrous Metals	02	2.47
Oil and Gas and Petrochemicals	08	9.88
Steel	06	7.41
Telecom Equipment	02	2.47
Textiles	02	2.47
Tyres	02	2.47
Others (Industrial Electronics, Logistics, Nylon Products, Paints, Plastic Packaging Goods, Photographic Films, Power Gen eration, Shipping, etc.)	10	12.35
Total	**81**	**100**

price-earning ratio (minimum) is 7.65. About 20 per cent respondent firms have price-earning ratio (minimum) greater than 20.

About 74 per cent of the respondents are chartered accountants. Nearly 88 per cent of the respondent firms are in the private sector as against 12.3 per cent in the public sector.

For the analysis, the firms have been classified into small and large; low growth and high growth; low profitability and high profitability; low risk and high risk; and low and high debt to total capital ratios based on the median values. The Mann-Whitney U test has been used to test whether responses differ across firm size, profitability, risk, growth, CFO's education, and sector. By testing whether responses differ across these characteristics, the study examines implications of various finance theories concerning firm size, risk, informational asymmetry, and managerial incentives.

Table 2 presents correlations for the demo-graphic variables. Large firms based on sales and assets have negative economic value added and large firms based on market capitalization have higher

proportion of export sales to total sales and positive EVA. The growth firms have higher proportion of export sales in total sales. The highly profitable firms based on ROCE and EVA have low ratio of long-term debt to total funds.

Limitations of the Study

The study pertains to only top corporates, but there are some limitations from the point of view of methodology of pure statistics. In any such survey, it is likely that the firms that did not respond on time may have a non-response bias. Whatever the respondents have said is believed to be their true response and hence, no statistical test has been performed to study non-response bias and the con-sistency of individuals' responses. Another limitation of the survey methodology is that it measures beliefs and not necessarily actions. The corporate finance literature is full of evidences of agency costs being incurred by shareholders, when the management does not actually maximize shareholders' wealth. The design of our survey allowed for a richer understand-ing of CFOs' responses in the context of EVA and non-EVA firms. All in all, the versatility in the characteristics of respondents and firms enabled the present study to examine the practice of corporate finance vis-a-vis theory.

Primary Objective of Corporate Management

Maximize Shareholder Value

The primary aim of corporate management is to maximize shareholders' value in a legal and ethical manner (Friedman, 1962, 1970; Rappaport, 1990; Jensen and Meckling, 1999; Besley and Brigham, 2000). Jensen and Meckling (1976) view the firm as a set of contracts. One of the contract claims is a residual claim (equity) on the firm's assets and cash flows. The managers, being the agents of the share-holders, may not always act in the best interest of the shareholders. Williamson (1963) argues that managers obtain value from certain kinds of expenses like company cars, office furniture, office location, and funds for discretionary investments. Donaldson (1984) observes that managers are influenced by survival, independence, and self-sufficiency motiva-tion and concludes that the basic financial objective of the managers is maximization of corporate wealth rather than shareholders' wealth.

Jensen and Meckling term the cost of resolving the conflicts between the shareholders and the

Table 2: Demographic Correlations of Control Variables from the Survey

	Size (Sales)	Size (Assets)	Size (Market Cap.)	Export Sales to Sales	ROCE	EVA	WACC	LTD/ TV CA	P/E Max.	P/E Min.	CA/ Non
Size (Assets)	0.707***										
Size (Mkt. Capitalization)	0.33***	0.36***									
Export Sales/ Sales	(-)0.142	-0.127	0.233**								
ROCE	(-)0.072	-0.211	0.303***	-0.096							
EVA	(-)0.438***	(-).764***	0.014	0.083	0.383***						
WACC	0.067	-0.007	0.063	-0.052	-0.073	0.003					
LTD/TV	(-)0.038	0.129	-0.217	0.041	(-)0.379***	(-).318***	-0.16				
P/E Max.	(-)0.119	-0.124	0.326***	0.355***	0.067	0.125	0.137	-0.123			
P/E Min.	{-)0.074	-0.119	0.368***	0.229**	0.158	0.196	0.19	-0.189	0.757***		
CA/Non CA	0.1	0.094	0.001	0.097	-0.048	-0.119	-0.035	0.119	0.055	0.113	
Sector (Private/ Public)	0.539***	0.524***	0.009	-0.065	-0.18	(-).423***	-0.128	-0.023	-0.156	-0.204	-0.121

***, " denote a significant difference at the 1%, 5% respectively.

management by structuring contracts, monitoring expenditure by the principal, bonding expenditure by the agent, and the opportunity loss as agency cost. Copeland and Weston (1983) argue that the shareholders face a trade-off between monitoring costs and forms of compensation which will cause the agent to always act in the shareholders' interests.

Brealey and Myers (2000) ask whether it is desirable for management to act in the selfish interests of the shareholders. The management must pursue actions that are optimal for a broad class of stakeholders rather than those that serve only to maximize shareholders' interests (see, for example, Mitchell, Agle and Wood, 1997; Agle, Mitchell and Sonnenfield, 1999; Berman *et al,* 1999; and Ogden and Watson, 1999). Bodie and Merton (2000) assume that the goal of maximizing shareholders' wealth does not necessarily conflict with other desirable social goals. Jensen (2001) argues that social welfare is maximized when each firm in an economy maximizes its total market value. It includes not only the value of equity but also market values of all other financial claims including debt, preferred "Stock, and warrants.

A considerable amount of evidence is available that show that management may not always act in the best interest of the investors particularly the shareholder. Jensen (1986) documents the example of oil industry in 1984 to demonstrate the agency cost of free cash flows. Roll (1986) surveys the

evidence on negative returns to the bidder on the announcement of acquisition. Management resists value-maximizing takeovers or resorts to certain anti-takeover amendments to corporate charters when it feels threatened by the loss of private benefit of control and thus reduces shareholders' wealth (see, for example, Walking and Long, 1984; DeAngelo and Rice, 1983; and Jarrell and Poulsen, 1988). Pandey and Bhat's (1990) study of 57 Indian companies finds that, in practice, managers in India do not aim at maximizing the market value of their firms while making financial decisions. The study concludes that the four important goals pursued by Indian companies are: ensuring the availability of funds, maximizing growth, maximizing operating profits before interest and taxes, and maximizing the rate of return on investment.

Results of the Present Study

The respondents were asked to indicate the relative importance of different objectives of management decision-making in corporate finance in their organization. While 85.10 per cent of the respondents consider the objective to maximize earnings before interest and tax (EBIT) and earnings per share (EPS) as very important/important, 75.90 per cent of the respondents consider the objective to maximize the spread between return on assets (ROA) and WACC, i.e., EVA objective as very important / important.

	% Very Important or Important	Mean	Size (Sales)		Size (Assets)		Size (Market Cap.)		Export Sales	
			Small	Large	Small	Large	Small	Large	Low	High
i) To Maximize EBIT/EPS	85.10	4.48	4.59	4.37	4.56	4.39	4.61	4.31	4.46	4.49
ii) To Maximize the Spread between ROI and WACC (EVA)	75.90	3.99	3.55	4.44***	3.55	4.44***	3.45	4.50***	3.68	4.27*
iii) To Maximize the Spread between CFROI and WACC (CVA)	54.40	3.32	3.00	3.63	2.90	3.73*	2.65	3.87***	3.21	3.41
iv) To Maximize Market Value Added (MVA) of the Firm	53.80	3.33	3.00	3.63*	2.95	3.68*	2.79	3.72**	3.33	3.32
v) To Reduce the Side Costs in the Form of Conflicts Amongst Various Stakeholders	33.00	2.39	2.21	2.58	2.38	2.40	1.97	2.74*	2.26	2.51

	% Very Important or Important	Mean	ROCE		EVA		WACC		Long-term Debt	
			Low	High	Low	High	Low	High	Low	High
i) To Maximize EBIT/EPS	85.10	4.48	4.50	4.45	4.43	4.53	4.49	4.46	4.54	4.41
ii) To Maximize the Spread between ROI and WACC (EVA)	75.90	3.99	3.87	4.10	4.11	3.88	3.87	4.10	4.00	4.00
iii) To Maximize the Spread between CFROI and WACC (CVA)	54.40	3.32	3.28	3.36	3.44	3.20	3.26	3.37	3.45	3.20
iv) To Maximize Market Value Added (MVA) of the Firm	53.80	3.33	3.43	3.23	3.63	3.03	3.23	3.41	3.46	3.20
v) To Reduce the Side Costs in the Form of Conflicts Amongst Various Stakeholders	33.00	2.39	2.23	2.55	2.38	2.40	2.33	2.45	2.54	2.25

	% Very Important or Important	Mean	P/E Max.		P/E Min.		CA		Sector	
			Low	High	Low	High	No	Yes	Private	Public
i) To Maximize EBIT/EPS	85.10	4.48	4.47	4.46	4.53	4.41	4.25	4.55	4.46	4.60
ii) To Maximize the Spread between ROI and WACC (EVA)	75.90	3.99	3.57	4.35**	3.71	4.22*	3.71	4.09	3.99	4.00
iii) To Maximize the Spread between CFROI and WACC (CVA)	54.40	3.32	3.11	3.49	3.06	3.54	3.15	3.37	3.24	3.89
iv) To Maximize Market Value Added (MVA) of the Firm	53.80	3.33	3.14	3.41	3.08	3.46	3.50	3.27	3.19	4.30*
v) To Reduce the Side Costs in the Form of Conflicts Amongst Various Stakeholders	33.00	2.39	2.19	2.78	2.26	2.70	2.10	2.49	2.41	2.30

* significant at the 0.10 level.

** significant at the 0.05 level.

*** significant at the 0.01 level.

It can be inferred from Table 3 that large firms (based on sales, assets, and market capitalization) are significantly more likely to follow the objective of maximization of EVA than small firms (rating of 4.5 versus 3.45). The high growth firms are significantly more likely to use maximizing EVA as a corporate objective than low growth firms (rating of 4.35 versus 3.57). The firms with high export sales are giving significantly more importance to the maximization of EVA as a corporate objective than the firms with low export sales (rating of 4.27 versus 3.68). There is no significant difference in the EVA as a corporate objective followed in the private and public sector.

Nearly 54 per cent of the respondents consider the objective to maximize the spread between cash flow return on investment (CFROI) and the WACC, i.e., CVA objective as very important/important. The large firms (based on market capitalization) are significantly more likely to follow maximizing CVA as a corporate objective at 5 per cent level of significance. Approximately 53 per cent of the respondents consider the objective to maximize the market value added (MVA) of the firm very important/important. The large firms (based on market capitalization) are significantly more likely to follow maximization of MVA as a corporate objective than small firms at 5 per cent level of significance. Interestingly, public sector is more likely to follow maximization of MVA as a corporate objective than private sector (rating of 4.30 versus 3.19). Surprisingly, the objective to reduce side costs in the form of conflicts amongst various stakeholders of the firm is not a very popular objective in corporate India. Only 33 per cent of the respondents consider it as an important objective.

Capital Budgeting

What are the capital budgeting tools and techniques being practised by the industry and how popular are they? Do firms use methods that help to maximize the firm value? The review of empirical surveys and studies helps to find answers to these questions.

Capital Budgeting Practices

Bierman (1993) finds that 73 of 74 Fortune 100 firms use discounted cash flow (DCF) analysis, with internal rate of return (IRR) being preferred over net present value (NPV). The payback period method also remains a very popular method in practice, though not as a primary technique. Ninety-three per cent of the respondents use company-wide WACC for discounting free cash flows and 72 per cent use

the discount rate applicable to project based on its risk characteristics.

Drury, Braund and Tayles' (1993) survey of 300 manufacturing companies with annual sales exceeding £ 20 million indicates that payback (86%) and IRR (80%) are the most widely used project appraisal methodologies. The most widely used project risk analysis technique is sensitivity analysis. Forty-nine per cent of the respondents do not use statistical analysis for risk analysis and 95 per cent of the respondents never use either CAPM or Monte Carlo simulation due to lack of understanding.

