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Articles **Page**

Performance Evaluation of Equity Shares
Dr Anil Kumar Mittal and **Dr Sushil Sharma** 9

Capital Expenditure Financing – From Corporate Finance to Project Finance
Vikas Srivastva and **Ashish Kumar** 17

Testing the Validity of EMH: An Empirical Study of Some Penny Stocks
Dr N S Malik and **Dr Suresh Kumar Mittal** 36

Causes and Impact of Non-Performing Assets in Public Sector Banks:
A State Level Analysis
Dr Sudesh Chhikara 48

An Analysis of Trends and Patterns of Foreign Direct Investment in India
Dr R C Sharma, Vikas Madhukar and **Shivali** 57

Influences in Purchase of Consumer Durables:
A Study of Rural Customers of Punjab
Abhay Jain and **Parul Kackria** 70

Relationship between Corporate Social Responsibility and
Financial Performance Revisited
Shveta Kapoor 79

Cable TV Vs Satellite TV: A Study of Customer Satisfaction
Dr B B Goyal and **Nidhi Aggarwal** 99

Outcome Budgeting as a Tool of Fiscal Management
Dr Suresh Bedi 107

Economic Value Added and Traditional Performance Measures:
A Review of Academic and Empirical Literature
Dr Karam Pal Singh and **Jasvir S Sura** 110

Book Review

Who Stole My Customers?? by Harvey Thompson
Dr Atul Dhingra 121

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From the Desk of Editor-in-Chief

It is well said that being in the driver's seat is probably the most exciting place, but it is also most stressful. When driving through the thick of things, a good navigator is a boon. And this is what is the endeavour of 'Amity Management Analyst' – to be a good navigator, and a rich source of knowledge and information to both the corporate world and the academicians.

Every organization has a mission of ensuring an appropriate rate of return for its shareholders while complying with the interests of its other stakeholders. While all other functional areas of management make their respective contributions in accomplishing the mission of an organization, human resource management has to play an added role in this direction. For example, superior production facilities in an organization or a superior product alone are not enough to secure and sustain an edge over its competitors because physical facilities can be duplicated or improved and, therefore, cannot provide a sustainable advantage for a long time. It is, on the other hand, selected human skills, knowledge bases and other service strengths that are difficult to be reproduced and, therefore, are the real sources instrumental in providing maintainable advantage. It is perhaps for this reason that today management strategists show no less concern towards potential human resource costs than for potential capital costs.

In view of above, it has rightly been advocated by human resource experts that human resources should be viewed from an investment perspective and, therefore, employees should be considered as valuable assets deserving appropriate investments. It is now not uncommon to come across many leading organizations that have recognized the strategic importance of human factor and adopted an investment perspective towards this factor. Since investment perspective provides a valuable guide for strategic management, it will be in the fitness of things if an organization invests substantially in developing such potential skills, knowledge bases, competencies and capabilities which its competitors may find difficult to reproduce. Only then and then alone, the organization would be able to secure a sustainable advantage over its competitors.

The investment perspective calls for appropriate investments by employers on the training and development of their human resources. In this respect, an employer may prefer to invest more on providing specific training, usually on-the-job, which may be very useful to his organization but not of any significant use to other organizations. The return on such investment can be in the form of employer paying lower wage to his employees after specific training than their enhanced productivity would warrant because other employers may not have any use for such specific skills. Such an investment, therefore, will yield financial gains in the form of paying less for the enhanced productivity and, on the other hand, reduce the employee turnover rate. Similarly, the employer can invest on the cross-functional assignments, job rotation programme, etc., in the case of their managerial personnel. Employer should also invest on talent management which not only helps in providing right person at the right job but also helps in retaining the employee. Performance management is another area where there is ample scope for beneficial investment as it is useful not only in developing an employee and improve his productivity but also in compensation management, etc.

Thus, by making strategic human resource investment decisions and following specific investment approaches, an organization would be able to serve not only the interests of all its different stakeholders but also realize its mission.

Prof (Dr) R C Sharma
Editor-in-Chief
Amity Management Analyst

Contents

Articles	Page
Performance Evaluation of Equity Shares Dr Anil Kumar **Mittal** and **Dr Sushil Sharma**	9
Capital Expenditure Financing – From Corporate Finance to Project Finance Vikas Srivastva and **Ashish Kumar**	17
Testing the Validity of EMH: An Empirical Study of Some Penny Stocks Dr N S **Malik** and **Dr Suresh Kumar Mittal**	36
Causes and Impact of Non-Performing Assets in Public Sector Banks: A State Level Analysis Dr **Sudesh Chhikara**	48
An Analysis of Trends and Patterns of Foreign Direct Investment in India Dr R C **Sharma, Vikas Madhukar** and **Shivali**	57
Influences in Purchase of Consumer Durables: A Study of Rural Customers of Punjab **Abhay Jain** and **Parul Kackria**	70
Relationship between Corporate Social Responsibility and Financial Performance Revisited **Shveta Kapoor**	79
Cable TV Vs Satellite TV: A Study of Customer Satisfaction Dr B B **Goyal** and **Nidhi Aggarwal**	99
Outcome Budgeting as a Tool of Fiscal Management Dr **Suresh Bedi**	107
Economic Value Added and Traditional Performance Measures: A Review of Academic and Empirical Literature Dr **Karam Pal Singh** and **Jasvir S Sura**	110
Book Review	
Who Stole My Customers?? by Harvey Thompson Dr **Atul Dhingra**	121

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Performance Evaluation of Equity Shares

Dr Anil Kumar Mittal* and Dr Sushil Sharma**

The purpose of this paper is to evaluate the performance of equity shares with the application of three measures, namely Sharpe's measure, Treynor's measure and Jensen's measure. Performance evaluation is one of the important dimensions of investment decision making. After having made investment into equity shares or constructed portfolios to achieve the objectives in terms of risk and return, the investor would like to know whether the investment in equities or portfolios of equities is meeting the predetermined objectives. Actual performance of equities is compared with the benchmark. This benchmark is the performance of market portfolio. Bombay Stock Exchange Sensitive Index has been taken as proxy of market portfolio. For the purpose of this study, the performance has been evaluated on the basis of market prices of equity shares for the period January 1996 to Dec. 2002. The performance is evaluated on the basis of weekly as well as monthly price data of 129 companies listed on Bombay Stock Exchange. The results revealed that majority of equity shares have performed below the benchmark in almost all the years when performance is measured on the basis of weekly as well as monthly data in all the three models. Taking the study period as a whole, it is obvious that only 25% of the companies could show higher performance than the market portfolio considering weekly and monthly returns.

Introduction

Performance evaluation is one of the important dimensions of investment decision making. After having made investment into equity shares or constructed portfolio to achieve the objectives in terms of return and risk, the investor would like to know whether the investment in equities or portfolio of equities is meeting the predetermined objectives. If the investment in equity shares is not meeting his investment objectives, the investor can revise the portfolio.

The purpose of this paper is to evaluate the performance of equity shares with the application of three measures, namely Sharpe's measure (1966), Treynor's measure (1965) and Jensen's measure (1968). Actual performance of equities is compared with the benchmark. This benchmark is the performance of market portfolio. Bombay Stock Exchange Sensitive Index has been taken as proxy of market portfolio. Belgaumi (1995) made an attempt to evaluate the performance of 30 individual shares listed on Bombay Stock Exchange on the basis of fortnightly share prices over the period January 1989 to Dec. 1994 by using Sharpe, Treynor and Jensen measures of performance. BSE National Index of 100 shares was taken as a benchmark.

Review of Literature

Jayadev M. (1998) evaluated the performance of as many as 44 mutual fund schemes on the basis of month end NAVs by applying Sharpe, Treynor and Jensen models. He used logarithmic returns of more than three years. Interest rates on bank deposits was taken as risk free rate of return. The results suggest that 30 schemes out of 44 selected are having superior performance than the benchmark according to Sharpe Ratio and 24 schemes exhibit superior performance under the Treynor model. It is further observed that due to lack of proper diversification the funds performance has declined.

Gupta (1999) evaluated the performance 73 mutual fund schemes on the basis of weekly NAVs for the five year period April 1, 1994 to March 31, 1999.

Singh and Singla (2000) made an attempt to evaluate the performance of mutual funds by taking monthly data of 12 mutual funds from October 1992 to September 1996 and BSE national index as a benchmark. The results indicate that, under the Sharpe's measure, approximately 33 per cent mutual funds had performed above the benchmark. Under the Treynor's Index, only two mutual funds had performed over the market index, which indicates that investors who invest in mutual funds to form a well diversified portfolio, did not receive adequate returns per unit systematic risk undertaken. Under the Jensen's Index, again only 2 mutual funds showed superior performance, while the remaining funds indicate the inferior performance of those funds in comparison to the market.

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Narasimhan and Vijayalakshmi (2001) evaluated the performance of as many 76 mutual funds schemes of around 25 asset management companies. They found, that there is a general shift in the investment strategy of holding a diversified portfolio and in optimizing the risk-return of investment to investing in predictive winners of the period.

Methodology

For the purpose of this study, the performance has been evaluated on the basis of market prices of equity shares for the period January 1996-December 2002. The performance is evaluated on the basis of weekly as well as monthly market price data of 129 companies listed on Bombay Stock Exchange.

Return

The returns are computed as follows:

$R_{it} = \ln (P_i t/P_{it-1})100$

Rit is return of the equity share 'i' for the period 't'. 't' and 't-1' indicate week/month end and week/month beginning prices respectively, t=1, 2, 3.....n. 1n is the natural logarithm to the base 'e'.

The average monthly/weekly return of the equity shares has been ascertained as follows:

Where, ARi is the average return of the equity share. Similarly, the returns on the market index were calculated. BSE Sensitive Index is the benchmark, which is a value weighted portfolio comprising 30 equity shares actively traded in Bombay Stock Exchange. The value of the market index on the respective date of market price of shares is considered and the returns are computed. The return on the

$$Ar_i = \sum_{t=i}^{n} R_{it}/n$$

market portfolio is computed as follows:

$R_{mt} = l_n (I_t/ I_{t-1})100$

Where, R_{mt} is the return on the market index, 'i' the index value and l_n the natural logarithm to the base 'e'. The average return on the market index is calculated as follows:

$$AR_m = \sum_{t=i}^{n} R_{mt}/n$$

Where, AR_m is average return on the market portfolio (Index).

Risk Free Return (Rf)

Risk free return means minimum return during the period on investment with no risk of losing the investment. For the present study, treasury bills rate of interest is assumed to be the risk free rate of return. Weekly annual rate of interest on these treasury bills has varied from period to period. Thus, different riskless rate of return has been used in different years. The annual rate of interest was used for calculation of monthly/weekly riskless rate of return on simple average basis.

Risk

Variation in the rate of return is known as risk. Risk is of two types. Total risk and systematic risk. Total risk is measured by standard deviation. Systematic risk is market related risk. It is also called non-diversifiable risk. The systematic risk of the market (Index) is always one. The systematic risk of riskless investment is zero. The actual systematic risk of a security (portfolio) can be one (equal to that of market) or greater/less than one.

Both the measures of risk (σ and β) are used for performance evaluation of equity shares. In Sharpe's measures, standard deviation is used as a measure of risk. Systematic risk is used in Treynor and Jensen measures of performance evaluation.

The standard deviation of per cent logarithmic returns of individual shares is calculated as follows.

$$\sigma_i = \sqrt{\frac{1}{n} \sum_{t=i}^{n} (R_{it} - r_i)^2}$$

The total risk of the market portfolio is calculated as follows:

$$\sigma_m = \sqrt{\frac{1}{n} \sum_{t=i}^{n} (R_{mt} - r_m)^2}$$

In order to calculate the systematic risk (ß) of individual shares, the rates of return of the share is regressed on the rates of return of the market portfolio which is BSE Sensitive Index. The slope of the regression line reflects the systematic risk (Beta) of the share. Thus, the CAPM version of market model is used to find out beta value, which is as follows:

$R_i = a + ß_i R_m + e_i$

Where,

R_i is the return on the individual security

R_m is the return on market index, i.e., BSE Sensitive Index

e_i is the error term

a_i is the constant term

β_i is the systematic risk (Beta)

Sharpe's Measure

Sharpe has attempted to get a summary measure of portfolio performance. It is also called reward-variability ratio. It indicates the relationship between the security's additional return over risk-free return and total risk of the security measured in terms of standard deviation.