Petry and Sprow's (1993) study of 151 firms listed in the 1990 *Business Week* 1,000 firms indicates that about 60 per cent of the firms use the traditional payback period either as a primary or as a secondary method for capital budgeting decisions. Ninety per cent of the firms use NPV and IRR either as a primary or as a secondary capital budgeting decision methodology. Most of the financial managers indicated that either they had not heard of the problems of IRR (multiple rates of return, NPV, and IRR conflict) or such problems rarely occurred.

Cherukuri's (1996) survey of 74 Indian companies finds that 51 per cent use IRR as project appraisal criterion. The accounting rate of return and payback period methods are employed as supplementary decision criteria. Seventy per cent of the respondents use discount rate in the range of 14 to 17 per cent. Thirty-five per cent of the respondents use WACC as discount rate in appraising the projects. In an earlier study of 14 medium and large companies in India, Pandey (1989) finds that with the exception of one company, all use payback, about two-thirds use IRR, and about two-fifths NPV with payback and/or other methods. IRR is the second most popular method. Porwal's (1976) is yet another capital budgeting study in India.

Chadwell-Hatfield, *et al.'s* (1997) study corroborates the results of previous studies that firms use more than one criterion in project choice. More than 70 per cent of the surveyed firms consider a high IRR an important criterion in deciding which project to accept. About 84 per cent of the firms surveyed use NPV as one of the methods in appraising projects. Nearly two-thirds of the firms believe that acceptable project should have shorter payback period in addition to either high IRR or NPV. The discount rate used in the project evaluation is based on the project risk.

Kester and Chang (1999) survey 226 CEOs from Australia, Hong Kong, Indonesia, Malaysia,

Philippines, and Singapore and find that DCF techniques such as NPV/IRR are the most important techniques for project appraisal except in Hong Kong and Singapore. Sensitivity analysis and scenario analysis are found to be the most important tool for project risk assessment in all the countries. Nearly 72 per cent of the respondents in Australia use CAPM to calculate the cost of equity. The risk premium method (cost of debt plus risk premium) is most popular in Indonesia (53.4%) and Philippines (58.6%). The dividend yield plus growth rate method is the most popular method in Hong Kong (53.8%).

Graham and Harvey (2001) survey 392 CFOs and find that large firms rely heavily on present value techniques and CAPM, while small firms are relatively likely to use the payback criterion. The firms with high debt ratios are significantly more likely to use NPV and IRR than firms with low debt ratios. They find that CEOs with MBA are more likely than non-MBA CEOs to use net present value technique. Small firms use cost of equity capital based on "what investors tell us they require." CEOs with MBAs use CAPM as against non-MBA CEOs. Nearly 58 per cent of the respondents use the company-wide discount rate to evaluate the projects though the project may have different risk characteristics. Large firms are more likely to use risk-adjusted discount rate than small firms.

Results of the Present Study

Table 4 investigates the tools used for capital budgeting decisions. The firms use DCF methodology for capital budgeting decisions today more than in the previous times. They use multiple criteria in their project choice decisions. Most respondents select IRR and NPV as their most frequently used capital budgeting techniques. Eighty-five per cent of the respondents consider IRR as a very important/ important (response of 5 and 4) project choice criterion (mean score 4.36). About 65 per cent of the respondents always or almost always use (response of 5 and 4) NPV (mean score 3.73). The payback period method is also popular (67.5%).

The most interesting results come from examining the responses conditional on firm size and growth characteristics. Large firms are significantly more likely to use NPV than small firms (score of 4.11 versus 3.26). Small firms are more likely to use payback period method than large firms (score of 4.11 versus 3.46). High growth firms are more likely to use IRR than the low growth firms (score of 4.57 versus 4.08) whereas low growth firms are more likely to use break-even analysis than high growth firms

(score of 3.89 versus 3.24). There is no difference in the technique used by EVA and non-EVA firms; high WACC and low WACC firms; and highly levered and low debt firms. Public sector firms are more likely to use profitability index than the private sector firms (score of 3.67 versus 2.35).

The respondents were asked to indicate the methodology they follow to assess the project risk and the relative importance they assign to different project risk assessment techniques. These techniques are sensitivity analysis, scenario analysis, risk-adjusted discount rate, decision tree analysis, and Monte Carlo simulation (Table 5). The results in Table 5 indicate that the sensitivity analysis and scenario analysis are most widely used techniques for assessing the project risk. The respondents use more than one technique in analysing the project risk. While 90.1 per cent of the respondents use sensitivity analysis, 61.6 per cent of the respondents employ scenario analysis. The CFOs with CA qualifications use sensitivity analysis technique more than the non-CA CFOs (mean score of 4.52 versus 4.10). The public sector firms are more likely to use sensitivity analysis than the private sector firms (mean score of 4.90 versus 4.34). The large firms use scenario analysis for assessing project risk significantly more than the small firms (mean score of 3.90 versus 2.57)..

About 31 per cent of the respondents use risk-adjusted discount rate while assessing the project risk. The large firms are more likely to use risk-adjusted discount rate than the small firms (mean score of 2.83 versus 1.54). A very few respondents use decision tree analysis and Monte Carlo simulation to analyse the project risk. Large firms use the decision tree analysis more than the small firms (mean score of 1.89 versus 0.83).

Cost of Capital

Cost of Equity Capital

The well-known models used for estimation of cost of equity capital are dividend discount model of Gordon and Shapiro (1956), CAPM of Sharpe (1964), multi-factor model arbitrage pricing theory (APT) of Ross (1976), and three factor model of Fama and French (1995).

The CAPM model predicts that beta is the only reason for expected cross-section returns on stocks to differ. The early evidence is supportive of the argument (see, for example, Black, Jensen, and Scholes, 1972; Fama and MacBeth, 1973; and Blume

Table 4: Survey Response to the Question on the Relative Importance of the Following Project Choice Criteria

	% Very Important or Important	Mean	Size (Sales)		Size (Assets)		Size (Market Cap.)		Export Sales	
			Small	Large	Small	Large	Small	Large	Low	High
i) Payback Period	67.50	3.79	3.82	3.76	3.85	3.73	4.11	3.46***	3.79	3.78
ii) Accounting Rate of Return	34.60	2.62	2.53	2.70	2.42	2.80	2.79	2.30	2.46	2.76
iii) Net Present Value Method (NPV)	66.30	3.73	3.56	3.88	3.44	4.00	3.26	4.11***	3.56	3.88
iv) Internal Rate of Return (IRR)	85.00	4.36	4.08	4.63*	4.08	4.63**	4.00	4.69***	4.54	4.20
v) Profitability Index (PI)	35.10	2.51	2.56	2.47	2.56	2.47	2.36	2.54	2.75	2.29
vi) Break-even Analysis	58.20	3.58	3.77	3.40	3.49	3.68	3.82	3.37	3.53	3.63

	% Very Important or Important	Mean	ROCE		EVA		WACC		Long-term Debt	
			Low	High	Low	High	Low	High	Low	High
i) Payback Period	67.50	3.79	3.83	3.75	3.73	3.85	3.90	3.68	3.56	4.00
ii) Accounting Rate of Return	34.60	2.62	3.05*	2.20	2.92	2.33	2.66	2.58	2.22	2.98
iii) Net Present Value Method (NPV)	66.30	3.73	3.51*	3.93	3.85	3.61	3.85	3.61	3.87	3.59
iv) Internal Rate of Return (IRR)	85.00	4.36	4.43	4.30	4.60	4.51	4.18	4.54	4.44	4.29
v) Profitability Index (PI)	35.10	2.51	2.83	2.23	2.74	2.31	2.49	2.54	2.62	2.43
vi) Break-even Analysis	58.20	3.58	3.72	3.45	3.77	3.40	3.51	3.65	3.45	3.71

	% Very Important or Important	Mean	P/EMax.		P/EMin.		CA		Sector	
			Low	High	Low	High	No	Yes	Private	Public
i) Payback Period	67.50	3.79	3.75	3.81	3.78	3.78	3.45	3.90	3.77	3.90
ii) Accounting Rate of Return	34.60	2.62	2.80	2.35	2.77	2.38	2.55	2.64	2.56	3.00
iii) Net Present Value Method (NPV)	66.30	3.73	3.59	3.70	3.65	3.65	4.14	3.58	3.63	4.40*
iv) Internal Rate of Return (IRR)	85.00	4.36	4.08**	4.57	4.19	4.46	4.20	4.42	4.30	4.80
v) Profitability Index (PI)	35.10	2.51	2.45	2.34	2.39	2.40	2.20	2.63	2.35	3.67**
vi) Break-even Analysis	58.20	3.58	3.69	3.43	3.89	3.24**	3.55	3.59	3.54	3.89

* significant at the 0.10 level.

** significant at the 0.05 level.

*** significant at the 0.01 level.

and Friend, 1973). Later studies during the 1980s (such as Reinganum, 1982; Lakonishok and Shapiro, 1986; and Ritter and Chopra, 1989) do not find any significant relationship between beta and average returns. Fama and French (1992, 1993, and 1996a) show that other variables like earnings/price, cash flow/price, book to market equity add even more significantly to the explanation of average return than beta. Such findings have prompted headlines like "Is beta dead?" in the business press and journals (see for example, Wallace, 1980; Chan and Lakonishok, 1995; Grinold, 1995; Fama and French, 1996b).

Chan and Lakonishok (1995) find overwhelming support for beta up to the period 1982. The later period appears to be an aberration. The estimated average compensation for beta risk is 0.47 per cent per month and is close to being significant. It is not significantly different from average excess return on the market during the entire CRSP history of stock returns in the US.

The studies on the death of beta have been described more as data mining by the financial economists. The announcements of death of beta

Table 5: Survey Response to the Question on the Methodology Followed to Assess the Project Risk

	% Very Important or Important	Mean	Size (Sales)		Size (Assets)		Size (Market Cap.)		Export Sales	
			Small	Large	Small	Large	Small	Large	Low	High
i) Sensitivity Analysis	90.10	4.41	4.25	4.56	4.35	4.46	4.54	4.26	4.43	4.39
ii) Scenario Analysis	61.60	3.27	2.61	3.90***	2.57	3.90***	3.03	3.51	2.92	3.60*
iii) Risk Adjusted Discount Rate	31.70	2.19	1.62	2.75***	1.54	2.83***	2.11	2.23	2.05	2.33
iv) Decision Tree Analysis	12.20	1.38	0.86	1.89***	1.06	1.67*	0.83	1.89***	1.54	1.22
v) Monte Carlo Simulation	8.20	0.95	0.76	1.14	0.71	1.16	0.80	1.09	0.92	0.97

	% Very Important or Important	Mean	ROCE		EVA		WACC		Long-term Debt	
			Low	High	Low	High	Low	High	Low	High
i) Sensitivity Analysis	90.10	4.41	4.35	4.46	4.40	4.41	4.65	4.17**	4.30	4.51
ii) Scenario Analysis	61.60	3.27	3.28	3.26	3.60	2.92	3.26	3.28	3.11	3.43
iii) Risk Adjusted Discount Rate	31.70	2.19	2.67	1.73**	2.69	1.70**	2.42	1.98	2.03	2.35
iv) Decision Tree Analysis	12.20	1.38	1.19	1.55	1.33	1.42	1.58	1.17	1.51	1.26
v) Monte Carlo Simulation	8.20	0.95	0.88	1.00	0.91 -	0.97	1.03	0.86	1.08	0.81

	% Very Important or Important	Mean	P/EMax.		P/EMin.		CA		Sector	
			Low	High	Low	High	No	Yes	Private	Public
i) Sensitivity Analysis	90.10	4.41	4.59	4.22	4.51	4.30	4.10	4.52**	4.34	4.90**
ii) Scenario Analysis	61.60	3.27	3.14	3.44	3.34	3.25	3.60	3.16	3.21	3.70
iii) Risk Adjusted Discount Rate	31.70	2.19	2.14	2.24	2.51	1.89	3.00	1.92**	2.14	2.50
iv) Decision Tree Analysis	12.20	1.38	1.36	1.47	1.36	1.47	1.74	1.25	1.28	2.00
v) Monte Carlo Simulation	8.20	0.95	1.09	0.88	1.03	0.94	1.17	1.36	0.97	0.78

* significant at the 0.10 level.