The Sharpe index is given by:

$$SR = \frac{\bar{r}_i - r_f}{\sigma_i}$$

Where,

SR = Sharpe Ratio

$\bar{r}_i$ = average return on security i

r_f = riskless rate of interest

σ_i = standard deviation (risk) of the returns of security i.

Thus, Sharpe's index measures the risk premium of the security relative to the total amount of risk of the security. Higher the ratio, the better it is. The benchmark for comparison is,

$$RVAR_m = \frac{\bar{r}_m - r_f}{\sigma_m}$$

Where,

RVARm is reward to variability of the market index.

Treynor's Measure

Treynor's performance measure is based on systematic risk as measured by security's/portfolio's beta coefficient rather than total risk. This is also called reward to volatility ratio (RVOL). Treynor's performance measure is the concept of a characteristic line. The characteristic line relates the market return to specific portfolio return without any direct adjustment for risk. The slope of the characteristic line is the beta coefficient, a measure of portfolio's systematic risk. The Treynor's performance index is calculated as follows:

$$TR = \frac{\bar{r}_i - r_f}{\beta_i}$$

Where,

TR = Treynor Ratio

$\bar{r}_i$ = average return on security i

r_f = riskless rate of interest

β_i = beta coefficient of security i

Thus, the Treynor's ratio measures the risk premium of the security/portfolio, where risk premium equals the difference between the return of the security/portfolio and the riskless rate. The risk premium is related to the amount of systematic risk of the security/portfolio. Higher the ratio, the better it is.

The benchmark for comparison is ($\bar{r}_m - r_f$). Where, $\bar{r}_m$ is the mean return on market portfolio (Index). As the beta of the market portfolio is always one, the denominator is one.

Jensen's Measure

Sharpe and Treynor models provide measures for ranking the relative performances of various portfolio on risk-adjusted basis. Jensen attempts to construct a measure of absolute performance on a risk-adjusted basis, that is, a definite standard against which performances of various funds can be measured. This standard is based on measuring the portfolio manager's predictive ability to earn returns through successful prediction of security prices which are greater than those we expect given the level of riskiness of his portfolio. In other words, we can determine if more than expected returns are being earned for the portfolio's riskiness.

The following is the equation of Jensen model:

$$\bar{R}_{it} - R_{ft} = \alpha_i + \beta_i \ (\bar{R}_{mt} - R_{ft})$$

Where

$\bar{R}_{it}$ = average return on security i for period t

R_{ft} = riskless rate of interest for period t

α_i = intercept that measures the forecasting ability of the portfolio manager.

β_i = a measure of systematic risk

$\bar{R}_{mt}$ = average return of a market portfolio for period t.

The higher the intercept (α), the better the performance. A positive value of alpha would indicate that the portfolio had an average return higher than the benchmark return (equilibrium portfolio return), reflecting the average superior extra return because of superior management talent. A negative value of alpha indicates inferior management performance, representing a rate of return less than the benchmark.

Empirical Findings

The distribution of companies according to Sharpe, Treynor and Jensen Performance measure on yearly basis as well as for the overall period is given in Table 1. The results reveal that majority of equity shares have performed below the benchmark in 5 out of 7 years (except 1998 and 2001) when performance is measured on the basis of weekly as well as monthly data under the Sharpe's model. Considering the study period as a whole, only 30 (23.26 per cent) of the equity shares have shown performance above the benchmark on the basis of weekly data and 25 (19.38 per cent) on the basis of monthly data.

According to Treynor's reward to volatility ratio also the number of companies which have under performed the benchmark is much higher in 6 out of 7 years (except 2001) than that of those over performing the market portfolio on the basis of weekly as well as monthly data. For the study period as a whole, only 35 (27.13 per cent) of the companies have over performed the stock market on the basis of weekly data and 28 (21.71 per cent) of companies considering the monthly performance.

According to Jensen's measure also the number of companies reporting better performance than the benchmark return is significantly less in all the 7 years on the basis of weekly data than that of showing lower performance. Similar, is the case with regard to monthly performance except the year 2001. Taking the study period as a whole, it is obvious that only 32 (24.81 per cent) of the companies could show higher performance than the market portfolio considering their weekly performance and 26 (20.16 per cent) on the basis of monthly return.

When Sharpe's measure is applied to weekly data as a whole, the following 10 companies in each group have shown highest and lowest performance in comparison to their respective benchmark (See Table 2).

Likewise, when Treynor's model is applied to weekly data as a whole, the following 10 companies in each group have shown highest and lowest performance in comparison to their respective benchmark (See Table 3).

When Jensen's model is applied to the weekly data as a whole, the following 10 companies in each group have shown highest and lowest performance in comparison to zero (See Table 4).

When Sharpe's measure is applied to monthly data as a whole, the following 10 companies in each group have shown highest and lowest performance is comparison to their respective benchmark (See Table 5).

Likewise, when Treyner's model is applied to monthly data as a whole, the following 10 companies in each group have shown highest and lowest performance is comparison to their respective benchmark (See Table 6).

When Jensen's model is applied to monthly data as a whole, the following 10 companies in each group have shown highest and lowest performance is comparison to zero (See Table 7).

Conclusions

The results indicate that under the Sharpe's measure all but one security have performed worse than the index. Under the Treynor's Index, while 16 companies have earned more than the Index, the remaining 14 companies have under performed the benchmark. Under the Jensen's performance measure, while 17 securities have performed better than the benchmark, the remaining 13 shares exhibited the performance under the benchmark.

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Table 1
Frequency Distribution of Sharpe Treynor, and Jensen Performance Measures

	1996	1997	1998	1999	2000	2001	2002	All
SHARPE RATIO								
Weekly Data								
More than Benchmark	39	45	93	23	38	93	15	30
Less than Benchmark	90	84	36	106	91	36	114	99
Total	129	129	129	129	129	129	129	129
Monthly Data								
More than Benchmark	41	47	80	35	29	95	19	25
Less than Benchmark	88	82	49	94	100	34	110	104
Total	129	129	129	129	129	129	129	129
TREYNOR RATIO								
Weekly Data								
More than Benchmark	63	59	29	57	43	66	60	35
Less than Benchmark	66	70	100	72	86	63	69	94
Total	129	129	129	129	129	129	129	129
Monthly Data								
More than Benchmark	60	54	43	32	43	74	40	28
Less than Benchmark	69	75	86	97	86	55	69	101
Total	129	129	129	129	129	129	129	129
JENSEN ALPHA								
Weekly Data								
More than Zero	63	61	28	20	41	59	60	32
Equal to Zero	00	00	00	00	00	00	00	00
Less than Zero	66	68	101	109	88	70	69	97
Total	129	129	129	129	129	129	129	129
Monthly Data								
More than Zero	58	55	22	29	41	76	45	26
Equal to Zero	00	00	00	00	00	00	00	00
Less than Zero	71	74	104	100	88	53	84	103
Total	129	129	129	129	129	129	129	129

Table 2

Group I (Highest Performing Companies)		Group II (Lowest Performing Companies)	
Name of the Co.	**Rank**	**Name of the Co.**	**Rank**
Hind. Lever	1	Guj. Alkali	1
German Rene	2	Ind. Seamless	2
TVS Suzuki	3	Garden Silk	3
Rhone Poulen	4	Sesa Goa Ltd	4
Dig Equipment	5	Bomb. Dyeing	5
Rolta India	6	Dharampur Sugar	6
Hero Honda	7	Govind Rubber	7
Cadbury (I)	8	Mahavir Spg	8
Pfizer	9	Vam Organic	9
Pun. Tractor	10	Kalyani Steel	10

Table 3

Group I (Highest Performing Companies)		Group II (Lowest Performing Companies)	
Name of the Co.	**Rank**	**Name of the Co.**	**Rank**
TVS Suzuki	1	Majestic Auto	1
Bharat Tele	2	Ind. Seamless	2
Jensen & Nich	3	Garden Silk	3
Abbort Labs	4	LML Ltd.	4
Hero Honda	5	Guj Alkali	5
Rolta India	6	ACC	6
German Rene	7	Balarpur Ltd.	7
Gestentner In	8	Mahavir Spg	8
Rhone Pulen	9	Vam Organic	9
E. Merck	10	Govind Rubber	10

Table 4

Group I (Highest Performing Companies)		Group II (Lowest Performing Companies)	
Name of the Co.	Rank	Name of the Co.	Rank
TVS Suzuki	1	Guj Alkali	1
Jagson Pharma	2	20th Cont.	2
Dig. Equipment	3	Ind. Seamless	3
German Rene	4	Mahavir Spg	4
Rolta India	5	Malwa Cotton	5
Abbort Labs	6	Videocon Appliance	6
Him Fut. Com.	7	ACC	7
Hero Honda	8	Sesa Goa Ltd.	8
Rhone Poulen	9	Kalyani Steel	9
Hind Lever	10	Dharampur Sugar	10

Table 5

Group I (Highest Performing Companies)		Group II (Lowest Performing Companies)	
Name of the Co.	Rank	Name of the Co.	Rank
Hin. Lever	1	Ind. Seamless	1
Abbort Labs	2	Guj. Alkali	2
Jagson Pharma	3	Garden Silk	3
German Rene	4	Mahavir Spg	4
Dig. Equip.	5	Kalyani Steel	5
Rhone Poulen	6	Vam Organic	6
Pfizer	7	Videocon App.	7
Rolta India	8	Dharampur Sugar	8
Him. Fut. Com.	9	Bomb. Dyeing	9
Punjab Tractor	10	Sesa Goa Ltd.	10

Table 4

Group I (Highest Performing Companies)		Group II (Lowest Performing Companies)	
Name of the Co.	Rank	Name of the Co.	Rank
TVS Suzuki	1	Guj Alkali	1
Jagson Pharma	2	20th Cont.	2
Dig Equipment	3	Ind. Seamless	3
German Rene	4	Mahavir Spg	4
Rolta India	5	Malwa Cotton	5
Abbort Labs	6	Videocon Appliance	6
Him Fut. Com.	7	ACC	7
Hero Honda	8	Sesa Goa Ltd.	8
Rhone Poulen	9	Kalyani Steel	9
Hind Lever	10	Dharampur Sugar	10

Table 5

Group I (Highest Performing Companies)		Group II (Lowest Performing Companies)	
Name of the Co.	Rank	Name of the Co.	Rank
Hin. Lever	1	Ind. Seamless	1
Abbort Labs	2	Guj. Alkali	2
Jagson Pharma	3	Garden Silk	3
German Rene	4	Mahavir Spg	4
Dig. Equip.	5	Kalyani Steel	5
Rhone Poulen	6	Vam Organic	6
Pfizer	7	Videocon App.	7
Rolta India	8	Dharampur Sugar	8
Him. Fut. Com.	9	Bomb. Dyeing	9
Punjab Tractor	10	Sesa Goa Ltd.	10

Table 6

Group I (Highest Performing Companies)		Group II (Lowest Performing Companies)	
Name of the Co.	**Rank**	**Name of the Co.**	**Rank**
Jagson Pharma	1	Ind. Seamless	1
Titan India	2	Orient Hotel	2
Abbort Labs	3	ACC	3
Rhone Poulen	4	Varun Shipping	4
SKF Bearing	5	Kalyani Steel	5
German Rene	6	Guj. Alkali	6
Hind. Lever	7	Malwa Cotton	7
Dig. Equipment	8	Garden Silk	8
Rolta India	9	Vardhman Spg	9
Him. Fut. Com.	10	Mahavir Spg.	10

Table 7

Group I (Highest Performing Companies)		Group II (Lowest Performing Companies)	
Name of the Co.	**Rank**	**Name of the Co.**	**Rank**
Jagson Pharma	1	Ind. Seamless	1
TVS Suzuki	2	Guj. Alkali	2
German Rene	3	ACC	3
Rassi Cement	4	Sesa Goa Ltd.	4
Him. Fut. Com.	5	Govind Rubber	5
Dig. Equipment	6	Kalyani Rubber	6
Rolta India	7	Malwa Cotton	7
Abbort Labs	8	Mahavir Spg	8
Rhone Poulen	9	Garden Silk	9
Mah. and Mah.	10	Dharampur Sugar	10

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Capital Expenditure Financing – From Corporate Finance to Project Finance

Vikas Srivastva* and **Ashish Kumar****

The financial managers are required to create value for the shareholders through three basic financing decisions – investment, financing and dividend. The firms traditionally invest the resources in two investments – short term and long-term. Long-term investments are considered to be very important as these play a major role in deciding the future of the company. Based on the irrelevance proposition of Modigliani and Miller approach which was based on the assumption that financing mix does not affect the value of the firm, the firms debate about what should be the method of financing their capital expenditure requirements which can create value for the firm. The managers have realized that financing structures do affect the firm's value and thereby the structuring of financing mix should have an impact on the future growth potential of the firms. The rise of project finance as a tool for financing capital expenditures clearly highlights the association of financing and value creation for the firm. This paper attempts to study project financing as an alternative method of financing capital expenditure and why should firms use project finance instead of traditional or conventional financing methods so that the firm's value can be enhanced.