** significant at the 0.05 level.

** significant at the 0.01 level.

appear to be premature. The use of beta is more than ever before (see, for example, Black, 1995).

Cost of Capital Practice

The review of empirical surveys and studies helps to identify the methodology followed to ascertain cost of capital in practice.

Petry and Sprow's (1993) study of 151 firms listed in the 1990 *Business Week* finds that between 40 per cent and 50 per cent use CAPM to determine cost of equity. The firms that do not use CAPM use bond-yield-plus-risk-premium approach to estimate cost of equity. More than 25 per cent of the respondents use book value weights and 40 per cent use market value weights for equity to determine the WACC of the firm.

Bruner, *et al.'s* (1998) study of financial executives from 27 firms included in the 1992 report titled *Creating World Class Financial Management: Strategies of 50 Leading Companies* finds that more than 80 per cent of the firms use CAPM to estimate the cost of equity. But there is no agreement as to how the variables of CAPM — risk free rate, average market risk premium, and the firm's equity beta -- are computed. One third of the respondents use 10-year treasury bonds, another one third use treasury bonds with maturities ranging from 10 to 30 years as a risk free rate. Fifty per cent of the respondents use fixed average market risk premium in the range of 4 per cent to 6 per cent. Only 30 per cent of the respondents work out beta for their

firms and more than 50 per cent use the published source such as *Value Line* to find out the beta of their firm. To find out WACC, 60 per cent of the respondents use market value weights and only 15 per cent use book value weights. Thirty-seven per cent of the firms surveyed revise the WACC of the firm annually, while 41 per cent compute WACC more frequently (i.e., semi-annually, quarterly, monthly or for each investment).

A comprehensive survey of macroeconomics and the finance literature about the equity premium puzzle — the question as to why equity stocks have historically performed so well relative to bonds — is reported in Cochrane (1997) and Siegel and Thaler (1997). Siegel (1995) finds that over the period 1802 through 1990, equity has provided superior returns to those on fixed income investments, gold or commodities. The real compounded annual returns on equity during the sub-periods 1802-70, 1871-1925, and 1926-1990 were 5.7 per cent, 6.6 per cent, and 6.4 per cent respectively. Two hundred and twenty-six academic financial economists agree on forecast arithmetic equity premium of 7 per" cent per year over 10- and 30-year horizon (Welch, 2000).

Graham and Harvey's (2001) study finds that CAPM is widely used (73.5%) to find out the cost of equity capital of the firm. Few firms use dividend discount model (rating of 0.91). The large firms are more likely to use CAPM than small firms (rating of 3.27 versus 2.49 respectively). CEOs with MBA qualification are more likely to use the CAPM than the CEOs with non-MBA qualification. The firms with high foreign sales and public firms are more likely to use CAPM.

Results of the Present Study

The present study endeavours to find out how firms calculate the cost of capital. What is the average cost of capital for corporate India? The study explores the methods followed to estimate the cost of debt and equity capital of the firm. Does corporate India use CAPM to estimate the cost of equity capital? How do firms find out their estimate of beta? Do they use published source or calculate on their own? What do they use as risk-free rate? Do they use BSE Sensex or BSE 200 Index or Nifty (NSEIX) as a proxy for market portfolio? What is the value judgement of industry in respect of average market risk premium? Do they use historical cost of debt or current market rate at which firms of similar risk can borrow as their cost of debt capital? What kinds of weights are being used to determine the WACC? How frequently do they re-estimate the cost of capital

of the firm?

The respondents were asked to indicate as to which method they follow for computation of rate of discount (minimum acceptable rate of return) for capital budgeting decisions. Table 6 contains some surprising results. Nearly 67 per cent of the respondents use single discount rate based on company's overall WACC to evaluate the projects. Nearly 22 per cent of the respondents use multiple risk-adjusted discount rates, depending on the risk characteristics of the projects. Twenty-five per cent of the respondents use cost of specific capital used to finance the project (the discount rate for a project that will be financed entirely with retained earnings is cost of retained funds).

Table 6 explores the method followed by corporate India to estimate the cost of equity. The results indicate that CAPM is the most popular method (54.32%) of estimating cost of equity capital. The second and the third most popular methods are Gordon's dividend discount model (52.1%) and earnings yield (34.2%) respectively. Very few firms (7%) use multi-factor model to estimate the cost of equity.

The large firms are significantly giving more importance to CAPM than the small firms (mean score of 3.47 versus 2.05). The dividend discount model is more popular amongst the small firms (mean score of 3.42 versus 2.34). The highly profitable firms (based on ROCE and EVA) are giving significantly low importance to dividend yield and earnings yield while estimating cost of equity capital than the low profitable firms.

Table 7 investigates the respondents who use CAPM as to how they estimate beta and what risk-free rate of return they use. Nearly 65 per cent of the respondents who use CAPM consider return on 10-year Government of India (GOI) Treasury Bonds as risk-free rate. The high growth firms are more likely to use return on 10-year GOI Treasury Bonds as risk-free rate than the low growth firms (85.7% versus 52.38%). The CFOs with CA qualification are more likely to use return on 10-year GOI Treasury Bonds as risk-free rate than the firms with non CA-CFOs (78.13% versus 33.33%). The firms with high WACC are using return on 10-year GOI Treasury Bonds as risk-free rate significantly more than the low WACC firms (81.82% versus 50%).

Industry average beta is the most popular measure of the systematic risk being presently used by corporate India. About 52 per cent of the

Table 6: Survey Response to the Question on the Method Followed to Estimate the Cost of Equity

	% Very Important or Important	Mean	Size (Sales)		Size (Assets)		Size (Market Cap.)		Export Sales	
			Small	Large	Small	Large	Small	Large	Low	High
i) Dividend Yield (DPS/MPS)	26.80	1.80	1.68	1.94	1.64	1.97	2.06	1.46	1.70	1.91
ii) Earnings Yield (EPS/MPS)	34.20	2.16	2.18	2.15	2.08	2.26	2.51	1.67*	2.14	2.19
iii) Gordon's Dividend Discount Model	52.10	2.89	3.14	2.62	3.42	2.34**	3.24	2.57	3.05	2.71
iv) Capital Asset Pricing Model (CAPM)	53.30	2.75	2.23	3.29**	2.05	3.47***	2.41	3.08	2.31	3.21*
v) Multi-factor Model	7.00	0.73	0.46	1.03**	0.47	1.00*	0.71	0.69	0.65	0.82

	% Very Important or Important	Mean	ROCE		EVA		WACC		Long-term Debt	
			Low	High	Low	High	Low	High	Low	High
i) Dividend Yield (DPS/MPS)	26.80	1.80	2.55	1.16***	2.41	1.31**	1.97	1.63	1.57	2.03
ii) Earnings Yield (EPS/MPS)	34.20	2.16	2.86	1.53***	2.74	1.67**	2.39	1.95	1.97	2.35
iii) Gordon's Dividend Discount Model	52.10	2.89	2.97	2.82	2.84	2.92	2.89	2.89	2.83	2.94
iv) Capital Asset Pricing Model (CAPM)	53.30	2.75	2.83	2.68	3.00	2.54	2.77	2.74	2.46	3.05
v) Multi-factor Model	7.00	0.73	1.18	0.34**	1.13	0.41**	0.84	0.62	0.51	0.94

	% Very Important or Important	Mean	P/E Max.		P/E Min.		CA		Sector	
			Low	High	Low	High	No	Yes	Private	Public
i) Dividend Yield (DPS/MPS)	26.80	1.80	1.72	1.82	2.19	1.38*	2.39	1.60	1.80	1.86
ii) Earnings Yield (EPS/MPS)	34.20	2.16	2.15	2.09	2.76	1.51**	2.61	2.02	2.11	2.71
iii) Gordon's Dividend Discount Model	52.10	2.89	3.03	2.65	2.94	2.74	2.28	3.09	2.89	2.86
iv) Capital Asset Pricing Model (CAPM)	53.30	2.75	2.69	2.92	2.77	2.84	2.60	2.81	2.75	2.75
v) Multi-factor Model	7.00	0.73	0.75	0.71	0.84	0.62	0.67	0.75	0.70	1.00

* significant at the 0.10 level.
** significant at the 0.05 level.
*** significant at the 0.01 level.

respondents who use CAPM take industry average beta as a measure of their systematic risk. The second and third most popular sources of beta are published source (20.45%) and self-calculated (18.18%). Large firms (based on sales) and highly profitable firms (based on ROCE) are more inclined to use self-calculated beta than the small firms and low profitable firms. The small firms do not calculate beta and are more likely to use CFO's estimate of beta as compared to large firms (31.25% versus 7.14%).

Table 8 explores CFO's choice of index and share price data period for making an estimate of beta. Nearly 65 per cent of the respondents consider the last five-year monthly share price data to estimate equity beta. The use of monthly share price data

Table 7: Survey Response to the Question: Do You Use CAPM in Estimating Your Cost of Equity Capital?

	% Use	Size (Sales)		Size (Assets)		Size (Market Cap.)		Export Sales	
		Small	Large	Small	Large	Small	Large	Low	High
CAPM Followed	54.32	45.00	63.41*	40.00	68.29**	46.15	64.10	47.50	60.98
If yes, What do you use for risk-free rate?									
i) 91 Days GOI-T Bills Rate	15.91	16.67	15.38	18.75	14.29	16.67	12.00	26.32	8.00
») 3 to 7 Years GOI-T-Bills Rate	18.18	11.11	23.08	6.25	25.00	22.22	16.00	15.79	20.00
iii) 10 Year GOI-T-Bills Rate	65.91	72.22	61.54	75.00	60.71	61.11	72.00	57.89	72.00
What do you use as your volatility or beta factor?									
i) Published Source	20.45	16.67	23.08	6.25	28.57*	16.67	24.00	15.79	24.00
ii) CFO's Estimate	15.91	22.22	11.54	31.25	7.14**	16.67	16.00	21.05	12.00
iii) Self Calculated	18.18	0.00	30.77***	6.25	25.00	5.56	28.00*	31.58	8.00**
iv) Industry Average	52.27	66.67	42.31	62.50	46.43	66.67	40.00*	42.11	60.00

	% Use	ROCE		EVA		WACC		Long-term Debt	
		Small	Large	Small	Large	Small	Large	Low	High
CAPM Followed	54.32	50.00	58.54	55.00	53.66	55.00	53.66	52.50	56.10
If yes, What do you use for risk-free rate?									
i) 91 Days GOI-T Bills Rate	15.91	5.00	25.00*	4.55	27.27**	27.27	4.54**	19.05	13.04
ii) 3 to 7 Years GOI-T-Bills Rate	18.18	20.00	16.67	27.27	9.09	22.73	13.64	14.29	21.74
iii) 10 Year GOI-T-Bills Rate	65.91	75.00	58.33	68.18	63.64	50.00	81.82**	66.67	65.22
What do you use as your volatility or beta factor?									
i) Published Source	20.45	25.00	16.67	27.27	13.64	18.18	22.73	19.05	21.74
ii) CFO's Estimate	15.91	15.00	16.67	9.09	22.73	13.64	18.18	19.05	13.04
iii) Self Calculated	18.18	5.00	29.17**	13.64	22.73	18.18	18.18	23.81	13.04
iv) Industry Average	52.27	55.00	50.00	50.00	54.55	59.09	45.45	42.86	60.87

	% Use	P/E Max.		P/E Min.		CA		Sector	
		Low	High	Low	High	No	Yes	Private	Public
CAPM Followed	54.32	56.76	56.76	59.46	54.05	57.14	53.33	56.34	40.00
If yes, What do you use for risk free rate?									
i) 91 Days GOI-T-Bills Rate	15.91	23.81	4.76*	22.73	5.00	41.67	6.25***	12.50	50.00*
ii) 3 to 7 Years GOI-T-Bills Rate	18.18	23.81	9.52	22.73	10.00	25.00	15.63	17.50	25.00
iii) 10 Year GOI T-Bills Rate	65.91	52.38	85.71**	54.55	85.00**	33.33	78.13***	70.00	25.00*
What do you use as your volatility or beta factor?									
i) Published Source	20.45	23.81	19.05	27.27	15.00	8.33	25.00	17.50	50.00
ii) CFO's Estimate	15.91	9.52	23.81	4.55	30.00**	8.33	18.75	17.50	0.00
iii) Self Calculated	18.18	19.05	19.05	13.64	25.00	33.33	12.50	15.00	50.00*
iv) Industry Average	52.27	61.90	38.10	63.64	35.00*	66.67	46.88	55.00	25.00

* significant at the 0.10 level.