Key Words – Capital Expenditure, Project Financing, Non-Resource Debt, Leverage, Agency Conflict, Underinvestment, Financial Distress

Introduction

The firms are presently in a stage of dilemma, their prime objective is to win the battle of struggle, not to earn profits, but to survive in the present dynamic environment by achieving sustained growth and their success or failure is of paramount interest to all the stakeholders. To achieve the desired growth, the firms have to achieve the financial objective – the objective of maximizing the firms' value. To achieve the desired results in the firm, the financial managers, appointed by the shareholders to take decisions and manage the operations to the firm to create desired value, are required to take various financing decisions like investment, financing and dividend payment. These decisions have a direct impact on the firms' value. To enhance the value of the firm the managers seek growth in the firms' operations through the impact of their decisions. The growth of any firm is directly related to the resource allocation of the firm (Chandra, 2002). The firms allocate their resources in anticipation of future benefits and to achieve the growth. The most important aspect to the direction and position in which the firm will stand in the coming future depends on the implementation of the strategies formulated at present for future. The most important factor in shaping management and corporate valuations is strategy implementation (Kaplan and Norton, 2001). To achieve the objective of maximizing firms' value, the resource allocation should result in "good" investments rather than "bad" investments. One of the most important aspects in implementation of the strategy to maximize the firms' value through resources allocation is the raising of funds for implementing the strategy. Over the years firms have been using different methods of raising funds for financing their investment needs. Historically, it has been debated whether irrelevance proposition of Modigliani and Miller (1958) holds true in the real world. The firms are still questioning the underlying assumptions of the irrelevance proposition. They have realized that the financing and investing decisions are not separable and have an effect on each other. The biggest and most visible investments are the large scale investments or capital expenditure made by the companies. These investments have a huge impact on all the players involved and at times these are also termed as bet-

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the-company type of investments (Esty, 2003). The firms have historically used project finance for industrial and infrastructural projects like toll roads, power plants, mines, pipelines, oil fields, telecommunications, etc. The application of project finance in the corporate expenditures is not new but has not been used as it should be.

Strategic Route to Growth: The Capital Expenditure

A corporation's growth and even its survival depend upon a continuous allocation of resources in new capital investment ideas. Corporate prosperity largely depends on the ability to identify and generate profitable capital projects (Adelson, 1970). These capital projects utilize the present resources in order to provide benefits over a long time horizon and, thus, provide the shareholders a return over the opportunity cost of utilizing the funds. To achieve the objective of shareholder's wealth maximization, a company invests its present resources in two types of investments – short term and long term. The short term investments are targeted to capture the opportunities arising in the ongoing year. On the other side, the long term opportunities are captured by making long term investments. The long term investments are commonly known as capital expenditures. The main objective of these capital expenditures is to invest the current resources in anticipated future benefits. The capital expenditure investments involve a current outlay or series of outlays of cash resources in return for anticipated flow of future benefits and, in turn, these investments influence the firm's growth and affect the risk profile of the firm (Quirin, 1977).

The definition of capital expenditure, therefore, is not what is defined by accounting norms. According to accounting, capital expenditure is an expenditure which is shown as an asset in the balance sheet and is to be depreciated over the life of the expenditure. This narrow view of capital expenditure fails to identify the outlays on research and development, reconditioning of plant and machinery, etc. even though these are targeted to encash future opportunities and have long term impact on the firms. These expenditures have a bearing on the competitive position of the company as the impact of these decisions is highly visible through the profitability of the firm. The main reason is that these expenditures are focused on the acquisition of fixed assets which enables a firm to generate the output which will be ultimately sold in the market to generate revenues. These decisions because of their long term impact are classified as "strategic" investment decisions as against "tactical" decisions which involve a relatively small amount of funds. So these capital expenditures may result in major departure from what the company has been doing in the past. Acceptance of a strategic investment will involve a significant change in the company's expected profits and in the risks to which these profits will be subjected. These changes are likely to lead shareholders and creditors to revise their evaluation of the company. The same has been illustrated by McConnell and Muscarella (1985) in a study indicating that an increase in capital expenditure intentions, relative to prior expectations, results in increased stock returns around the time of announcement, and vice versa for an unexpected decrease. These expenditure decisions determine the future destiny of the firm. The capital expenditure because of the amount involved can become defining amount for most companies. These expenditures are considered as an act of "commitment" that can establish (or destroy) a trajectory of sustainable competitive advantage (Ghemawat, 1991). These are also classified as bet-the-company type of investments, e.g. when Airbus decided to develop A380 with an anticipated cost of $13 billion, the company had sales of only $17 billion and a failure could have resulted in bankruptcy (Esty & Kane, 2000). The betting the company proposition is because of the irreversible nature of the capital investments, and if reversed at a huge cost e.g. Enron's bankruptcy resulted in the acquisition of more than $200 million Enron's stake in Dabhol power company by GE and Bechtel for only $22 million (Mehta, 2001). The large capital expenditures not only have an effect on the decision makers in the companies or companies executing these but also the communities and nations where they are situated or established. They can improve the social and economical conditions of the region by providing an upswing in the development rate unexpected before or can create disasters for the nations, e.g. Enron's Dabhol power plant's failure

unmanageable power crisis in State and a negative impact on the of India with respect to political due to instability in government making process (Raghav & Mccaffery, 2004); on the other hand, the success of $1.4 billion project in Mozambique has provided much development in one of the poorest of the world e.g. Mozal's share of GDP Product) was 3.2% in 2003, Mozal to the country's economic growth of Mozambique export earnings increased from to around US $1bn, Mozal has doubled Mozambique's exports, providing for in excess of million in foreign exchange earnings, Net impact on external trade of $400m at steady Direct impact of 49% on manufacturing gross output, Net positive impact on balance of payments around $100m at steady state, Direct employees, 1600 contractors and indirect estimated at 10,000 jobs (Mozal overview, and, to add on, the project was envisioned at when Mozambique was struggling for development after 17 years of civil war and had a of $1.7 billion (Esty & Qureshi, 1999).

feature of the capital expenditure decisions that these have effect on a long time span and affect the company's future financing structure. These expenditures are also and if reversed, the firm incurs a huge financial loss. As the companies do not have capital resources, so in case of an unsuccessful venture, loss will not be limited to the but also the opportunities lost because of not undertaking other profitable ventures.

Traditional On-Balance Sheet Financing

companies have been using various methods for funding their capital expenditure requirements like Corporate Bonds, Term Loans, Asset-based Security Funding, Equipment Leasing, Venture Capital and most common of all Initial Public Offerings or subsequent Offerings of equity capital. These all forms are conventional ways in which the firms are either raising new equity capital or funds from the lenders.

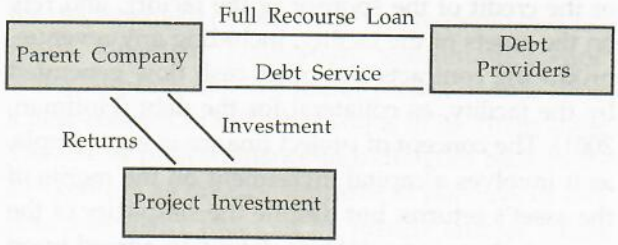

Fig 1: Traditional Financing Structure

As shown in **Fig 1**, the lenders are providing the funds to the parent company (the investing firm) and then the parent company is investing the funds in the project assets. In this form of financing, commonly known as corporate financing or the balance sheet financing, although the financing is done for the project, but the lender looks at the cash flows and assets of the whole company in order to service the debt and provide security (Pandey, 2005, 467).

In case of default, the lenders have full claim on the total assets of the parent company including the new project assets for which the new debt is being issued. In this way the lenders are having full recourse on the parent company for the payment of the debt service. This kind of lending largely depends on the parent company and not on the project in which the amount will be invested and the financial credibility and standing of the parent company plays a major role in deciding the amount disbursed and the conditions and characteristics of the loan. The parent company is exposed to risk of the full amount required for the investment. In other words, the existing shareholders are exposed to a new additional risk by this act and the claim of the shareholders is further reduced due to the additional financial risk. This kind of arrangement can result in risk contamination and the parent company may be termed as a potential defaulter.

Project Financing

Project Financing is generally used to refer to a non-resource or limited recourse financing structure in which debt, equity, and credit enhancement are combined for construction and operation, or the refinancing, of a particular facility in a capital-intensive industry, in which lenders base credit appraisals on the projected revenues from the operation of the facility, rather than the general assets

or the credit of the sponsor of the facility, and rely on the assets of the facility, including any revenue-producing contracts and other cash flow generated by the facility, as collateral for the debt (Hoffman, 2001). The concept of project finance is very simple, as it involves a capital investment on the merits of the asset's returns, but despite the simplicity of the concept, there is no definite definition agreed upon by the financial community. According to Finnerty (1996), "....the raising of funds to finance an economically separable capital investment project in which the providers of the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return on their equity invested in the project." According to Nevitt & Fabozzi (2000), "A financing of a particular economic unit in which a lender is satisfied to look initially to the cash flow and earnings of that economic unit as the source of funds from which a loan will be repaid and to the assets of the economic unit as collateral for the loan." According to Pacelle et al (2001), "It is a term that typically refers to money lent to build power plants or oil refineries." According to Esty & Sesia (2005), "It involves the creation of a legally independent project company financed with equity and non-recourse debt for the purpose of financing a single purpose capital asset, usually with a limited life." According to Standard & Poor's Risk Solutions (2002), "A project company is a group of agreements and contracts between lenders, project sponsors, and other interested parties that creates a form of business organization that will issue a finite amount of debt on inception; will operate in a focused line of business; and will ask that lenders look only to a specific asset to generate cash flow as the sole source of principal and interest payments and collateral."

All these definitions of project finance highlight some basic characteristics of the project financing method (as shown in **Fig 2**). These are

a) Creation of Separate Entity – Project Financing involves a creation of a separate entity popularly known as Special Purpose Entity or Special Purpose Vehicle (SPE/SPV). The SPV has a defined objective and definite life.

b) Equity Holding Pattern – The project financing structure or SPV is a highly concentrated ownership structure. It normally an outcome of partnership or joint venture between 3 or 4 equity sponsors. This format is similar to the venture-backed companies with the only exception that equity sponsors are not the managers.

c) Non-recourse Debt – The debt component provided by lenders is of non-recourse nature and

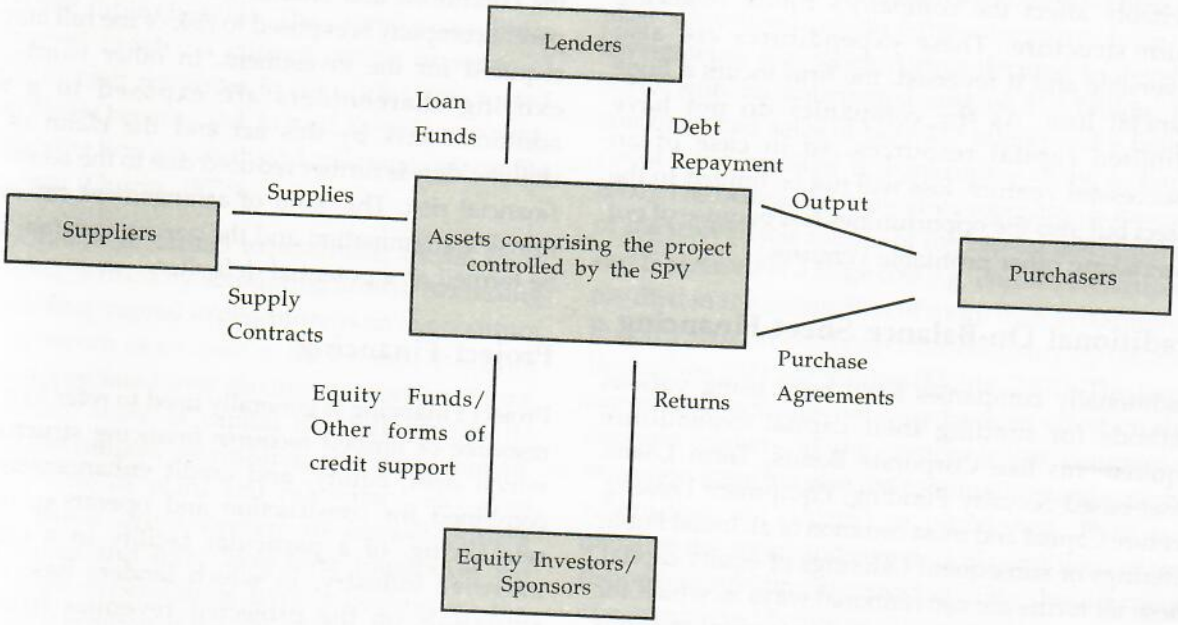

Fig 2: Basic Elements of Project Finance Structure

the lenders have no claim on the equity sponsors for the repayment of debt service but fully rely on the project cash flows for the debt service.