** significant at the 0.05 level.

*** significant at the 0.01 level.

Table 8: Survey Response to the Question: Do You Use CAPM in Estimating Your Cost of Equity Capital?

	%Use		Size (Sales)		Size (Assets)		Size (Market Cap.)		Export Sales	
			Small	Large	Small	Large	Small	Large	Low	High
CAPM Followed	54	32	56.76	56.76	59.46	54.05	57.14	53.33	56.34	40.00
If yes, What period do you study to calculate beta of your company?										
i) Monthly Share Prices (5 years)	65	12	88.24	50.00**	80.00	57.14	94.12	44.00***	66.67	64.00
ii) Weekly Share Price (5 years)	30.23		11.76	42.31"	20.00	35.71	5.88	48.00***	33.33	28.00
Which stock market index is used as proxy for market portfolio to estimate beta of your company?										
i) BSE Sensex	88.10		88.24	92.31	100.00	81.48*	88.24	87.50	94.44	83.33
ii) Nifty	16	67	23.53	12.00	6.67	22.22	23.53	12.50	16.67	16.67
What do you use as market risk premium in a CAPM Model?										
i) Fixed Rate 6% to 8%	6.82		5.56	7.69	6.25	7.14	0.00	12.00	0.00	12.00
ii) Fixed Rate 8% to 9%	11	36	0.00	19.23*	6.25	14.29	22.22	4.00*	10.53	12.00
iii) Fixed Rate 9% to 10%	50.00		61.11	42.31	56.25	46.43	50.00	52.00	52.63	48.00
iv Average of Historical and Implied	18	18	16.67	19.23	12.50	21.43	16.67	20.00	21.05	16.00
v) CFO's Estimate	13	64	16.67	11.54	18.75	10.71	11.11	12.00	15.79	12.00

	% Use		ROCE		EVA		WACC		Long-term Debt	
			Small	Large	Small	Large	Small	Large	Low	High
CAPM Followed	54.32		56.76	56.76	59.46	54.05	57.14	53.33	56.34	40.00
If yes, What period do you study to calculate beta of your company?										
i) Monthly Share Prices (5 years)	65	.12	80.00	52.17*	68.18	61.90	76.19	54.55	52.38	77.27*
ii) Weekly Share Price (5 years)	30	.23	15.00	43.48**	22.73	38.10	23.81	36.36	42.86	18.18*
Which stock market index is used as proxy for market portfolio to estimate beta of your company?										
0) BSE Sensex	88	.10	85.00	90.91	86.36	90.00	80.95	95.24	100.00	77.27**
ii) Nifty	16	.67	15.00	18.18	13.64	20.00	28.57	4.76**	10.00	22.73
What do you use as market risk premium in a CAPM Model?										
i) Fixed Rate 6% to 8%	6.82		10.00	4.16	9.09	4.54	4.55	9.09	4.76	8.70
ii) Fixed Rate 8% to 9%	11.36		15.00	8.33	13.64	9.09	13.64	9.09	9.52	13.04
iii) Fixed Rate 9% to 10%	50	.00	50.00	50.00	50.00	50.00	50.00	50.00	52.38	47.83
iv Average of Historical and Implied	18	.18	15.00	20.83	13.64	22.73	13.64	22.73	23.81	13.04
v) CFO's Estimate	1	.64	10.00	16.67	13.64	13.64	18.18	9.09	9.52	17.39

(Contd.)

	% Use	P/E Max.		P/E Min.		CA		Sector	
		Low	High	Low	High	No	Yes	Private	Public
CAPM Followed	54.32	56.76	56 .76	59.46	54.05	57.14	53.33	56.34	40.00
If yes, What period do you study to calculate beta of your company?									
i) Monthly Share Prices (5 years)	65.12	65.00	61. 90	71.43	55.00	81.82	59.38	64.10	75.00
") Weekly Share Price (5 years)	30.23	25.00	38.10	19.05	45.00*	18.18	34.38	30.77	25.00
Which stock market index is used as proxy for market portfolio to estimate beta of your company?									
i) BSE Sensex	88.10	85.00	90 .00	90.48	84.21	81.82	90.32	86.84	100.00
ii) Nifty	16.67	20.00	10 ,00	14.29	15.79	36.36	9.68**	15.79	25.00
What do you use as market risk premium in a CAPM Model?									
i) Fixed Rate 6% to 8%	6.82	4.76	9.52	4.54	10.00	8.33	6.25	7.50	0.00
ii) Fixed Rate 8% to 9%	11.36	9.52	14 .29	13.64	10.00	0.00	15.63	10.00	25.00
iii Fixed Rate 9% to 10%	50.00	52.38	52 .38	54.55	50.00	50.00	50.00	52.50	25.00
iv Average of Historical and Implied	18.18	14.29	19.05	9.09	25.00	25.00	15.63	17.50	25.00
v) CFO's Estimate	13.64	19.05	4.76	18.18	5.00	16.67	12.50	12.50	25.00

* significant at the 0.10 level.

** significant at the 0.05 level.

*** significant at the 0.01 level.

to estimate security beta is significantly more popular amongst small firms than large firms. The highly profitable firms (based on ROCE) are significantly more likely to use weekly share price data to estimate their security beta than the low profitable firms. The BSE Sensex as a proxy for market portfolio is widely used followed by Nifty (NSEIX). Corporate India does not use the BSE 200 Index.

The average market risk premium of 9 per cent to 10 per cent is most widely used by corporate India. It is followed by average of historical return and implied return on the market portfolio. About 13 per cent of the respondents use CFO's estimate of average market risk premium as an input while using CAPM.

The practice of capturing tax advantage of interest on debt (interest tax shield) in the cost of debt computation is widely prevalent amongst corporate India. Nearly 63 per cent of the respondents use interest tax shield while computing cost of debt and 41.25 per cent of the respondents use interest tax shield while computing free cash flows to the firm. A few of the respondents follow both the practices. Large firms (based on sales) are more likely to use interest tax shield while computing free cash flows than the small firms (52.5% versus 30%).

The current statutory tax rate is widely used for calculating after tax cost of debt. Nearly 91 per cent of the respondents use current statutory tax rate as against 11.25 per cent, who use minimum alternative tax rate. A few of the respondents use both. The low profitable firms (based on ROCE and EVA) are more likely to use minimum alternative tax than the current statutory tax rate while computing the cost of debt.

Corporate India uses all possible weights in the computation of WACC. These weights are based on book value of the firm, market value of the firm, and target capital structure. The book value weights are widely used (41.8%) followed by target capital structure weights (39.2%). Nearly 22 per cent of the respondents use market value weights. A few of the respondents use more than one basis to estimate the WACC. Large firms are significantly more likely to use market value weights than the small firms (34.21% versus 12.82%). The low profitable firms (based on ROCE and EVA) use book value weights significantly more than the highly profitable firms (56.41% versus 27.5%). The low growth firms are significantly more likely to use book value weights than high growth firms (56.76% versus 25%). The firms with non CA-CFOs use market value weights significantly more

than the firms having CFOs with CA qualification (40% versus 16.95%). The CFOs with CA qualification use book value weights significantly more than the non-CA CFOs (49.15% versus 20%). The results are summarized in Table 9.

Nearly 45 per cent of the respondents revise their estimates of cost of capital annually and for 28.4 per cent of the respondents, this process is continuous with every investment. Very few firms revise their estimates of cost of capital either monthly or quarterly or semi-annually. There is significant difference between the large and small firms in the process of revising their cost of capital estimates continually.

The respondents were asked to indicate whether

they use cost of capital for purposes other than in project choice criterion. Nearly 75 per cent of the respondents answered in the affirmative.

About 78 per cent of the respondents who answered in the affirmative use cost of capital for divisional performance measurements; 62.3 per cent use it for EVA computations; and 6.56 per cent use it for CVA computations. There is significant difference in the use of cost of capital for divisional performance measurement between the low growth and high growth firms (70.37% versus 89.66%). The CFOs with CA qualification are more likely to use cost of capital for divisional performance measurement than non-CA CFOs (84.44% versus 62.5%).

Table 9: Survey Response to the Question on the Tax Rate Used to Calculate After Tax Cost of Debt and the Weights They Use in the Computation of WACC of the Firm

	% Use	Size (Sales)		Siy (Assets)		Size (Market Cap.)		Export Sales	
		Small	Large	Small	Large	Small	Large	Low	High
i) Current Statutory Tax Rate	91. 25	92.50	90.00	92.50	90.00	87.18	94.74	97.50	85.00**
iii) Minimum Alternative Tax	11 25	10.00	12.50	10.00	12.50	12.82	10.53	3.75	15.00
i) Book Value Weights	41. 80	47.50	35.90	42.50	41.03	51.28	31.58*	37.50	46.15
ii) Market Value Weights	22 .80	20.00	25.64	17.50	28.21	12.82	34.21**	25.00	20.51
iii) Target Capital Structure Weights	39 .20	40.00	38.46	45.00	33.33	41.03	36.84	35.00	43.59

	% Use	ROCE		EVA		WACC		Long-term Debt	
		Small	Large	Small	Large	Small	Large	Low	High
i) Current Statutory Tax Rate	91.25	82.50	100***	85.00	97.50**	95.00	87.50	97.44	85.37*
iii) Minimum Alternative Tax	11.25	22.50	0.00***	22.00	1.25**	10.00	12.50	2.56	17.07*
i) Book Value Weights	41.80	56.41	27.50***	56.41	27.50***	43.59	40.00	31.58	51.22*
ii) Market Value Weights	22 .80	12.82	32.50**	15.38	30.00	17.95	27.50	36.84	4.88***
iii) Target Capital Structure Weights	39 .20	35.90	42.50	35.90	42.50	41.03	37.50	28.95	48.78*

	% Use	P/E Max.		P/E Min.		CA		Sector	
		Low	High	Low	High	No	Yes	Private	Public
i) Current Statutory Tax Rate	91.25	86.49	94.44	86.49	94.44	95.24	89.83	90.00	100.00
iii) Minimum Alternative Tax	11 .25	13.51	4.17	16.22	2.78	2.38	13.56	12.86	0.00
i) Book Value Weights	41 .80	51.35	30.56*	56.76	25.00***	20.00	49.15**	38.57	66.67
ii) Market Value Weights	22 .80	18.92	27.78	18.92	27.78	40.00	16.95**	22.86	22.22
iii) Target Capital Structure Weights	39.20	37.84	38.89	29.73	47.22	50.00	35.59	42.86	11.11*

significant at the 0.10 level,

significant at the 0.05 level,

significant at the 0.01 level.

Capital Structure

Pecking-order Theory

Developing on the issue of how firms choose their capital structures, Myers (1984) contrasts two ways of thinking — static trade-off framework and a pecking-order framework. In a static trade-off framework, a firm has a target debt to value ratio and gradually moves towards it. The pecking-order theory states that firms prefer retained earnings to external financing. And, if funds requirements exceed retained earnings, then debt is preferred to equity. He argues that firms avoid financing real investment opportunity either by issuing equity or by risky securities because of difficulty in pricing external equity correctly due to information asymmetry between the management and the shareholders and the dilemma of sharing benefits of positive NPV projects with outsiders. The professional management avoids relying on external finance because it would subject the firms to the discipline of the capital market (see for example, Berle, 1954 and Berle and Means, 1932). The pecking-order theory does not imply a well-defined debt to value ratio. The ratio will vary as capital expenditure and retained earnings change.

Although empirical research on testing the "pecking-order" can be considered as mixed, there are a number of studies providing evidence in line with the theory (see, for example, *For:* Baskin, 1989; Fan and So, 2000; *Against:* Brennan and Kraus, 1987; Noe, 1988; Constantitinides and Grundy, 1989; Smith and Watts, 1995, and Helwege and Liang, 1996).