Leverage – The project financing deals are highly leveraged deals typically involving a leverage of 70% and at times going up to 80% or more.

Contractual Structure – The project financing because of definite life and objective is a highly contractual entity and the operations are highly structured by entering into various contracts.

The project finance is growing in terms of importance but in absence of clear cut demarcation between project finance and other financing structures, like Secured debt, Subsidiary debt, Asset-based securities, Real estate investment trusts, Joint ventures, Vendor-financed debt, Lease, Leveraged or management buyouts, Commercial real estate development, Project holding companies, creates further confusion as to what all can be defined as project finance and what not (for a comparison of Traditional financing and Project Financing, see **Exhibit 1**).

Project financing is a well established financing technique. Chen et al (1989) documented more than $20 billion worth of project financings between 1987 and 1989 and identified 168 projects financed on this format, including 102 projects for power production. Project financing can be used to finance the infrastructure requirement of the countries (Financing the Future, 1993; Forrester et al, 1994, Chrisney, 1995). Project financing has long been used to fund large-scale natural resource projects. The use of project finance is primarily focused on the development of infrastructural requirements like roads, electricity generation, telecommunication, water, airports, etc. The use of project finance is not a new concept in India but still is in its infant stage. The use of project finance in India goes back to the 19th century as the development of railways in 1880 was principally financed by private entities whose investments took the form of project finance (Benouaich, 2000). In the recent years, the Indian government has realized that to develop the infrastructure in the country, they have to look towards the private sector through the PPP. In the recent past the use of project finance has increased in India and it is not only used for infrastructural financing as for Dabhol Power Company (now Ratnagiri Gas and Power Private Limited), Noida Toll Bridge Company, but is being used by many corporate for financing their requirements as Reliance Petroinvestments, the SPV formed by Reliance Capital and Reliance Industries to bid for IPCL, Global Steel Holdings (GSHL), an SPV controlled by Pramod and Vinod Mittal of Ispat group, has acquired the Turkish Electric Arc Furnace (EAF) steelmaker, etc.

Recent Trends

In the early 1990s, privatization, deregulation, and globalization have spurred the use of project finance in both developed and developing countries (Esty, 2005). During the recent years, project finance which was primarily used for mining and natural resource projects, has been used for new types of projects also. In developing countries, because of limited

Exhibit 1 Comparison of Traditional Financing and Project Financing

Let us take a hypothetical example that a company is looking to invest Rs 100 billion in a capital expenditure.

Traditional Financing: The company raises 40% through corporate loan from various financial institutions and remaining 60% from retained earnings and internal accruals. The capital mix will be as follows:

Equity: Rs. 60 billion, and Debt: Rs. 40 billion.

In this scenario, the company is investing Rs. 60 billion of its own funds which are the funds available to equity shareholders.

The company is exposed to a risk of Rs. 100 billion as the lenders have full recourse on the parent company for the loan amount.

Project Financing: In project finance, the company will form a joint venture or partnership company (SPV) with other like minded sponsors to execute the project (see the structure given below). Let the equity interest in three sponsors is as follows

Parent Company: 40%, Company A: 35%, and Company B: 25%. As the project finance structures are highly leveraged, so let the debt component be 70%.

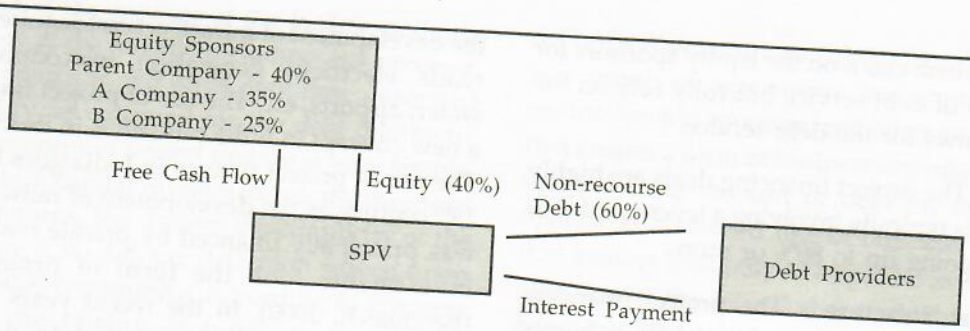

Figure: Project Finance Structure

The parent company will be required to invest its own funds equivalent to its interest in the total equity component – 40% of Rs. 30 billion i.e., Rs. 12 billion.

The parent company is only exposed to its equity investment as the debt will be non-resource. So the exposure will only be Rs. 12 billion.

Comparison

Amount Invested: The amount required by the parent company in Project Finance is reduced from Rs. 60 billion to Rs. 12 billion or 80% less as compared with the amount required in Traditional Finance.

Risk Exposure: The Company is exposed to Rs. 100 billion in case of Traditional Finance, while in case of Project Finance, the exposure is only Rs. 12 billion; a reduction of 88%.

public funds, the governments decided to privatize the state-owned companies or infrastructure development. According to World Bank (2004) study on Public Policy for Private Sector, Private Infrastructure, from 1990 to 2003, investment in infrastructure projects with private participation in developing countries was $890 billion. According to IFC publications on IFC supported projects (1999), many developing countries have benefited from the application of project finance as in Argentina, in 1993, the project finance technique helped to raise $329 million to finance the 30-year concession period rehabilitation and expansion project of Buenos Aires' water and sewerage services, expected to provide better quality and service of water for approx. 6 million people; in Hungary, in 1994, the technique was used to finance 15-year concession $185 million joint venture project to develop, install and operate a nationwide digital cellular network; in China, in 1997, this technique was used to finance a $57 million greenfield project to install modern fiberboard plants in interior China to support China's fast-growing construction industry. The void created, due to exit by governments, in the infrastructure development was filled by private sector. The concurrent deregulation and globalization also forced the companies to look for new ways to raise funds for their capital investments and also new ways to conduct business. The scarcity of natural resources also forced the companies to look for untapped areas for development to overcome this scarcity. In this scenario, project finance industry has witnessed a growth as well as a rough drive since the beginning of the new millennium. It reached to all time high in 2001, but declined in 2002 as a result of global recession. Projects exposed to market, currency, and political risks were hit badly and many of them defaulted. The most significant being the defunct $3 billion Dabhol Power Plant, which defaulted the payment in 2001. The impact of these three risks has left many investors with non-performing assets and has encouraged many participants – sponsors, bankers, and investors – to exit the industry. But even after these drawbacks the industry looks very promising. From only a project-financed investment of less than $10 billion per year in late 1980s, in 2004, the global project finance market was the largest in the history with approximately $234 billion.

Exhibit 2 Project Finance Investments

Year	Total (US$ billions)	% Change	Bank Loans (%)	Bonds (%)
2004	234.06	36.00	80	20
2003	172.10	27.14	68	32
2002	135.36	-37.76	82	18
2001	217.47	1.91	81	19
2000	213.40	37.08	84	16
1999	155.68	24.67	78	22
1998	124.87	-9.87	85	15
1997	138.54	45.65	90	10
1996	95.12	48.90	90	10
1995	63.88	54.64	86	14
1994	41.31	-	77	23

Source: Esty & Sesia Jr., 2005

The amount invested represented a 36% increase over 2003 and a 73% increase over 2002, when the investments fell almost 40% due to the economic slowdown. From 1994 to 2004, total project-financed investment grew every year except 1998 (following the Asian financial crisis) and 2002 (following the global recession). Despite these declines, the 5- and 10-year compound annual growth rates (CAGRs) for total project-financed investment were 8% and 19%, respectively (refer **Exhibit 2**).

The application of project finance has seen a shift in geographical location also. In 2000, the major lending was done in North America and Western Europe with 53% of total, but declined to 36% by 2004. On the other side, Asia, Middle East and Australia/ New Zealand contributing only 17% in 2000 rose to 46% in 2004. The 4-year CAGR was highest for Asia and Eastern Europe with 34%, closely followed by Middle East with 31%. The increase in Asia was considered as very positive as the region was recovering from the Asian financial crisis of 1998 (refer **Exhibit 3**).

Exhibit 3 Project Finance by Region (US$ billions)

Region	2000	2001	2002	2003	2004
Western Europe	33.61	37.35	23.36	29.40	25.69
North America	36.10	31.88	10.32	5.55	16.37
Americas	16.70	15.60	6.22	7.24	12.59
Asia	7.79	7.17	10.61	12.44	24.85
Australia/New Zealand	4.30	4.17	6.06	3.81	10.73
Middle East	6.25	8.28	2.75	6.50	18.56
Africa	1.56	2.97	1.54	2.72	2.69
Eastern Europe	4.59	1.06	1.32	1.90	4.96
Total	**110.90**	**108.48**	**62.18**	**69.56**	**116.44**

Source: Esty & Sesia Jr., 2005

With respect to the industrial sector usage, the project finance has largely been concentrated in power, telecom, and infrastructure projects with approximately 71% of the total investment in 2004 going to these sectors. The infrastructure sector has seen a growth over the period of 2000-2004 with increasing from 12% in 2000 to 17% in 2004, with a CAGR of 15%. The power and telecom sectors have seen a decline in the same period with a CAGR of -6% and -32% respectively (refer **Exhibit 4**). The decrease can be an outcome of the high default rate in the power projects, while the expected boom which never materialized left the telecom sector companies with overcapacity which forced more than 50 companies to go bankrupt.

On the other hand, there has been an unprecedented increase in the usage in oil & gas, industrial and mining sectors with a CAGR range of 25-54%. The increase can be attributed to the change in government policies worldwide and the distress in power and telecom sectors, but still in terms of amount, these sectors are relatively small but growing.

The project finance is largely used across the globe in the power sector with 37% in 2000-2004 time-periods, with Americas accounting for 54% of the total. In telecom sector, Americas and Asia Pacific has only 30% share and Europe, Middle East and Africa accounting for 70% (for details refer **Exhibit 5**).

Exhibit 4 Project Finance Sector-wise (US$ billions)

Sector	2000	2001	2002	2003	2004
Power	44.59	47.26	20.20	24.07	35.26
Telecom	34.70	23.96	7.29	4.99	7.34
Infrastructure	13.36	11.28	14.20	15.18	23.51
Oil& Gas	9.27	8.83	6.44	9.03	22.52
Petrochemicals	3.34	3.90	5.71	5.88	8.80
Leisure & Property	1.64	6.53	4.76	4.44	7.00
Industrial	3.36	3.65	0.82	3.18	5.23
Mining	0.63	2.32	1.00	1.11	3.57
Others	0.00	0.76	1.75	1.69	3.21
Total	**110.90**	**108.48**	**62.18**	**69.56**	**116.44**

Source: Esty & Sesia Jr., 2005

Exhibit 5 Project Finance Loans by Sector & Region (US$ billions)

Sector	Europe, Middle East and Africa	Americas	Asia Pacific
Power	52.70	92.31	26.37
Telecom	55.08	11.72	11.48
Infrastructure	44.55	9.79	23.18
Oil & Gas	24.89	21.63	9.56
Petrochemicals	10.29	5.67	11.67
Leisure & Property	16.35	5.56	2.46
Industrial	6.56	5.98	3.70
Mining	1.39	5.11	2.12
Water & Sewage	2.87	0.39	0.88
Others	1.78	0.32	1.19
Total	**217.04**	**158.56**	**91.93**

Source: Esty & Sesia Jr., 2005

Exhibit 6a Nation Analysis of Project Finance Bank Loans for Asia-Pacific Region in 2003-2006 (US$ billions)

Country	Proceeds in 2006*	Proceeds in 2005	Proceeds in 2004
Australia	2.076	10.496	3.614
South Korea	0.984	6.341	2.732
Taiwan	0.216	4.969	0.076
Japan	0.524	3.720	1.629
China	-	2.787	3.755
Thailand	0.105	2.009	1.170
Malaysia	-	1.642	0.066
India	1.075	1.187	0.122
Indonesia	0.310	1.185	2.199
Singapore	0.318	0.400	0.096
Macau	-	0.397	-
Pakistan	-	0.350	0.024
New Caledonia	-	0.347	-
New Zealand	-	0.232	0.194
Laos	1.023	0.140	-
Philippines	-	0.048	0.201
Papua New Guinea	-	0.025	-
Total	**6.695****	**36.275**	**16.275**

(Source: Thomson Financial Project Finance Review)
*Jan 1, 2006 – June 30, 2006 period
**Includes 0.064 billion in Bangladesh

Project Finance in Asia and India

The project finance loans in the Asia Pacific region increased to $36.3 billion in 2004 from $16.3 billion in 2003, and up to June 30, 2005, it is at $6.7 billion (refer **Exhibit 6a**).