Barclay, Smith Jr. and Watt's (1995) study of 6,700 industrial companies over the past 30 years indicates that the most important determinant of a firm's leverage ratio and dividend yield is the nature of its investment opportunities. The firms with large intangible growth opportunities have significantly lower leverage ratios and dividend yields, on an average, than the companies whose values are represented primarily by tangible assets. The explanation given for this pattern of financing is that high leverage and dividends can control free cash flow problems in case of mature firms with limited growth opportunities. For high growth firms, the underinvestment problem associated with heavy debt financing and the floatation cost of high dividends make both policies potentially costly. The study did not confirm the pecking-order hypothesis.

Capital Structure Practices

Pandey's (1984) study of 30 Indian firms probes corporate managers' conceptual understanding of the cost of capital and optimum capital structure. Most of the respondents consider equity share capital as the most expensive and long-term debt as the least expensive source of finance. The low cost of debt due to tax advantage of interest and long procedures involved in the issue of equity capital led to strong preference for debt by the managers.

Pinegar and Wilbricht's (1989) survey of Fortune 500 firms indicates that retained earnings is the first choice of the financial officers (85%) for financing long-term projects. Forty per cent of the respondents indicate equity as the last choice of alternatives for raising capital. Sixty per cent of the firms indicate that they prefer to use debt and preferred stock to avoid dilution in control of common stockholders. Seventy-five per cent of the respondents agree that the firm value, stable cash flows, and financial independence significantly influence the capital structure decision of the firm.

Billingsley and Smith's (1996) survey of 243 firms finds that firms use convertibles primarily as an alternative to the straight debt, employing a conversion feature to buy down the coupon rate and thus preserve cash flow. There is a steady trend towards decreasing reliance on convertibles as delayed equity financing.

Barclay and Smith Jr.'s (1999) study provides strong support to the argument that a firm's financial architecture is determined primarily by its investment opportunities. The companies with high market-to-book ratio tend to use less debt than companies with low market-to-book ratios. The debt raised by growth firms also tends to have shorter maturity and higher priority than the debt issued by the mature firms. The said financing pattern is interpreted as the result of efforts to preserve financial flexibility and proper investment incentive in growth firms while providing strong managerial incentive for efficiency in mature firms.

Fan and So (2000) find that Hong Kong firms conformed more to the "pecking-order" principle than a target long-term debt-equity mix in their financing decisions. There is strong evidence that financing and investment decisions are made simultaneously. The firms within the same industry tend to have more similar capital structure, though it is not a deliberate choice of the management. Firm size is found to be a determinant of capital structure.

No evidence is found that managers took into consideration the proportion of intangible assets over total assets of a firm in making capital structure decisions.

Graham and Harvey's (2001) survey finds that earnings volatility, tax advantage of interest on debt, and credit rating are important determinants of debt policy for large firms that are in Fortune 500. They find little evidence that firms directly consider personal taxes when deciding on debt policy (rating of 0.68). Thirty-four per cent of the respondents have tight target range of debt-equity ratio, 10 per cent have strict, and another 37 per cent have flexible target debt ratio and 19 per cent of the firms do not have target ratio. The investment grade firms (64%) are more likely to have strict or tight target debt ratio than the speculative firms (41%). Targets are important if the CEO has short tenure or is young.

Bhaduri's (2002) study of capital structure choice in developing countries through a case study of Indian corporate sector finds that capital structure choice is influenced by factors such as growth, cash flow, size, and product and industry characteristics. The study of Pandey, Chotigeat and Ranjeet (2000) for Thai firms shows that Thai managers prefer raising funds from financial institutions and are rather reluctant to make public offerings of equity or debt. The study also reveals that asset structure, growth, size, profitability and default risk are the significant determinants of leverage in Thailand.

Findings of the Present Study

To find out whether managers in India behave as predicted by the pecking-order theory of capital structure, the respondents were asked to indicate their sources of financing choices and rank them in order of their relative importance in terms of its use. The options given to them are retained earnings, debt, and equity funds. The results in Table 10 indicate that retained earnings are the most favoured source of finance amongst the CFOs. Nearly 89 per cent of the respondents consider it very important/ important source of finance. There is a significant difference in the use of internally generated funds by the highly profitable firms (based on ROCE and EVA) vis-a-vis low profitable firms (mean score of 4.80 versus 4.23 and 4.78 versus 4.24 respectively). The low profitable firms use different forms of debt funds more than the highly profitable firms (based on EVA). These findings are consistent with the

theory. The firms with low long-term debt ratio are more likely to use internally generated funds than the firms with high long-term debt proportion in their capital structure (mean score of 4.92 versus 4.13).

Loans from financial institutions and private placement of debt are the next most widely used sources of finance. Fifty-nine per cent and 32.9 per cent of the respondents have indicated loans from financial institutions and private placement of debt as the most important/important source of finance respectively. The larger firms (based on sales and assets) are more likely to go in for bonds issue in the primary market than the small firms (mean score of 1.97 versus 0.97).

The debt in the form of loans from DFIs or private placement of debt or bonds issue in the primary market is preferred more by the low growth firms than the high growth firms (mean score of 3.74 versus 2.97; 2.82 versus 1.80; and 2.16 versus 0.82 respectively).

The management of the firm may take on risky projects to expropriate wealth from the bondholders to shareholders (Jensen and Meckling, 1976). The use of convertible bonds (Green, 1984) and short-term debt (Myers, 1977) will restrict the asset substitution. The use of hybrid securities is least popular amongst corporate India. Only 12.20 per cent of respondents have indicated hybrid securities as their most favoured source of finance. Fifteen per cent of respondents consider preference share capital as the most preferred/preferred source of finance. There is a significant difference in the use of hybrid securities by the low profitable firms (based on EVA) vis-a-vis highly profitable firms (mean score of 1.51 versus 1.05). The low growth firms are more likely to use hybrid securities than the high growth firms as source of finance (mean score of 1.64 versus 1.14). There is significant difference in the use of preference capital between the public sector and the private sector and low growth and high growth firms (mean score of 0.14 versus 1.42 and 1.78 versus 0.97 respectively).

Equity capital as a source of finance is not preferred by the CFO respondents (mean score is 1.40). Only 16.9 per cent of the respondents consider it as most preferred/preferred source of finance. There is no significant difference in the use of equity capital between the firms, classified on the basis of size, profitability, risk, growth, CFO's education, and sector.

Table 10: Survey Response to the Question on the Financing Pattern Followed for the Projects in the Company

	%Very Important or Important	Mean	Size (Sales)		Sine (Assets)		Size (Market Cap.)		Export Sales	
			Small	Large	Small	Large	Small	Large	Low	High
i) Loans from Financial Institutions	59.00	3.31	3.50	3.11	3.28	3.34	3.58	3.11	3.28	3.33
ii) Bonds Issue in the Primary Market	12.80	1.49	0.97	1.97***	0.97	1.97***	1.53	1.48	1.46	1.51
iii) Private Placement of Debt	32.90	2.34	2.10	2.59	1.92	2.76*	2.54	2.19	2.38	2.31
iv) Hybrid Securities (FCDs/PCDs)	12.20	1.28	1.16	1.41	1.14	1.42	1.31	1.36	1.09	1.46
v) Retained Earnings	89.90	4.52	4.40	4.64	4.65	4.38	4.33	4.73	4.58	4.46
vi) Issue of Preference Capital	15.00	1.30	1.53	1.06	1.27	1.33	1.74	0.97*	0.94	1.65*
vii) Issue of Equity Capital	16.90	1.40	1.49	1.32	1.28	1.53	1.68	1.08	1.24	1.55

	%Very Important or Important	Mean	ROCE		EVA		WACC		Long-term Debt	
			Low	High	Low	High	Low	High	Low	High
i) Loans from Financial Institutions	59.00	3.31	3.61	3.03	3.73	2.93*	3.10	3.51	2.82	3.79**
ii) Bonds Issue in the Primary Market	12.80	1.49	1.74	1.25	2.03	0.97***	1.34	1.63	1.03	1.92**
iii) Private Placement of Debt	32.90	2.34	2.62	2.08	2.89	1.79**	2.60	2.06	1.62	3.03***
iv) Hybrid Securities (FCDs/PCDs)	12.20	1.28	1.43	1.14	1.51	1.05*	1.24	1.32	1.00	1.54*
v) Retained Earnings	89.90	4.52	4.23	4.80***	4.24	4.78***	4.43	4.62	4.92	4.13***
vi) Issue of Preference Capital	15.00	1.30	1.51	1.08	1.53	1.08	1.39	1.20	1.00	1.58*
vii) Issue of Equity Capital	16.90	1.40	1.69	1.11*	1.58	1.23	1.50	1.31	1.14	1.65

	%Very Important or Important	Mean	P/EMax.		P/EMin.		CA		Sector	
			Low	High	Low	High	No	Yes	Private	Public
i) Loans from Financial Institutions	59.00	3.31	3.60	3.11	3.74	2.97**	2.80	3.48	3.38	2.78
ii) Bonds Issue in the Primary Market	12.80	1.49	1.94	1.00**	2.16	0.82***	1.22	1.58	1.37	2.38
iii) Private Placement of Debt	32.90	2.34	2.59	2.03	2.82	1.80**	1.89	2.49	2.31	2.63
iv) Hybrid Securities (FCDs/PCDs)	12.20	1.28	1.55	1.23	1.64	1.14*	1.35	1.26	1.34	0.71
v) Retained Earnings	89.90	4.52	4.64	4.50	4.58	4.56	4.75	4.44	4.55	4.30
vi) Issue of Preference Capital	15.00	1.30	1.50	1.24	1.78	0.97**	1.37	1.28	1.42	0.14**
vii) Issue of Equity Capital	16.90	1.40	1.24	1.53	1.47	1.31	1.40	1.40	1.43	1.14

* significant at the 0.10 level. ** significant at the 0.05 level. *** significant at the 0.01 level.

Dividend Policy

Dividend Puzzle

The celebrated paper of Miller and Modigliani (1961) declares dividends as irrelevant in a world without taxes, transaction cost or other market imperfections and investment decision of the firm is not affected by the dividends, because investors could homebrew their own dividends by selling a part from or borrowing against their portfolio. The firms that issue dividends would incur floatation costs on new securities they have to issue to keep their investment policy intact. Black (1976) termed it as the dividend puzzle.

Determinants of Dividend Policy

Firms pay dividends despite costs associated with it such as tax disadvantage of dividends and transaction cost associated with the fresh issue of equity. The

market also regards dividend payments positively. Why? The present section surveys the empirical studies to find answer to this question.

Lintner (1956) analyses as to how firms set dividends and concludes that firms have four important concerns. First, firms have long-run target dividend payout ratios. The payout ratio is high in case of mature companies with stable earnings and low in case of growth companies. Second, the dividend change follows shift in long-term sustainable earnings (see, for example, Healy and Palepu, 1988). Third, managers are more concerned with dividend changes than on absolute level. Finally, managers do not intend to reverse the change in dividends. Fama and Babiak's (1968) tests of Lintner's model suggest that it provides a fairly good explanation of how companies decide on dividends rate.

Asquith and Mullins, Jr. (1983) investigate the impact of dividends on stockholders' wealth by analysing 168 firms that either pay the first dividend in their corporate history or initiate dividends after a 10-year hiatus. Subsequent dividend increases for the same sample of firms are also investigated. The findings are consistent with the view that dividends convey unique, valuable information to the investors. Lang and Litzenberger's (1989) study suggests that information content of negative changes in dividends is greater than that of positive changes.

Bhat and Pandey's (1994) study of Indian corporates finds that managers prefer to follow stable dividends policy. According to the study, the determinants of dividend policy are: current earnings; pattern of past dividends; expected future earnings; increasing equity base and liquidity.

Lazo's (1999) survey of 110 managers from Standard&Poor's 500 companies finds that companies (90%) use dividends as a signal of their future earnings. They are very reluctant to cut dividends, regardless of the purpose for such a cut. Even when the companies initiate stock buyback programmes, they do not reduce the dividends to support the repurchase. Seventy-five per cent of the firms have actually increased their dividend payments.