The Indian share in the total project finance loans in the region is only 3.3% with $1.2 billion in 2004 rising from 0.7% in 2003 at $122 million, but showed a remarkable increase in 2005 with 16.1% share and second position in the region. The leading players in the region till 2004 are Australia with 28.9% up from 22.2%; South Korea 17.5% from 16.8%; Taiwan 13.7% from 0.5%; and Japan 10.3% from 10%; on the other hand, China showed a decline from 23.1% to 7.7%. In 2005, Laos moved to third position from no where in 2003 with 15.3% share. With respect to industry analysis, transportation, power, oil & gas and petrochemicals had the majority share with 80.1% at $29.1 billion loan share (refer **Exhibit 6b**).

The same trend is followed in 2005 also, but the activities in petrochemicals are not available. In terms of amount underwritten, Korean Development Bank was the lead

arranger in 2004 while in terms of number of issues, Mitsubishi Tokyo Finance was the leader and no Indian bank was among the top ten lead arrangers, but in 2005 the scenario is different, ANZ is the lead arranger in the region, but India banks, SBI and PNB, are in the top 10 lead arrangers at second and seventh position (refer **Exhibit 6c & 6d**). This improvement shows a positive trend in India with respect to usage of project finance.

Advantages of Project Finance

But the real question is - Why should a company use project finance to fund the capital expenditure

Exhibit 6b Industry Analysis of Project Finance Bank Loans for Asia-Pacific Region in 2004-2006 (US$ billions)

Borrower Industry	Proceeds in 2006*	Proceeds in 2005	Proceeds in 2004
Transportation	1.918	9.880	3.976
Power	3.309	9.602	4.432
Oil & Gas	0.668	5.237	1.726
Petrochemicals	-	4.337	2.727
Telecommunications	0.063	2.265	1.320
Industry	0.172	2.014	0.518
Leisure & Property	0.480	1.193	0.317
Mining	0.086	0.952	0.598
Waste & Recycling	-	0.653	0.122
Water & Sewage	-	0.145	0.174
Total	**6.695**	**36.275**	**16.275**

Source: Thomson Financial Project Finance Review

*Jan 1, 2005 – June 30, 2005 period

requirements? How is project finance superior to traditional finance? As the long-term demand for capital and infrastructure is at a critical

juncture and the present magnitude and growth clearly indicates that the future prospects of project finance are very strong and positive, so the financial managers, bankers, government officials should understand the advantages of project finance and how to create value by using the same, also how a project finance-structured investment has a higher probability of providing expected and targeted results in financial as well as operational scenarios. The motivations to use project finance can be classified as follows:

Exhibit 6c Asia-Pacific Region Leading Lead or Mandated Arrangers in 2005

2005 Rank	Name	2004 Rank	No. of Issues	Amount Underwritten*	% share
1	Korean Development Bank	1	6	3.325	9.2
2	Chiao Tung Bank	-	7	2.870	7.9
3	Kookmin Bank	12	6	2.320	6.4
4	SMBC	2	12	2.012	5.6
5	CBA	19	13	1.512	4.2
6	Westpac	5	12	1.294	3.6
7	Bank of Tokyo Mitsubishi	11	17	1.219	3.4
8	Mizuho Financial	10	11	1.160	3.2
9	Barclays Capital	-	6	1.094	3.0
10	Citigroup	9	8	1.082	3.0
	Other		98	18.385	50.5
	Total Market		**119**	**36.275**	**100.0**

Source: Thomson Financial Project Finance Review

*US$ billions

Exhibit 6d Asia-Pacific Leading Lead or Mandated Arrangers in 2005 (Jan 1 - Jun 30)

2005 Rank*	Name	2004 Rank*	No. of Issues	Amount Underwritten**	% share
1	ANZ	20	9	719.7	10.8
2	State Bank of India	6	5	606.3	9.1
3	Calyon	22	7	487.1	7.3
4	CBA	3	6	370.8	5.5
5	BNP Paribas	5	2	365.6	5.5
6	NAB	19	3	215.7	3.2
7	PNB	-	1	193.1	2.9
8	Westpac	11	4	190.0	2.8
9	Kookmin	10	2	187.5	2.8
10	Bank of Tokyo Mitsubishi	16	4	187.1	2.8
	Other		NA	3172.0	47.3
	Total Market			**6694.9**	**100.0**

Source: Thomson Financial Project Finance Review
*Rank for Jan-Jun period
**US$ millions

2. Risk Sharing Motivation

A capital expenditure passes through the following three stages – development, construction and operational. At each stage because of uncertainties in the overall economic environment, the amount of risk is very high. The parties which can provide risk may vary from government (by full or creeping expropriation) to social activist groups (by forcing the project to forego some advantageous conditions because of societal issues), or customers (by not providing enough demand) to suppliers (by creating supply related problems), etc. As the exposure involved in a capital expenditure is very huge and any risky proposing might lead to financial distress, the companies following traditional financing, whereby the parent company is exposed to the entire risk, may decide not to give a green signal to the project as the increased incremental distress cost (because of adding the project to the portfolio of existing projects). The use of project financing can help the companies to invest in risky projects which the company may have to forego because of the increased incremental distress cost. This incremental distress cost either direct or collateral, if sufficiently large, can exceed the project's Net Present Value (NPV), which makes the positive NPV turn into negative NPV investment. According to Bruner et al (1995), project financing is a way of distributing risks and returns more efficiently than under conventional financial strategies; those who have specialized ability to bear specific kinds of project risks are paid to do so. The application of separate entity helps in reducing the probability of risk contamination due to which an unsuccessful investment creates negative value for the otherwise financial healthy firm. This type of structural arrangement also helps in reducing ultimate distress cost in case of actual default. There are certain indirect impacts on the investments which cannot be controlled like the changes in unrelated commodities but these have an effect on the projects as these factors influence the overall economy of which project is a part as the impact on the decision making of non-oil subsidiaries due to the shocking change in the oil prices (Lamont, 1997). The risk management motivation is not dealt properly in the existing financing literature. The risk management motivation is considered to be consistent with the emerging issues of the magnitude of investment distortions (Parrion et al, 2005). Over the years, the concepts of market imperfections incorporated in capital

structure and risk management theories are ignored in capital budget analysis (Stulz, 1999). These concepts are addressed in case of project finance as it differs from traditional finance management strategies because it involves a change in organizational form rather than the use of financial instruments or derivatives (Esty, 2003). The introduction of a risky project in the portfolio of a healthy firm can have a negative impact on the overall financial and trading position of the firm. The addition of risky project can lead to volatility in presently stable cash flows generated by the firm. If the volatility is significant enough, it can hinder the progress of the on-going investments (Froot et al, 1993; Lamont, 1997; Minton & Schrand, 1999). The increased risk of default due to this introduction can also encourage the existing suppliers and customers to review their business transactions (Titman, 1984). Due to these kinds of negative impacts, the managers of any company, having an objective of value-maximizing, can rationally choose to forego the investment if corporate debt is the only option. But in project finance these risks are hedgeable with financial and other contracts. In project finance structures, specific contracts can be formulated in which the risk can be shared by other parties which specialize in the specific domain, e.g. construction contractor can become a partner by sharing risk by putting equity interest, suppliers can become risk sharing partners by signing contract for being preferred suppliers. Even by signing some specific contracts, the risk can be mitigated e.g. Turnkey contract can transfer the entire construction and setting up of the plant to the turnkey contractor; in case of a power plant by signing a PPA (power purchase agreement), the Independent producer is assured of the revenues, etc. This contractual agreement also provides the project sponsors a high gearing ratio as otherwise possible due to reduced risk on the project and risk sharing among various parties. By the risk sharing among many partners as other sponsors or debt lenders, the incremental distress costs are reduced because there is a positive and convex relationship between distress costs and leverage (Brealey & Myers, 2003).

2. *Reduced Underinvestment Problems*

Warren Buffet, the famous investor, says"...to shoot rare white elephants, you should keep a loaded gun." That means investment opportunities are like those rare white elephants which keep on coming up and the companies have to be ready with their funds (loaded gun) to make optimum use of them. Over the years of financial research, it has been noted that firms with high leverage (Myers, 1977), risk averse managers (Stulz, 1984; Smith & Stulz, 1985), and asymmetric information (Myers & Majluf, 1984) have a greater tendency of underinvestment or in words of Warren Buffet, not having the loaded gun for shooting the rare white elephant. According to the concept of underinvestment, a firm has a tendency of not investing in borderline capital expenditures and the firm has a fear that a negative impact might result in financial distress which can lead to even bankruptcy. The underinvestment only occurs when capital providers have asymmetric information about assets-in-place and investment opportunities (Myers & Majluf, 1984). Project finance reduces asymmetric information by eliminating the need to value assets-in-place (Shah & Thakor, 1987) as project finance separates the current assets and potential investment opportunities. The highly leveraged firms have more trouble in financing attractive investment opportunities because of existing high fixed financial burden. The use of corporate debt as per traditional financing can increase corporate leverage as it will increase the existing financial burden further, resulting in a failure to raise funds at all or at reasonable terms or cost, thereby forcing the investments being non-profitable to the firms and this in turn can lead to firms being vulnerable to underinvestment. But project finance allows the firms to preserve scarce corporate debt capacity and borrow more cheaply than it could otherwise. The use of secured debt can also reduce the leverage-induced underinvestment by allocating returns to new capital providers (Stulz & Johnson, 1985). Project finance also provides the same result through separate incorporation and non-recourse debt (Berkovitch & Kim, 1990; John & John, 1991; Flannery et al, 1993). But the use of project finance is more effective than secured debt as the lenders of secured debt have residual claim on the corporate balance sheet and reduces the corporate debt capacity, while project finance eliminates all resource back to the sponsoring firms. John & John (1991) have developed a model, based on the works of Myers (1977), which indicates

debt gives rise to an thereby forcing the positive NPV projects in the projects would operate to the but to the detriment of such a scenario to overcome underinvestment in case of highly the issue of new equity is the only financing investment opportunities of corporate debt capacity, may be issued at a discount to make due to high financial risk and may be by existing shareholders to avoid the their claims, which again leads to as the projects may become unviable by equity.

Costly Agency Conflicts

which has been assumed to impact on the value-maximization of the firms is the agency issues. The finance literature has been extensively time and resources in establishing the between conflict of interest among and distortions in investment decisions. such as Mello & Parsons (1992), Leland Parrino & Weisbach (1999), Moyen (2000), & Tsyplakov (2001), use the approach of a model on the database of public firms the magnitude of the impact of debtholder conflicts on investment The agency relationship exists when one (the principal) hires another party (the agency) some services and in doing so, delegates making authority to the agent. In any firm, are principal and CEO is the agent; if is principal then managers are agents. Parrino argue that the compensation mode also an impact on the distortions in investment According to the study, a manager who equity-based compensation is likely to favour that lower firm risk even if they have negative and ignore the high-risk projects that have a NPV. This behavior occurs even though low (risky) projects transfer wealth to (from) from (to) stockholders. Ideally, the to increase risk should complement, rather substitute for, the incentive to increase share leading to value maximization and if risk-taking incentives are high enough relative to the incentives to increase share price, then managers' option holding may provide inducements to invest in risk-increasing, negative NPV projects (Rogers, 2005). However, if the manager also holds stock, this incentive will be partially offset by the lack of risk-taking incentives provided by stock holdings (Guay, 1999).