Mohanty's (1999) survey of the dividend payout ratio of 2,535 Indian companies indicates that firms maintain a constant dividend per share and have fluctuating payout ratio depending on their profits. Raghunathan and Dass (1999) find that the top-100 and high net-worth companies have maintained a stable dividend payout policy of around 30 per cent during the period 1990 to 1999.

Results of the Present Study

The results in Table 11 indicate that 81.50 per cent of the respondents strongly agree / agree that their firm has a long-run target dividend payout ratio. Nearly 85 per cent of the respondents strongly agree/ agree that dividend changes in their organization follow shift in long-run sustainable earnings. Only 46.95 per cent of the respondents agree that the dividend policy is a residual decision after meeting desired investment needs. The findings of the survey are in agreement with the findings of Lintner's (1956) study on dividend policy.

Firms which are creating shareholder value are significantly more willing to rescind dividend increase in the event of growth opportunities available to them than the non-EVA firms. The large firms (based on sales) are significantly less willing to rescind dividend increase than the small firms. The non-CA CFOs are more likely to consider the dividend policy as a residual decision than the CFOs with CA qualification.

Nearly 71 per cent of the respondents strongly agree/agree that the dividend policy provides signalling mechanism of the future prospects of the firm and thus affects its market value. About 64 per cent of the respondents agree that the investors have different relative risk perceptions of dividend income and capital gains and are not indifferent between receiving dividend income and capital gains.

The non-CA CFOs significantly strongly disagree to the belief that investors are indifferent between receiving dividends and capital gains than the CFOs with CA qualification (mean score of -1.19 as against -0.43).

Nearly 82 per cent of the respondents strongly agree/agree that management should be responsive to the shareholders' preferences regarding dividends and 53.1 per cent of the respondents strongly disagree/disagree that share buyback programme should replace the dividend payments of the firm.

The large firms (based on sales) significantly strongly disagree to the belief that share buyback programme should replace dividend payments of the firm than the small firms. The highly profitable and growth firms (based on ROCE and EVA, P/E) significantly less strongly disagree to the share buyback programme replacing dividend payments than the low profitable and low growth firms.

Table 11: Survey Response to the Question on Belief of the Management of the Firm About its Dividend Policy

	% Strongly Agree/ Disagree	Mean	Size (Sales) Small	Large	Size (Assets) Small	Large	Size (Market Cap.) Small	Large	Export Sales Low	High
i) Has Long-term Target Dividend Payout Ratio	81.50	1.15	1.05	1.24	1.15	1.15	0.95	1.38	1.30	1.00*
ii) Focus More on Absolute Level of Dividends than Dividend Changes	67.90	0.88	0.85	0.90	0.78	0.98	0.82	0.87	0.90	0.85
iii) Dividend Change Follows Shift in Long-term Sustainable Earnings	85.20	1.41	1.33	1.49	1.20	1.61*	1.23	1.59*	1.35	1.46
iv) Willing to Rescind Dividend Increase in the Event of Growth Opportunities	56.80	0.52	0.83	0.22**	0.68	0.37	0.62	0.46	0.35	0.68
v) Cash Dividends as Residual after Financing Desired Investments from Earnings	46.90	0.28	0.23	0.34	0.25	0.32	0.21	0.28	0.30	0.27
vi) Dividend Payout Ratio Affects the Market Value of the Firm	71.60	0.79	0.80	0.78	0.95	0.63	0.82	0.77	0.98	0.61*
vii) Dividends Provide Signalling Mechanism of the Future Prospects of the Firm	71.60	0.90	0.93	0.88	1.08	0.73	0.92	0.85	0.90	0.90
viii) Investors have Different Relative Risk Perceptions of Dividends and Retained Earnings	64.20	0.83	0.83	0.83	0.90	0.76	0.79	0.90	0.78	0.88
ix) Investors are Indifferent between Receiving Dividends and Capital Gains	(64.20)	-0.63	-0.50	-0.76	-0.58	-0.68	-0.41	-0.85	-0.73	-0.54
x) Responsive to Shareholders' Preferences Regarding Dividends	82.70	1.12	1.05	1.20	1.10	1.15	0.95	1.31*	1.25	1.00
xi) Share Buyback Programme should Replace Dividend Payments of the Firm	(53.10)	-0.60	-0.35	(-)0.85**	-0.45	-0.76	-0.62	-0.56	-0.63	-0.59
xii) Dividend Payments Subject the Firm to the Scrutiny of the Investors	(49.40)	-0.36	-0.48	-0.24	-0.53	-0.20	-0.46	-0.23	-0.40	-0.32
xiii) Dividend Payments Provide a Bonding Mechanism to Encourage Managers to Act in Best Interest of the Shareholders	55.60	0.58	0.58	0.59	0.53	0.63	0.67	0.54	0.58	0.59

	% Strongly Agree/ Disagree	Mean	ROCE Low	High	EVA Low	High	WACC Low	High	Long-term Debt Low	High
i) Has Long-term Target Dividend Payout Ratio	81.50	1.15	0.95	1.34	0.90	1.39**	1.13	1.17	1.35	0.95
ii) Focus more on Absolute Level of Dividends than Dividend Changes	67.90	0.88	0.80	0.95	0.65	1.10*	0.95	0.81	1.03	0.73

(Contd.)

	% Strongly Agree/ Disagree	Mean	ROCE		EVA		WACC		Long-term Debt	
			Low	High	Low	High	Low	High	Low	High
iii) Dividend Change Follow Shift in Long-term Sustainable Earnings	85.20	1.41	1.45	1.37	1.50	1.32	1.33	1.49	1.48	1.34
iv) Willing to Rescind Dividend Increase in the Event of Growth Opportunities	56.80	0.52	0.35	0.68	0.20	0.83**	0.55	0.49	0.58	0.46
v) Cash Dividends as Residual after Financing Desired Investments from Earnings	46.90	0.28	0.20	0.37	0.30	0.27	0.23	0.34	0.40	0.17
vi) Dividend Payout Ratio Affects the Market Value of the Firm	71.60	0.79	0.93	0.66	0.85	0.73	0.60	0.98	0.80	0.78
vii) Dividends Provide Signaling Mechanism of the Future Prospects of the Firm	71.60	0.90	0.98	0.83	0.93	0.88	0.83	0.98	0.73	1.07
viii) Investors have Different Relative Risk Perceptions of Dividends and Retained Earnings	64.20	0.83	0.78	0.88	0.83	0.83	0.70	0.95	0.88	0.78
ix) Investors are Indifferent between Receiving Dividends and Capital Gains	(64.20)	-0.63	-0.60	-0.66	-0.70	-0.56	-0.68	-0.59	-0.65	-0.61
x) Responsive to Shareholders' Preferences Regarding Dividends	82.70	1.12	1.20	1.05	1.15	1.10	1.08	1.17	1.25	1.00*
xi) Share Buyback Programme should Replace Dividend Payments of the Firm	(53.10)	-0.60	-0.83	(-).39**	-0.88	(-).34**	-0.58	-0.63	-0.45	-0.76
xii) Dividend Payments Subjects the Firm to the Scrutiny of the Investors	(49.40)	-0.36	-0.28	-0.44	-0.13	(-).59*	-0.20	-0.51	-0.50	-0.22
xiii) Dividend Payments Provide a Bonding Mechanism to Encourage Managers to Act in Best Interest of the Shareholders	55.60	0.58	0.65	0.51	0.60	0.56	0.63	0.54	0.53	0.63

	% Strongly Agree/ Disagree	Mean	P/E Max.		P/E Min.		CA		Sector	
			Low	High	Low	High	No	Yes	Private	Public
i) Has Long-term Target Dividend Payout Ratio	81.50	1.15	1.16	1.30	1.14	1.32	1.14	1.15	1.15	1.10
ii) Focus more on Absolute Level of Dividends than Dividend Changes	67.90	0.88	0.78	0.92	0.84	0.87	0.81	0.90	0.85	1.10
iii) Dividend Change Follows Shift in Long-term Sustainable Earnings	85.20	1.41	1.51	1.38	1.51	1.38	1.33	1.43	1.38	1.60
iv) Willing to Rescind Dividend Increase in the Event of Growth Opportunities	56.80	0.52	0.38	0.65	0.35	0.68	0.57	0.50	0.59	0.00
v) Cash Dividends as Residual after Financing Desired Investments from Earnings	46.90	0.28	0.19	0.16	0.11	0.24	0.86	0.01***	0.21	0.80

(Contd.)

	"/oStrongly Agree/ Disagree	Mean	P/EMax.		P/E Min.		CA		Sector	
			Low	High	Low	High	No	Yes	Private	Public
vi) Dividend Payout Ratio Affects the Market Value of the Firm	71.60	0.79	0.81	0.78	0.84	0.77	0.81	0.78	0.80	0.70
vii) Dividends Provide Signalling Mechanism of the Future Prospects of the Firm	71.60	0.90	0.73	1.05	0.78	1.00	0.67	0.98	0.96	0.50
viii) Investors have Different Relative Risk Perceptions of Dividends and Retained Earnings	64.20	0.83	1.00	0.68	1.05	0.62**	0.86	0.82	0.80	1.00
ix) Investors are Indifferent between Receiving Dividends and Capital Gains	(64.20)	-0.63	-0.73	-0.43	-0.68	-0.49	-1.19	(-).43***	-0.56	-1.10
x) Responsive to Shareholders' Preferences Regarding Dividends	82.70	1.12	0.97	1.27	0.97	1.27	1.43	1.02**	1.10	1.30
xi) Share Buyback Programme should Replace Dividend Payments of the Firm	(53.10)	-0.60	-0.78	(-).38*	-0.84	(-).32**	-0.43	-0.67	-0.56	-0.90
xii) Dividend Payments Subject the Firm to the Scrutiny of the Investors	(49.40)	-0.36	-0.35	-0.49	-0.19	(-).65*	-0.19	-0.42	-0.38	-0.20
xiii) Dividend Payments Provide a Bonding Mechanism to Encourage Managers to Act in Best Interest of the Shareholders	?? gn	0.58	0.49	0.70	0.68	0.51	0.52	0.60	0.68	(-).!**

* significant at the 0.10 level.

** significant at the 0.05 level.

*** significant at the 0.01 level.

About 55 per cent of the respondents agree that dividend payments provide a bonding mechanism so as to encourage managers to act in the best interest of the shareholders. This belief is shared by the CFOs of the private sector than the public sector (mean score of 0.68 and -0.10).

National Economic Profitability Analysis

Review of Literature

The need for national economic profitability analysis of industrial projects in developing countries has been felt since long due to distortions in the market place. The United Nations Development Organization (UNIDO), the Organization for Economic Cooperation and Development (OECD), and the World Bank have sponsored research for developing practical methodologies for this purpose.

ICICI (1975) simplified the Little-Mirrlees methodology with the help of the World Bank and used it for appraising its projects. The development financial institutions use economic rate of return, domestic resource cost of US$, and effective rate of protection enjoyed by the project as a part of their economic analysis of projects.

Devarajan, Squire and Suthiwart-Narueput (1995) examine the proper role of project evaluation in today's world where countries have reduced major economic distortions and are reconsidering the role of the state. The project appraisal at the World Bank includes the border-pricing rule, discounting, and sporadic use of standard conversion factors. Little and Mirrlees (1990) find that the extent to which social cost benefit analysis is used at the World Bank is very limited. They argue that this change in circumstances calls for a shift in project evaluation away from a concern with the precision of rate-of-return calculation to a broader examination of the rationale for and merit of public-sector provision.

Results of the Present Study

The present study intends to find out the extent to which corporate India uses national economic prof-

itability analysis and the tools used for this purpose. Nearly 19 per cent of the respondents carry out national economic profitability analysis of their projects under consideration. The firms in public sector (30%) use it more than the private sector (18.31%).

The domestic resource cost of US$ is widely used (56.30%) followed by the effective rate of protection enjoyed (37.50%) by the respondents, who carry out national economic profitability analysis. Only the firms having CFOs with CA qualification use the effective rate of protection enjoyed. Nearly 31 per cent of the respondents, who carry out national economic profitability analysis, use full-fledged social cost-benefit analysis. Large firms are more likely to use full-fledged social cost-benefit analysis than the small firms. The small firms do not use full-fledged social cost-benefit analysis at all.

Conclusion

The results of the present survey are consistent with the theory and simultaneously revealing too. The shareholder value maximization objective is widely used by corporate India now than before. Large firms and growth firms place substantial emphasis on the EVA maximization objective. On the other hand, the objective to reduce side costs in the form of conflicts amongst the various stakeholders of the firm is not very popular.

It is reassuring that NPV is widely used now as a capital budgeting technique than it was ten or 20 years ago. The IRR method remains very popular despite its limitations. The firms use multiple criteria in their project choice decisions. The CAPM is also in use now to estimate the cost of equity capital. A substantial number of firms use company risk rather than project-specific risks in appraising new projects. Most firms do not rely solely on book values to determine the weights used to compute their WACC. The CFOs with CA qualification are more likely to use book value weights than the non-CA CFOs to find out WACC. This practice is not in conformity with the corporate finance theory. This implies that corporate finance professionals may not apply the NPV or CAPM rule correctly (see, for example, Graham and Harvey, 2001). Many firms use their target capital structure and market values to determine weights for the computation of their WACC.

The industry average beta is widely used by those firms which follow CAPM to estimate their cost of equity capital. The use of 10-year GOI Treasury Bonds and BSE Sensex as proxy for risk-free rate of return and market portfolio respectively is widely preferred by the industry. They use last five years' monthly share price data to estimate the beta. Most of the firms re-estimate the cost of capital annually. Fewer than 30 per cent of the firms surveyed recomputed their WACC continually with every investment. Most of the firms use cost of capital estimates for divisional performance measurement and EVA computation in addition to their capital budgeting decisions.

The firms surveyed find risk to be an important consideration in their capital budgeting decisions. Nearly one-third of the 81 respondents adjust the discount rate based on the project risk. The sensitivity analysis and scenario analysis are the most widely used techniques for project risk analysis. A very few respondents use decision tree analysis and Monte Carlo simulation to analyse the project risk. The argument could be that it is not worth the effort to assign the probabilities, unless the project involves major investment outlays (see, for example, Besley and Brigham, 2000). The firms use multiple criteria for assessing the project risk.

The public sector firms carry out national economic profitability analysis of their projects more than what is practised in the private sector. The domestic resource cost per US$ earned/saved is widely used for this purpose followed by the effective rate of protection enjoyed by the industry.

Firm size significantly affects the practice of corporate finance. The large firms than small firms are significantly more likely to follow MVA maximization objective. Large firms rely heavily on NPV techniques and CAPM, while small firms are relatively less likely to use payback criterion more. The simplicity of the payback period method and to some extent lack of familiarity of top management with more sophisticated techniques may explain the present practice amongst the small firms (see, for example, Graham and Harvey, 2002). The IRR method is more popular than NPV method. The small firms use Gordon's dividend discount model to estimate cost of equity. The large firms are more likely to use sophisticated project risk analysis techniques, such as risk-adjusted discount rate, decision tree, and Monte Carlo simulation, than the small firms. These findings about the effect of firm size on corporate finance practice could be an underlying cause of size-related asset pricing anomalies (Graham and Harvey, 2001).

The present study's analysis of capital structure finds that the retained earnings is the most preferred source of finance followed by debt and then equity. The results seem to suggest that firms do not have specific capital structure in mind when deciding as to how best to finance their projects. Low growth firms prefer more use of debt in their capital structure vis-a-vis the high growth firms. The companies that do not create shareholder value prefer debt than the EVA companies. The large firms prefer making bonds issue in the primary market. Very few firms use hybrid securities as a source of finance to protect bondholders from the firm/shareholders taking on risky or unfavourable projects.

The management believes that dividend decisions are important as they provide a signalling mechanism of the future prospects of the firm and thus affect its market value. Most of the firms have target dividend payout ratio and dividend changes follow shift in the long-term sustainable earnings. Therefore, dividend policy does matter to the CFOs and the investors. The large firms are significantly less willing to rescind dividend increase and are not in favour of share buyback replacing dividends than the small firms. The highly profitable and growth firms are in favour of share buyback programme replacing the dividend payments of the firm. The non-CA CFOs strongly disagree with the belief that investors are indifferent between receiving dividends and capital gains than the CFOs with CA qualification.

In summary, the practitioners do use the basic corporate finance tools that the professional institutes and business schools have taught for years like NPV, CAPM, and pecking-order theory for capital budgeting, cost of capital, and capital structure decisions to a great extent. However, the corporate finance practices vary with the firm size.

Due to the limited scope of the present study, a large number of research issues are not attempted but are felt in the course of the study. Some of them are — one, to study the gap between the CFOs' beliefs and actions, if any, by using secondary data for this purpose. For example, there is a need to investigate whether CFOs with an MBA degree who claim to practice shareholders' wealth maximization objective have actually created shareholder value. Two, to link the survey responses across areas. For example, further research is needed to investigate whether firms that use net present value method for project choice decisions are also likely to use CAPM for estimating cost of equity capital. Further, there is a need to explore whether the firms that follow pecking-order theory of corporate finance are also likely to have target dividend payout ratio. Three, to examine how financial flexibility, signalling, asset substitution, under-investment cost, free cash flows, and product market concerns affect the capital structure choices. Four, to study what are the management motivations governing share buyback decisions.

References

Agle, B R; Mitchell, R K and Sonnenfeld, J A (1999). "Who Matters to CEO? An Investigation of Stakeholder Attributes and Salience, Corporate Performance and CEO Values," *Academy of Management Journal,* Vol 42, No 5, pp 507-525.

Asquith, Paul and Mullins, David W Jr (1983). "The Impact of Initiating Dividend Payments on Shareholders' Wealth," *Journal of Business,* Vol 56, No 1, pp 77-96.

Baker, H K; Farrelly, G E and Edelman, R B (1985). "A Survey of Management Views on Dividend Policy," *Financial Management,* Vol 14, pp 78-84.

Barclay, Michael J and Smith, Clifford WJr (1999). "On Financial Architecture: Leverage, Maturity and Priority," in Chew, Donald H Jr (ed.), *The New Corporate Finance: Where Theory Meets Practice,* Irwin McGraw-Hill, Second Edition, pp 230-243.

Barclay, Michael J; Smith, Clifford WJr and Watts, Ross L (1995). "The Determinants of Corporate Leverage and Dividend Policies," *Journal of Applied Corporate Finance,* Vol 7, No 4, pp 4-19.

Baskin, J (1989). "An Empirical Investigation of Pecking Order Hypothesis," *Financial Management,* Vol 18, pp 26-35.

Berle, A (1954). *The 20* Century Capitalists Revolution,* New York: Harcourt Brace and World, Inc.

Berle, A and Means, G (1932). *The Modern Corporation and Private Property,* New York: Macmillan.

Berman, S L; Wicks, A C; Kotha, S and Jones, T M (1999). "Does Stakeholder Orientation Matter? The Relationship between Stakeholder Management Models and Firm's Financial Performance," *Academy of Management Journal,* Vol 42, No 5, pp 488-506.

Besley, Scott and Brigham, Eugene F (2000). *Essentials of Managerial Finance,* Philadelphia: The Dryden Press.

Bhaduri, Sumitra N (2002). "Determinants of Corporate Borrowing: Some Evidence from the Indian Corporate Sector," *Journal of Economics and Finance,* Vol 26, No 2, pp 200-215.

Bhat, Ramesh and Pandey, I M (1994). "Dividend Decisions: A Study of Managers' Perceptions," *Decision,* Vol 21, Nos 1 and 2, Januaryjune.

Bierman, H J (1993). "Capital Budgeting in 1992: A Survey," *Financial Management,* Vol 22, p 24.

Billingsley, R S and Smith, D M (1996). "Why Do Firms Issue Convertible Debt *?" Financial Management,* Vol 25, pp 93-99.

Black, Fischer (1976). "The Dividend Puzzle," *Journal of Portfolio Management,* Vol 2, pp 5-8.

Black, Fischer (1995). "Beta and Return," in Kolb, Robert W (ed.), *The Corporate Finance Reader,* Cambridge: Blackwell Business, pp 261-271.

Black, F; Jensen, M C and Scholes, M (1972). "The Capital Asset Pricing Model: Some Empirical Tests," in Jensen, M C (1972) (ed.), *Studies in the Theory of Capital Markets,* New York: Frederick A Praeger, Inc.

Block, S B (1999). "A Study of Financial Analysts: Practice and Theory," *Financial Analysts Journal,* July/August, pp 86-95.

Blume, Marshall and Friend, Irwin (1973). "A New Look at the CAPM," *Journal of Finance,* Vol 8, No 1, pp 19-33.

Bodie, Zvi and Merton, Robert C (2000). *Finance,* New Jersey: Prentice Hall International, Inc.

Bodnar, G M; Hayt, G S and Marston, R C (1998). "1998 Wharton Survey of Financial Risk Management by US Non-financial Firms," *Financial Management,* Vol 27, pp 70-91.

Brealey, R A and Myers, Stewart C (2000). *Principles of Corporate Finance,* New-Delhi: Tata McGraw-Hill.

Brennan, Michael and Kraus, Alan (1987). "Efficient Financing Under Asymmetric Information," *Journal of Finance,* Vol 42, pp 1225-1243.

Brigham, E F (1975). "Hurdle Rates for Screening Capital Expenditure Proposals," *Financial Management,* Vol 4, pp 17-26.

Bruner, Robert F; Eades, Kenneth M; Harris, Robert S and Higgins, Robert C (1998). "Best Practices in Estimating Cost of Capital: Survey and Synthesis," *Financial Practices and Education,* pp 13-28.

Business Today (2000). "bt 500: India's Most Valuable Companies," October 6, pp 112-131.

Business Today (2001). "India's Biggest Wealth Creators," March 6, pp 56-79.

Business Today (2001). "bt 500: India's Most Valuable Companies," October 14, pp 74-96.

Chadwell-Hatfield, Patricia; Goitein, Bernard; Horvath, Philip and Webster, Allen (1997). "Financial Criteria, Capital Budgeting Techniques, and Risk Analysis of Manufacturing Firms," *Journal of Applied Business Research,* pp 95-104.

Chan, Louis K C and Lakonishok, Josef (1995). "Are the Reports of Beta's Death Premature?" in Kolb, Robert W (ed.), *The Corporate Finance Reader,* Cambridge: Blackwell Business, pp 249-260.

Rao, Cherukuri U (1996). "Capital Budgeting Practices: A Comparative Study of India and Select South East Asian Countries," *ASCI Journal of Management,* Vol 25, pp 30-46.

Cochrane, J H (1997). "Where is the Market Going?" Uncertain Facts and Novel Theories," *Economic Perspective,* Vol 26, pp 3-40.

Constantinides, George M and Grundy, Bruce D (1989). "Optimal Investment and Stock Repurchase and Financing as Signals," *The Review of Financial Studies,* Vol 2, pp 445-466.

Copeland, Thomas A and Weston, Fred J (1983). *Financial Theory and Corporate Policy,* Massachusetts: Addison-Wesley Publishing Company.

DeAngelo, Harry and Rice, Edward (1983). "Anti-takeover Amendments and Stockholders' Wealth," *Journal of Financial Economics,* Vol 11, pp 329-360.

Devarajan, Shantayanan; Squire, Lyn and Suthiwart-Narueput, Sethaput (1995). "Reviving Project Appraisal at the World Bank," *The World Bank Policy Research Working Paper 1496,* The World Bank.

Dillman, D (1978). Mail and Telephone Surveys: The Total Design Method, New York: John Wiley.

Donaldson, G (1984). *Managing Corporate Wealth: The Operations of Comprehensive Financial Goals System,* New York: Praeger Publishers.

Donaldson, G (1994). *Corporate Restructuring: Managing the Change Process from Within,* Boston: Harvard University Press.