The investments generating FCF can lead to inefficient investment and value destruction on a much larger scale (Jensen, 1986; Harford, 1999; Blanchard et al, 1994) because of sub-optimal effort and excessive perquisite consumption (Jenson & Meckling, 1976). The costly agency conflicts arise when managers controlling the investment decisions and cash flows have different "Divergent Objectives" as compared to capital providers or shareholders. As the traditional sources of discipline are not so effective in project companies, the issue of separation of ownership and control is of paramount importance in project settings. The mechanism used to discipline managers of start-up firms as opportunity for a liquidating event as IPO or an acquisition (Baker & Montgomery, 1994) and the threat of staged financing with contingent ownership (Gompers, 1995; Kaplan & Stromberg, 2002) are less effective in the context of project companies. Liquidating events are not possible because most projects have limited life due to which asset values decline over time to zero. Staging commitment is not possible because the projects have no worth before completion and the investments are irreversible in nature because of which till completion equity sponsors have no exit options. The project finance structures overcome these issues as the equity sponsors can design appropriate incentive plans to limit divergent preferences between agents and principal. The sponsors can structure project companies to limit managerial discretion over free cash flow (FCF). The existence of FCF also reduces the problem of agency conflict because the project, having a limited life and specific objective and limited growth options, does not require the reinvestment of FCF and thus removes the problem of sub-optimal investment leading to agency conflict. Separate legal incorporation also helps the sponsors to design the project-specific control systems to monitor the agent's action.

Another potential agency conflict creator is the interaction between the equityholders and

debtholders. The conflict is due to the distribution and re-investment of the cash flows. The lenders prefer project financing because it provides them an option of limiting managerial discretion by structuring the cash waterfall agreement and also by putting certain stringent contractual provisions. The project sponsors agree to these conditions to get favorable terms on the debt. Also due to the non-recourse nature of bank or financial institution credit, the sponsors can take advantage of critical monitoring of managerial actions by lenders by putting a nominated director on the project company board for safeguarding their interests.

Another major source of agency conflict is the opportunistic behaviour by related parties which threatens sponsor's ability to capture project cash flows, thereby reducing expected returns as well as ex ante incentives to invest (Esty, 2003). The parties which can be future agency conflict generators are Suppliers and Buyers. In case of corporate balance sheet financing, these issues are never addressed properly and the result is that the firms at times over commit the funds without considering the potential risks or costly agency conflicts, which can result in value reduction of the investment. The project finance structures overcome these issues by entering into long term contracts with the suppliers and buyers, e.g. the Independent Power Producers enter into Purchase Power Agreement with the state government thereby removing the volatility in the future earnings. Similar agreements can be structured with the suppliers also as the SPV is a separate entity and has a highly contractual kind of arrangements.

4. *Structured Risk Mitigation*

In case of traditional financing, the managers use the concept of raising the project's hurdle rate, based on past experience, by an arbitrate amount to obtain a new hurdle rate, commonly defined as creating the risk adjusted rate of return (RARR). According to them, the increased returns compensate for the firm for bearing substantial risk. This approach can at times convert a potential sound investment into a negative NPV investment, resulting in the firm deciding against investing. The project finance structural approach provides a better platform for overcoming these issues. The most important remaining risk associated with any investment, after risk sharing, is the sovereign or political risk – the risk resulting because of either direct expropriation in the form of asset seizure or creeping expropriation in the form of increased government payments resulting in decreased cash flows to capital providers. The structural approach, in contrast with increasing hurdle rate, uses the concept of paradox of infrastructure investment (Wells & Gleason, 1995) and reduces the risk through careful structuring. The use of debt structuring and using carefully selected lenders can reduce the sovereign risk e.g. by incorporating IFC or any other multilateral agencies (MLA), which lend only to projects rather than corporations, in the lenders can force the governments not to go for expropriation because future lending for the host nation may become a difficult task if any project financed with the funds made available by these MLA, is expropriated. Also presence of high leverage in project finance makes it more costly for the host government to expropriate and thereby reduces the overall risk.

In any capital expenditure decision, to be able to optimize the outcomes, the managers will have to deal with other issues like competitive strategy, business to government relations, marketing and sales strategies, ethical and social responsibilities, etc., and all these issues, individually, can turn a profitable venture into a loss making investment. Using a risk adjusted hurdle rate by adding a risk premium to the cost o capital may not offset the impact of these issues, but the structuring through project finance can address these issues individually and hence provide a better way to optimally take investing, financing and operating decisions.

5. *Reduced Overall Cost of Financing*

One of the advantages of traditional financing is that because of full recourse nature of debt, the debt is available at a less expensive rate to the companies have a proven track record and financial standing in the market. But this advantage is offset in project finance by the high leverage, on an average 70% (refer **Exhibit 7**).

Also as the project finance is dependent on highly contractual arrangements, so at times possible to increase the gearing ratio and obtain favorable terms on the debt agreement also; e.g. in case of toll roads financing, if the toll arrangement is based on annuity,

Exhibit 7 Distribution of Initial Debt-to-Capital Capitalization Ratios

Debt/Total Capital	2000	2001	2002	2003	2004	Total
< 50%	9	19	15	30	13	15
50-59%	9	9	11	8	7	9
60-69%	16	15	11	5	10	12
70-79%	24	24	13	18	22	21
80-89%	22	24	23	27	24	24
> 90%	20	8	28	12	24	19
Total	100	100	100	100	100	100
Mean	73	66	70	58	71	**69**
Median	75	71	80	72	79	**75**

Source: Esty & Sesia Jr., 2005

the lenders are willing to provide as high as 90% of the total cost as non-recourse debt and because of the secured and guaranteed payments even the rate of interest can be lower than the normal project finance deals. These advantages are not available in traditional financings the lenders are not providing the funds to the project but to the company and are at times do not even show concerns related to the usage of funds.

Another advantage of using the project finance and high gearing ratio is the reduced sovereign risk. In case the firm uses traditional or conventional financing, it has a tendency of increasing the hurdle rate and accepts those investments which provide sufficient returns after the application of this RADR –Risk Adjusted Rate of Return. According to Wells and Gleason (1995), this approach increases the project sovereign risk because the government may feel that the sponsors are earning exorbitant profits at the cost of society. The concept that high returns result in high risk is known as "paradox of infrastructure investment." But a high leveraged investment in the project may result in project being unviable, thereby forcing the government to rethink before deciding to expropriate the project. This can be best explained by the problems the Indian government is facing in the revival process of the Dabhol Power Company, which is assumed to be expropriated after Maharashtra State Electricity Board decided not to honor the PPA signed between Maharashtra State Electricity Board and the power company after a political shift in the state (Rangan et al, 2004).

6. *Free Cash Flow Availability*

The project finance structure requires the creation of a separate entity having a finite life die to which there are not much growth options available. This entity has a predefined dividend policy usually structured at the time of financial closure in the form of cash waterfall or cash flow cascade agreement, which helps the lenders to safeguard their interests. The cash flow remaining after covering operating expenses, debt service, any additional investment requirements and providing for all possible reserves as per cash waterfall agreement, known as Free Cash Flow (FCF), is normally distributed among the equity sponsors. The equity sponsors are free to utilize these funds without any managerial assistance. Opposite to this, when a project is traditionally financed, the assets are considered as a part of the existing portfolio of income-generating assets and the FCF from the new project increases the internal cash accruals of the company. This amount can only be utilized after receiving consent of the board of directors, appointed to safeguard the shareholder's interest. The use of project finance eliminates this consent requirement and the investors are free to invest FCF as they choose as the project finance deals are structured off-balance sheet. But this advantage is not very prominent as the intelligent, well-informed and rational investors will know about off-balance sheet transactions while valuing the firm.

Disadvantages of Project Finance

Project finance has many advantages but as no coin

has only one side, so there are certain disadvantages associated with project finance also. These disadvantages force the companies not to go for project finance but follow the traditional finance. The main disadvantages are:

1. *Huge Third-Party Costs*

The project finance structures are very complex structures which results in huge third-party upfront investments or deadweight costs in various legal processes, which are required for designing and preparing project ownership structure, loan documentation, and other contractual requirements. The financial advisors, selected to help structure the financing, normally charge advisory fees on the order of 50 to 100 basis points. These costs are incurred at the project development stage because of which these are not recoverable if the project fails to see the light. Also at times the feasibility studies may be conducted to satisfy the other related parties which can increase the development costs.

2. *Time Consuming Process*

Structuring a project-finance deal, involving many parties, takes considerable long time as compared to structuring a corporate-finance deal or traditional finance deal. In case of traditional finance, the deal is only finalized by the internal team involving only a handful of people, while because of involvement of independent players, each trying to safeguard their interests delay the process of structuring the project-finance deal. This incremental delay in time not only affects the project's viability measures like NPV, IRR, etc, but it may result in a missed opportunity.

3. *High Cost Project Debt*

The non-recourse debt used in project finance costs more than otherwise equivalent corporate debt. The main reasons for higher rate are greater risk and high leverage. The lenders typically demand 150 to 500 basis points over the normal lending rate, varying depending upon industry, project type, location, and maturity. The ability to raise cheaper debt is directly related to strong balance sheet, which results in a higher debt rating from the ratings agencies. In this scenario, the firms prefer traditional financing because it is available at a cheaper rate.

4. *Stringent Covenants*

One of the biggest disadvantages of the project finance is the application of stringent covenants imposed by a number of parties involved to safeguard their interests. The covenants which affect the parties to a great extent are reduced flexibility in managerial decision making and disclosure requirements. The reduced flexibility is an outcome of the extensive set of operating and reporting requirements on borrowers imposed by the lenders. These provisions restrict the sponsor's ability to modify design, admit new partners, disposal of assets, or respond to a large number of contingencies that invariably arose over the project's life; thereby the firms are forced to delayed response to the changing environment.

The disclosure covenant requires the firms to disclose certain proprietary information about the deal to the lenders, which the sponsors may not fell comfortable. The biggest problem being the use of syndicate loan process whereby the loan is provided by a group of banks by forming a consortium and the information has to be made available to all the members through the lead or mandate bank. The sponsors may force the lenders to sign the confidentiality agreements; the potential for leakage will be high as compared to traditional financing due to the number of parties sharing the information is very high.

Conclusions

Project finance is still in its adolescent years, and has seen a growth since 1990s. The use and growth of project finance is considered as a triumph of optimism over experience (Worenklein, 2003). But the growth has been hindered by the recent difficulties in specific sectors and geographical areas and the failure of large projects like Iridium, Dabhol, Eurotunnel, etc. The future looks bright as the global economy has improved and the investors have realized the mistakes of over-committing and advantages of risk sharing. The Modigliani and Miller irrelevance proposition has been debated upon and after extensive research it proves that the proposition, in reality, does not hold valid and the financing and investment are not separable and independent activities. How the companies finance an asset affects the value of the asset which, in turn, decides whether the asset will be financed. The authors are not suggesting that the companies immediately and completely shift from traditional

financing to project financing. The companies should adopt the new financing structures so that the objective of shareholder's wealth maximization can be achieved. The companies should use project finance, if not using previously for specific projects like large scale projects representing the projects which because of the amount invested can have a material impact on the company's earnings, debt ratings, and, at times, survival; Projects in highly volatile areas where the parent company is exposed to high degree of political risk as war, strikes, sabotage, direct or "creeping" expropriation or currency inconvertibility or exposed to high degree of legal risk because the country in which the project is proposed does not have a sound legal system in place whereby the company may not have the complete certainty of having a legal action undertaken is case of a default situation; and Joint ventures with unknown partners where the parent company is planning the joint ventures with partners having weaker credit capabilities but otherwise sound technical expertise, to maximize the advantages of project finance because of the risks and exposure involved in these projects.

As the world is heading towards a global integrated market and the failure of governments as well as the demand for private capital in infrastructure assets is increasing, project finance will continue to play an important role in both developed and developing markets.

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Testing the Validity of EMH: An Empirical Study of Some Penny Stocks

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Efficient market hypothesis is concerned with the speed with which market reacts based on the information. Numerous studies have so far been conducted to examine the efficient market hypothesis across the world but mainly concentrating on the large cap stocks and have generated inconsistent conclusions regarding level of efficiency. The present study on penny stocks has been explored to revisit the EMH. The study is based on daily price observation on 30 penny stocks for a period of one year ending March 31st 2006. The study incorporates the empirical results using both parametric and non-parametric statistical tests. The results of study suggest that penny stocks prices do not display any apparent pattern which helps to predict stock prices to realize abnormal return over and above the return generated by the market indices. The study concluded that penny stock prices behave randomly and independently over a short period of one year.

Introduction

In an era of scarcity of capital, stock markets are vital economic institutions for facilitating the transfer of private savings into business investment and provide the much needed liquidity for investors. In an economic system the major portion of new capital comes through market which provides a complex mechanism for equilibrium the demand and supply of long term funds.

The issue of securities by corporate units in India is as old as the introduction of joint stock enterprises by the British Government. The 18th and 19th centuries saw the emergence of cotton and jute textiles, tea and plantation industries in India. A vast number of businessmen in major cities purchased the shares and trading started in them early in 19th century. British enterprise and the British Government have thus helped the emergence of securities markets in India. Stock markets are becoming globalized in the sense that firms in need of funds can tap foreign markets and investor can purchase foreign stocks. The stocks of some US firms are widely traded on numerous stocks exchanges around the world like Coca-cola.

The Indian capital market is now being integrated with global market as a result of economic reforms initiated since 1991. The number of stock exchanges increased to 23 by year 2006 in comparison to 19 stock exchanges in the year 1990 and market capitalization was Rs. 3652793.91 crores at the end of year 2006 which was merely Rs. 70521 crores in the year 1990.

Security Analysis refers to the analysis of tradable securities. It analyses the share price returns and the risk involved in the investment. It refers to the analysis of securities from point of view of their prices, returns and risks. The analysis of risk and return related to the securities will help in understanding the behaviour of security prices, market and decision making for investment. The entire process of estimating return and risk of a security is known as security analysis. It involves the potential price of a share and future dividend stream and then discounted back to the present value which helps to take buy, sell and hold decision. So security analysis is the essence of the valuation of financial instruments. It is deeply rooted in fundamental concepts to measure the risk and return of a security. It emphasizes on the return and risk estimates rather than mere price and dividend estimate. The approaches for securities analysis are broadly grouped into the following categories:-

- Fundamental Analysis
- Technical Analysis
- Efficient Market Hypothesis(EMH)

Efficient Market Hypothesis (EMH)

EMH says that successive absolute short run price changes are independent. EMH considers that individuals cannot outperform the market for the simple reason that there are numerous knowledgeable analysts and investors who would not allow the

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deviate from the intrinsic value due active buying and selling. It is also observed that the current market price will reflect the value and therefore there is no need for fundamental or technical analysis. The information known to the public is immediately discounted by investors and will be reflected in share prices in the stock market.

In other sense, efficient market model is actually concerned with the speed with which information is impounded into security prices. If the stock price movements were predictable that would be damning evidence of stock market inefficiency, because the ability to predict prices would indicate that all available information was not already impounded in stock prices. Therefore, the notion that stocks already reflect all available information is referred to as Efficient Market Hypothesis. *Engene Fama* states that an efficient capital market is a market that is efficient in processing information. The market prices of securities will always equal to fair or fundamental values of those securities.

Review of Literature

Fama's (1965) studied the daily proportionate price change of 30 stocks in the Dow Jones Industrial Average (DJIA) for near about 5 years, ending June 1962. The study observed that serial correlation coefficients did not differ substantially from zero. The study also found that the difference between the actual and expected number of runs was statistically insignificant. Thus, study concludes it seems safe to say that this paper has presented strong and voluminous evidence in favour of random walk hypothesis.

Moore (1964) analysed on the basis of weekly changes in the prices of 30 randomly selected stocks for the period (1951-58) and the study found an average serial correlation coefficient of a - 0.06, which is an extremely low value indicating that study of weekly changes of shares prices are useless in predicting future share price changes.

Granger and Morgenstern (1970) worked on Random walk, covering more than fifty stock market price series over several time periods with differing sampling intervals. The study shows that the spectra of log price differences are flat for all the series over a frequently range of 0.5 cycles per year up to 0.5 cycles per day. This gives clue that short term prices behave randomly.

Alexander (1961) used "filter techniques" based solely on price change to see whether an abnormal return could be earned by using such rules. The period of the study was from 1897 to 1959 involved closing prices for two indices, the Dow-Jones Industrial Average from 1897 to 1929 and standard and Poor's Industrials from 1929 to 1959. The size of the *filters* was 5 to 50 per cent. The study concluded that *there are trends in stock market prices.*

Fama and Blume (1966) observed and concluded that there appears to be both positive and negative dependence in price changes. The order of magnitude of dependence is so small; however, that results add further to the evidence that for practical purpose that the random walk model is an adequate description of price behaviour.

N. Krishna Rao (1971) taken weekly averages of daily closing price quotations of the Indian Aluminium Company's share for the period 1955-1970. A few adjustments were made in the data related to dividend, stock split, bonus issue and right issue. The results of the study reveals, the Random-Walk Hypothesis, found to be true for many American and British share prices, is valid for the Indian Aluminium Company's weekly average share prices for the study period.

J.L. Sharma and Robert E. Kennedy (1977) found that stocks on the Bombay Stock Exchange obey a random walk and are equivalent in this sense to the behavior of stock prices in the markets of advanced industrialized countries.

O.P. Gupta (1985) worked on the weak form of efficient market hypothesis and observed that the empirical results pertaining to both the serial correlation and runs analysis found that markets are efficient in weak form.

J.L. Sharma (1983) worked on stock price movements in less developed countries, with presumably less developed capital markets, would portray "inefficiencies" due to the narrowness or lack of breadth of capital markets. The study suggests that price changes of stocks listed in the Bombay Stock

Exchange reflecting a less developed country conform to the general behaviour of stock price changes observable in other leading stock markets of the world examined this far in the finance literature.

N.S. Malik (2000) employed serial correlation test and runs analysis test and concluded that share prices in general follow a random behaviour in India and are in a weak form of market efficiency.

M.S. Belgaum (1995) with the help of 70 companies listed in the 'A' list category on the Bombay Stock Exchange which are also listed and traded in Calcutta, Madras and Ahmedabad Exchanges. The period of the study was Ist April, 1990 to 31st March 1992. In the study two sets of data were collected i.e., the first set considered of the Economic Times All India Index of ordinary shares, with the base year 1985. The second set was individual weekly share prices series of selected companies. On the basis of results of *correlation coefficients and runs tests.* It can be said that, Indian Stock Exchanges are efficient in weak form.

R.K. Mittal (1995) tested whether there are differences in the level of market efficiency of the five major stock exchanges in India. The data for the study included monthly and weekly stock price data relating to the year 1991 and also on the basis of daily closing BSE Sensitive Index and BSE National Index for the period January 1 to September 9, 1992. On the basis of serial correlation test it has been found that all the first order serial correlation coefficients are in significant. On the basis of 'runs test', it has been found that only in the case of two industries the standardised variable Z was found significant at 5 per cent and 1 per cent levels respectively. In the study 'runs test' accepts random behaviour in 14 cases out of a total of 16 industries. But in case of serial correlation test it was found that 9 industries out of 16 cases behave randomly. The author conclude on the basis of above discussion that it can be concluded that share prices in general follow random behaviour in India and are in weak form of efficiency.

S.K. Chaudhuri (1991) studied on share price behaviour to find out whether prices over a period of time have sufficient serial dependence to allow investors to predict future price movements and to know whether trading strategies based on price movements provide opportunities for abnorm profit. The data for the study consists of 93 share over the period January 1988 to April 1990. The author concludes that market does not seem to be efficient even its weak form with accepting some limitations related to sample size and length of the overall study period.

Amanulla and Kamaiah (1998) studied the weak form of market efficiency with the help of monthly data of 53 stocks. The study conclude that the results by and large reveal that the Indian stock market is informal efficient in the week form.

Objectives of the study

The main objectives of the study under consideration are as follows:

i) To examine the behavior of Penny stock prices with regard to the weak form of stock market efficiency.

ii) To examine independence of Penny stock prices.

iii) To examine the randomness of Penny stock prices.

Research Methodology

The study under consideration Testing the validity of EMH: An Empirical study of some Penny Stocks has been conducted to examine the behavior of sample Penny stock prices in weak form of market efficiency. This study is essentially empirical and exploratory in nature.

Hypothesis

In order to examine market efficiency in the weak form, historical sequence of stock prices are studied for independence and randomness to test the following null hypothesis:

(i) H01: Successive stock price movements are independent of the past stock prices.

(ii) H02: Stock price movements pattern is identical to that of random numbers.

Sample Size

Penny stocks are those stocks whose market value is less than Rs.10 or less than the face value. These stocks belong to those companies whose promoters are unknown and whose performance is not good or satisfactory and the companies to which they belong

doing well and have no market reputation. generally low graded stocks.

is based on 30-penny stocks whose price than ten rupees on April 1st 2005. The study was one year ending March 31st and the period is sufficient to examine the term price changes (see appendix for list of

Source of Data

The study is based on daily closing prices which collected from the official website of Bombay Exchange (www.bseindia.com) and database develop by CMIE.

Statistical Tools

To test the hypothesis that successive price changes are totally self-governing, serial correlation analysis is used for measuring possible dependence of successive numbers in a given time series. It provides a measure of relationship between the value of a random variable in time (t) and the value (k) periods earlier. It will indicate whether price change at time is influenced by the price changes occurring (k) periods earlier. The serial correlation (rk) of a time series is given by auto-correlation function of lag k. For testing the hypothesis of weak form of market efficiency to be true, observed serial correlation should not be statistically significant. In order to be statistically significant, it should be greater than three times the standard error of coefficient at 1 percent significant level and two times the standard error at 5 per cent significant level.

Randomness in stock price changes can also be examined by the correlation coefficient between price changes of different time periods. If the auto correlations were close to zero or insignificant at a given significant level, the price changes were said to be serially independent. Serial Correlation measures correlation coefficient between a series of numbers with lagged number(s) in same series. A significant positive correlation indicates the presence of a trend. The presence of negative serial correlation documents the existence of more reversals that might occur randomly. Truly random numbers have zero serial correlation. The serial correlation coefficient is estimated by:

$$r_k = \frac{c_k}{c_o}$$

Wherein,

$$c_k = \frac{1}{n}\sum_{t=1}^{n-k}(X_t - \bar{X})(X_{t+k} - \bar{X})$$

K = 0, 1, 2, 3, ..., n

$$\bar{X} = \frac{1}{n}\sum_{t=1}^{m} X_t$$

is mean of the whole series

C_o = the variance of Xt

n = number of observation

Statistical testing of the serial correlation coefficients requires the standard error of estimated coefficients. It is obtained as:

$$Z = r_k\sqrt{(n-k}$$

For null hypothesis to be true, observed serial correlation should not be statistically significant, i.e., it should not be greater than three times the standard error of coefficients.

Price movements may be random most of the time, but occasionally become serially correlated for varying periods of time and correlation coefficient is affected by extreme values. Another statistical test developed for the same purpose, runs test, ignore the absolute values of the numbers in the series and considers their signs only. A run defined as a consecutive sequence of price changes of the same sign. There are three types of price changes i.e., positive (+), negative (-) and zero (0) change for instance. A plus run of length 'i' may be defined as a sequence of 'i' positive price changes preceded and succeeded by either negative or no price change. Similarly, a minus and no runs can also be defined for the purpose in the run test. Run test compares the actual number of runs with expected number of runs. If the observed runs are not significantly different from the expected number of runs, then it is said that successive price changes are random. On the other hand, if this difference is significant, the price changes would be regarded as dependent. In the study under consideration, the expected number of runs of all types can be computed by using the method suggested by Brownlee (1965) as:

$$M = \frac{2(n1\ n2 + n1\ n3 + n2\ n3)}{n1 + n2 + n3} + 1$$

Wherein,

M	=	Expected number of runs
n1	=	Number of Positive Signs
n2	=	Number of Negative Signs
n3	=	Number of Zeros (no change in share price)

The standard error of the expected number of runs of all signs may be obtained as follows:

$$\sigma = \left[\frac{[2(n_1n_2 + n_1n_3 + n_2n_3)]}{(n_1 + n_2 + n_3)^2 - (n_1 + n_2 + n_3 - 1)} \quad \frac{2(n_1n_2 + n_1n_3 + n_2n_3 + 6n_1n_2n_3)}{(n_1 + n_2 + n_3)(n_1 + n_2 + n_3 - 1)} \right]^{\frac{1}{2}}$$

For large samples, the sampling distribution of M is normally distributed with mean M and standard error σ_m. The difference between actual and expected number of runs can be expressed by a standard variate Z as under:

$$Z = \frac{(R + 0.5 - M)}{\sigma_m}$$

Wherein,

R	=	Observed number of runs of all signs
0.5	=	Continuity adjustment
M	=	σ_m

Run test compares the actual number of runs (R) with the expected number of runs of all types (M) and if the actual number of runs is significantly different from the expected number of runs, the successive price changes are not considered to be random. If the computed value of standard variate value of Z is equal or more than the critical value at 5 per cent or 1 per cent level of significance, it means that successive price changes have not followed a random walk approach and the market may not be considered efficient in the weak form.