Drury, C; Braund, S and Tayles, M (1993). *A Survey of Management Accounting Practices in UK Manufacturing Companies,* ACCA Research Paper 32, Chartered Association of Certified Accountants.

Epps, R W and Mitchem, C E (1994). "A Comparison of Capital Budgeting Techniques with those Used in Japan and Korea," *Advances in International Accounting,* Vol 7, pp 207-214.

Fama, E F and Babiak, H (1968). "Dividend Policy: An Empirical Analysis," *Journal of American Statistical Association,* Vol 63, pp 1132-1161.

Fama, E F and French, K R (1992). "The Cross-section of Expected Stock Returns," *Journal of Finance,* Vol 46, pp 427-466.

Fama, E F and French, K R (1993). "Common Risk Factors in the Returns on Stocks and Bonds," *Journal of Financial Economics,* Vol 33, pp 3-56.

Fama, E F and French, K R (1995). "Size and Book-to-market Factors in Earnings and Returns," *Journal of Finance,* Vol 50, pp 131-155.

Fama, E F and French, K R (1996a). "Multi-factor Explanations of Asset Pricing Anomalies," *Journal of Finance,* Vol 51, pp 55-84.

Fama, E F and French, K R (1996b). "The CAPM is Wanted, Dead or Alive," *Journal of Finance,* Vol 51, pp 1947-1958.

Fama, E F and MacBeth, J D (1973). "Risk, Return, and Equilibrium: Empirical Tests," *Journal of Political Economy,* Vol 81, pp 607-636.

Fan, Dennis K K and So, Raymond W (2000). "A Survey on Capital Structure Decisions of Hong Kong Firms," *Review of Pacific Basin Financial Markets and Policies,* Vol 3, No 3, pp 347-365.

Friedman, Milton (1962). *Capitalism and Freedom,* Chicago: University of Chicago Press.

Friedman, Milton (1970). "The Social Responsibility of Business is to Increase its Profits," *New York Times Magazine,* September 13, pp 32-33, 122, 126.

Gilbert, Erika and Reichert, Alan (1995). "The Practice of Financial Management Among Large United States Corporations," *Financial Practice and Education,* pp 16-23.

Gitman, LJ and Forrester Jr, J R (1977). "A Survey of Capital Budgeting Techniques Used by Major US Firms," *Financial Management,* Vol 6, pp 66-71.

Gitman, L J and Mercurio, V (1982). "Cost of Capital Techniques Used by Major US Firms: Survey and Analysis of Fortune's 1000," *Financial Management,* Vol 14, pp 21-29.

Gordon, MJ and Shapiro, E (1956). "Capital Equipment Analysis: The Required Rate of Profit," *Management Science,* Vol 3, pp 102-110.

Graham, J R and Harvey, C R (2001). "The Theory and Practice of Corporate Finance: Evidence from the Field, *"Journal of Financial Economics,* Vol 60, Nos 2&3, pp!87-243.

Graham, J R and Harvey, C R (2002). "How do CFOs Make Capital Budgeting and Capital Structure Decisions," *Journal of Applied Corporate Finance,* Vol 15, No 1, pp 8-23.

Green, R (1984). "Investment Incentives, Debt and Warrants,*" Journal of Financial Economics,* Vol 13, pp 115-136.

Grinold, Richard C (1995). "Is Beta Dead Again," in Kolb, Robert W (ed.), *The Corporate Finance Reader,* Cambridge: Blackwell Business, pp 272-278.

Harris, T C and Ramsay, I M (1995). "An Empirical Investigation of Australian Share Buybacks," *Australian Journal of Corporate Laws,* Vol 4, pp 393-416.

Healy, P and Palepu, K (1988). "Earnings Information Conveyed by Dividend Initiations and Omissions," *Journal of Financial Economics,* Vol 21, pp 149-175.

Helwege, Jean and Liang, Nellie (1996). "Is There a Pecking Order? Evidence from a Panel of IPO Firms," *Journal of Financial Economics,* Vol 40, pp 429-458.

ICICI (1975). *Economic Rate of Return - ICICI Projects,* Mumbai: ICICI.

IRIS (2001). *IRIS Book 2007: The Investor's Guide to Indian Corporates,* Mumbai: Investment Research and Information Services Limited.

Jarrell, Gregg and Poulsen, Annette (1988). "Dual-class Recapitalizations as Anti-takeover Mechanisms: The Recent Evidence," *Journal of Financial Economics,* Vol 20, pp 129-152.

Jensen, Michael C (1986). "Agency Cost of Free Cash Flows, Corporate Finance and Takeovers," *American Economic Review,* Vol 76, No 2, pp 323-329.

Jensen, Michael C (2001). "Value Maximization, Stakeholder Theory and the Corporate Objective Function," *Journal of Applied Corporate Finance,* Vol 14, No 3, pp 8-21.

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

Jensen, Michael and Meckling, William (1999). "Specific Knowledge and Divisional Performance Measurement," *Journal of Applied Corporate Finance,* Vol 12.

Jog, V M and Srivastava, A K (1995). "Capital Budgeting Practices in Corporate Canada," *Financial Practice and Education,* Vol 5, pp 37-43.

Kester, George W and Chang, Rosita P (1999). "Capital Budgeting Practices in the Asia-Pacific Region: Australia, Hong Kong, Indonesia, Malaysia, Philippines, and Singapore," *Financial Practice and Education,* Vol 9, No 1, pp 25-33.

Lakonishok, Josef and Shapiro, Alan C (1986). "Systematic Risk, Total Risk and Size as Determinants of Stock Market Returns," *Journal of Banking and Finance,* Vol 10, pp 115-132.

Lang, Larry H P and Litzenberger, Robert H (1989). "Dividend Announcements: Cash Flow Signaling vs Free Cash Flow Hypothesis?" *Journal of Financial Economics,* Vol 24, pp 155-180.

Lazo, Shirley A (1999). "How do Corporate Leaders See Payouts? An Important Signals, Survey Finds," *Barrons,* January 4, p 40.

Lintner,J (1956). "Distribution of Incomes of Corporations Among Dividends, Retained Earnings and Taxes," *American Economic Review,* Vol 46, pp 97-113.

Little, I M D and Mirrlees, James A (1990). "Project Appraisal and Planning Twenty Years On," *World Bank Annual Conference on Development Economics.*

Miller, Merton H and Modigliani, Franco (1961). "Dividend Policy, Growth and Valuation of Shares, *"Journal of Business,* Vol 34, pp 411-413.

Mitchell, R K; Agle, B R and Wood, D J (1997). "Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts," *Academy of Management Review,* Vol 40, No 4, pp 853-886.

Mohanty, Pitabas (1999). "Dividend and Bonus Policies of Indian Companies: An Analysis," *Vikalpa,* Vol 24, No 4, pp 35-42.

Moore, J S and Reichert, A K (1983). "An Analysis of Financial Management Techniques Currently Employed by Large US Corporations," *Journal of Business Finance & Accounting,* Vol 10, pp 623-645.

Myers, Stewart C (1977). "Determinants of Corporate Borrowing," *Journal of Financial Economics,* Vol 5, pp 147-175.

Myers, Stewart C (1984). "The Capital Structure Puzzle," *Journal of Finance,* Vol 39, No 3, pp 575-592.

Noe, Thomas (1988). "Capital Structure and Signaling Game Equilibria," *Review of Financial Studies,* Vol 1, pp 331-356.

Ogden, S and Watson, R (1999). "Corporate Performance and Stakeholder Management: Balancing Shareholder and Customer Interests in the UK Privatized Water Industry," *Academy of Management Journal,* Vol 42, No 5, pp 529-538.

Pandey, I M (1984). "Financing Decisions: A Survey of Management Understanding," *Economic & Political Weekly,* Vol XIX (8), pp M28-M31.

Pandey, I M (1989). "Capital Budgeting Practices of Indian Companies," *MDI Management Journal,* Vol 2, No 1, pp 1-15.

Pandey, I M and Bhat, Ramesh (1990). "Significance of Financial Goals pursued by Companies in India: Survey Findings," *Journal of Financial Management & Research - International Review of Finance, July-December.*

Pandey, I M; Chotigeat, T and Ranjith, Manoj K (2000). "Capital Structure Choices in an Emerging market: The Case of Thailand," *Management and Change,* Vol 4, No 1, January-June, pp 1-32.

Petry, Glenn H and Sprow, James (1993). "The Theory of Finance in 1990s," *The Quarterly Review of Economics and Finance,* pp 359-381.

Pinegar, Michael J and Wilbricht, Lisa (1989). "What Managers think of Capital Structure Theory: A Survey," *Financial Management,* pp 82-89.

Porwal, L S (1976). *Capital Budgeting in India,* New Delhi: S Chand & Co.

Poterba, J and Summers, L (1995). "A CEO Survey of US Companies' Time Horizon and Hurdle Rates," *Sloan Management Review,* pp 43-53.

Raghunathan, V and Dass, Prabina (1999). "Corporate Performance: Post Liberalization," *ICFAI Journal of Applied Finance,* Vol 5, No 2, pp 6-31.

Rappaport, Alfred (1990). "Lets Let Business be Business," *New York Times,* February 4.

Reinganum, Marc R (1982). "A Direct Test of Roll's Conjecture on the Firm Size Effects, *"Journal of Finance,* Vol 37, pp 27-35.

Ritter, Jay R and Chopra, Navin (1989). "Portfolio Rebalancing and the Turn-of-the-year Effect," *Journal of Finance,* Vol 44, pp 149-166.

Roll, Richard (1986). "The Hubris Hypothesis of Corporate Takeovers," *Journal of Business,* Vol 59, pp 197-216.

Ross, S A (1976). "The Arbitrage Theory of Capital Asset Pricing," *Journal of Economic Theory,* Vol 13, pp 341-360.

Sangster, A (1993). "Capital Investment Appraisal Techniques: A Survey of Current Usage, *"Journal of Business, Finance and Accounting,"* Vol 20, pp 307-332.

Shao, L P and Shao, A T (1996). "Risk Analysis and Capital Budgeting Techniques of US Multinational Enterprises," *Managerial Finance,* Vol 22, pp 41-57.

Sharpe, William F (1964). "Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk," *Journal of Finance,* Vol 19, pp 425-442.

Siegel, J J (1995). "The Equity Premium: Stock and Bond Returns Since 1802," in Kolb, Robert W (ed.), *The Corporate Finance Reader,* Cambridge: Blackwell Business, pp 237-248.

Siegel,JJ and Thaler, R H (1997). "Anomalies: The Equity Premium Puzzle, *"Journal of Economic Perspectives,* Vol 11, pp 191-200.

Smith, Clifford and Watts, Ross (1992). "The Investment Opportunities Set and Corporate Financing, Dividend and Compensating Policies," *Journal of Financial Economics,* Vol 32, pp 263-292.

Stanley, M T and Block, S B (1984). "A Survey of Multinational Capital Budgeting," *The Financial Review,* Vol 19, pp 36-54.

Trahan, E A and Gitman, LJ (1995). "Bridging the Theory-practice Gap in Corporate Finance: A Survey of Chief Financial Officers," Quarterly *Review of Economics and Finance,* Vol 35, pp 73-87.

Walkling, Ralph and Long, Michael (1984). "Agency Theory, Managerial Welfare, and Takeover Bid Resistance," *Rand Journal of Economics,* Vol 15, pp 54-68.

Wallace, A (1980). "Is Beta Dead?" *Institutional Investor,*

Vol 14, pp 22-30.

Wansley, J W; Lane, W R and Sarkar, S (1989). "Management's Views on Share Repurchase and Tender Offer Premiums," *Financial Management,* Vol 18, pp 97-110.

Welch, Ivo (2000). "Views of Financial Economists on the Equity Premium and on Professional Controversies," *Journal of Business,* Vol 73, No 4, pp 501-537.

Williamson, O (1963). "Managerial Discretion and Business Behaviour," *American Economic Review,* Vol 53.

Wong, K A; Farragher, E J and Leung, R K C (1987). "Capital Investment Practices: A Survey of Large Corporations in Malaysia, Singapore, and Hong Kong," *Asia Pacific Journal of Management,* Vol 4, pp 112-123.