Results

The randomness in stock prices have been examined using tests of serial correlation & runs test and discussed below in two parts.

Serial Correlation

The weak form of market efficiency can be examined in form of independence of stock prices and randomness of stock prices. Independence of stock prices can be examined with the help of serial correlation test and randomness of stock prices can be examined with the help of run test analysis. This section of the study is concerned with the independence of stock prices which has been measured with the help of serial correlation test spreading up to 16 lags. The results of the serial correlation test to examine the independence of penny stock prices of sample data has been given in table 1.

The table 1 depicts that out of 480 correlation coefficients, 55 (about 11 percent) were found to be significant at 5 percent level and 35 (above 6 percent) were found to be significant at 1 percent level. The result displayed that 21 companies out of 30 are statistically significant at 5 percent level of significance for the lag 1 whereas 10 companies out of total 30 companies are significant at 1 percent level of significance. At 5 percent level of significance for lags 4,6,15 and 16 the coefficients are significant only in the case of 2 companies. For lags 8,10 and 11 the coefficients are significant only in the case of 1 company. For lags 7 and 12 the coefficients are significant only in the case of 3 companies. The number of significant coefficients is 6 for lag 2,4 for lag 3 and no company for 9,13 and 14. In the first order significant coefficients mostly are positive. Table 2 exhibits that the list of companies showing significant values of serial correlation coefficients for lags 1 to 16.

It has also found that 3 companies (code no. 2, 4 and 12) out of total 30 companies have zero correlation coefficient beside positive and negative correlation coefficients. It was interesting to note that companies have more positive correlation coefficients than negative correlation coefficients which means that prices of penny stocks increase more times than decrease. Companies 4 and 6 have maximum positive correlation coefficients and companies 14 and 29 have maximum 11 negative correlation coefficients.

The study reveals that prices behave randomly and cannot be detected or predicted. It means that no one is able to get the abnormal returns from the market by using past information and prices move randomly. It is interesting to note that not only the large stocks move freely in the market but also the penny stocks behave in the same manner. The results of the present study re-confirm the results of the

studies conducted earlier and contradict in some cases. The debate in academic literature in this context has now settled to acknowledge the widespread prevalence of market efficiency in stock markets in its weak form all over the world. The present study contradict the results of the study conducted by Moore (1964) who studied the changes in the stock prices with the help of serial correlation test conclude that "indices of stock price relatives behave detectably different from the individual price relatives." By detectable he means that prices can be predictable. But present study concludes that stock prices behave randomly. This study refute the Moore's study because stock prices cannot be detectable in the efficient market. If the prices are detectable, it cannot be efficient market. It also reveals that analysists cannot predict the prices of the stocks, so they should not be able to earn abnormal profits consistently by simply observing the historical prices of stocks from the market. The present study has consistency of results of the study conducted by O.P. Gupta (1985) who worked on the weak form of efficient market hypothesis in 1985 ,with the help of serial correlation test and run test analysis states that market are efficient which means that no analysis of historical data is useful to predict the prices of stocks in the weak form of market, the same is reveal in the present study.

N. S. Malik (2000) who studied on weak form of market efficiency over a very short period of time i.e., a day concluded that share prices in general follow a random behaviour in India and are in a weak form of market efficiency. The results of present study like the study of Malik reveals the same results. The daily prices of the penny stocks fluctuate frequently although they have very little face value and do not dominate the market and do not belong to A grade securities.

In the present study, it has been found that the results of price changes do not display serial dependence in major cases, although some kind of first order dependence has been reflected by the results of price changes. But numbers of significant coefficients are not much that it is used to predict the future price behavior on the basis of past price data and reconfirms the weak form of market efficiency for penny stocks.

Runs Test

Run test analyses and examines for randomness based on a number of runs. In this test the absolute numbers are replaced by signs which merely count the numbers of runs, namely consecutive price changes or signs in the same directions and their repetition at a later date. This test tries to detect temporary trends for varying periods which may not be detected by serial correlation. In the present study, the randomness of the prices have been examined with the help of run test. To measure the actual number of runs mean value and median value have been used to compare with the expected number of runs in each category. The results of the run test analysis has been given in the table 3:

Table 3 depicts that the results of "runs test" applied to daily prices of Penny Stocks for Indian market. The table shows the expected number of runs and Z variant values on the basis of Median and Mean value of 30 companies from April 2005 to March 2006. It is evident from the table that on the basis median 7 companies out of 30 companies were found significant which reflects that prices does not behave randomly out of which 6 companies are significant at 5% level of significance and only 1 company is significant at 1% level of significance. It was curious to note that the results of the run test were near about to the results of serial correlation test. But under mean 9 companies are significant at 5% level of significance and only 2 companies are significant at 1% level of significance. It means that about 23 % companies are significant for median Z and about 30% companies are significant for mean Z which is very near the results depicts in serial correlation test. In total cases about 90% was found insignificant on the basis of randomness it can be claimed that Indian capital market is efficient in weak form of market efficiency in penny stocks.

Many studies are conducted earlier with the help of run test to examine the weak form of market efficiency. Some studies favour and some studies oppose the present study. Fama (1965) in his study contends that there is little evidence, either from the serial correlations or from the various runs test, of degree of dependence in the daily price changes and concludes that it seems safe to say that there exists strong and voluminous evidence in favour of

random walk hypothesis. Malik (2002) found that runs test reflects non-randomness in some cases on the basis of daily price changes, but these were not generally in agreement with the serial correlation results analysed earlier i.e., a day to explore the levels of the weak form of market efficiency. Thus in the present study, by taking an overall view on the basis of run test it revealed that the prices of penny stocks follow the random behaviour and are in a weak form of market. Chaudhuri (1991) studied to find out whether prices over a period of time have serial dependence to allow investors to predict future price movements and to know whether trading strategies based on price movements provide opportunities for abnormal profit. The study concluded that market does not seem to be efficient even in its weak form with accepting some limitations related to sample size and length of the overall study period. In a nutshell it can be concluded that the runs test generally follows the random walk model and confirms that Indian stock markets are efficient in weak form even for penny stocks.

Conclusion

It has been observed from the above analysis that behavior of penny stock prices does not display any apparent pattern over a period of one year and it would be difficult to predict stock prices to beat the market return. The study concludes that penny stock prices behave randomly and independently in the short run.

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Web Sites

www.bseindia.com
www.nseindia.com

Appendix

The name of companies whose value are taken is given below:-

List of Companies sampled:

S. No.	Name of Companies
1.	Opal Industries Ltd.
2.	Pentamedia Graphics Ltd.
3.	Nachmo Knitex Ltd.

Peacock Industries Ltd.	17.	Ras Propack Lamipack Ltd.
Nalin Lease Finance Ltd.	18.	Astro Bio Systems Ltd.
Pearl Engeneering Polymers Ltd.	19.	Shalimar Productions Ltd.
Pennar Aluminium Co. Ltd.	20.	Shamken Cotsyn Ltd.
Nam Credit & Investment Consultants Ltd.	21.	Omnitex Industries (India) Ltd.
Pentagon Global Solutions Ltd.	22.	Sheetal Bio Agro Tech Ltd.
NCC Finance Ltd.	23.	Shamrock Industries Co. Ltd.
Q Flex Cables Ltd.	24.	Ontrack Systems Ltd.
Radaan Media Works (I) Ltd.	25.	Shonkh Technology International Ltd.
Reghunath International Ltd.	26.	Titan Securities Ltd.
Rainbow Denim Ltd.	27.	National Flask Industrial Ltd.
Omni Dye Chem. Exports Ltd.	28.	TRC Financial Services Ltd.
Rashel Agrotech Ltd.	29.	Natraj Proteins Ltd.
	30.	Pentium Infotech Ltd.

Table 1
Serial Correlation coefficients for daily stock prices
For the period, April 2005 - March 2006

Code	Name of the company	Lags															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Opal Industries Ltd.	0.092	0.032	-0.021	-0.006	-0.047	0.063	.201**	0.044	0.053	-0.054	0.013	-0.081	0.025	0.067	0.058	-0.115
2	Pentamedia Graphics Ltd.	-154*	-0.081	-0.063	-0.053	-0.03	0	-0.07	0.027	0.12	0.084	-0.023	-0.013	-0.034	-0.047	-0.013	0.041
3	Nachmo knitex Ltd.	-0.14	-0.078	-0.135	0.068	0.027	0.019	0.063	-0.024	-0.048	-0.073	0.114	-0.122	0.092	-0.07	0.055	-0.056
4	Peacock Industries Ltd.	.367**	.225**	0.073	0.025	0.071	-0.022	0.031	0.002	-0.028	0.022	0.006	0.06	0.061	0.025	-0.03	0
5	Nalin Lease Finance Ltd	-0.112	0.059	0.052	-0.054	-0.123	-0.049	0.023	0.007	-0.086	0.043	-0.104	-0.04	0.038	0.013	0.042	-0.004
6	Pearl Engineering Poly.Ltd.	.146*	0.116	-0.018	0.119	0.035	-0.028	0.114	-0.062	0.052	0.016	0.065	0.068	0.042	-0.043	0.009	0.019
7	Pennar Aluminium Co. Ltd.	0.105	0.048	0.102	-0.05	.144*	0.017	-0.016	-0.051	-0.067	-0.065	-0.073	0.094	-0.119	-0.053	0.03	-0.032
8	Nam Credit & Invest.cons.Ltd.	.185*	0.081	0.075	0.028	0.117	-0.081	-0.114	-0.015	-0.077	-0.053	-0.056	-0.075	0.021	-0.006	0.02	0.042
9	Pentagon Global Solutions Ltd.	.215**	0.014	-0.05	-0.03	0.047	.224**	-0.075	-0.051	0.002	-0.077	0.033	0.104	0.056	-0.027	0.008	-0.045
10	NCC Finance Ltd.	.255**	.206**	-0.006	0.075	-.126*	-0.092	-0.005	-0.034	0.023	-0.115	0.017	-.210**	-0.075	0.004	0.059	-0.024
11	Q Flex Cables Ltd.	.172*	.185*	0.021	-0.084	0.092	-0.056	0.084	-0.011	0.066	0.088	0.05	0.051	-0.016	-0.041	-0.047	-0.038
12	Radaan Media Works (I) Ltd.	.339**	0	-.138*	-0.073	-.139*	-0.097	0.026	0.112	0.111	0.03	-0.01	-0.019	-0.016	-0.074	-0.037	-0.036
13	Reghunath International Ltd.	.187*	-0.001	-.136*	0.012	-0.081	0.017	0.034	0.041	-0.076	-0.013	-0.029	0.028	0.121	0.025	0.045	-0.104
14	Rainbow Denim Ltd.	0.042	.126*	-0.006	-0.012	-0.079	-0.079	-0.005	-0.122	-0.08	0.047	-0.093	0.018	0.089	-0.014	-0.025	-0.049
15	Omni Dye Chem.Exports Ltd.	0.1	-0.061	0.049	-0.039	0.007	0.055	0.022	0.032	-0.04	-0.149	0.03	-0.013	0.107	0.083	-0.11	-0.065

Code	Name of the company	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	Rashel Agrotech Ltd.	.403**	0.084	0.056	0.075	.133*	0.039	-0.066	-.158*	-0.073	-0.014	0.085	.198*	0.115	0.031	0.014	0.038
17	Ras Propack Lamipack Ltd.	.274**	0.05	-.176*	-0.139*	0.082	0.088	.201**	0.053	0.021	-.144*	0.005	0.01	0.025	-0.019	0.017	0.028
18	Astro Bio Systems Ltd.	.189*	0.064	-0.066	-.165*	-0.041	0.031	-0.051	0.002	-0.07	0.003	0.004	-0.032	0.099	0.079	-0.066	-0.098
19	Shalimar Productions Ltd.	.266**	-0.083	-.187*	-0.101	-0.007	0.063	0.018	0.021	-0.076	-0.032	-0.037	0.051	0.017	0.021	-0.07	-.179*
20	Shamken Cotysyn Ltd.	.194**	-0.067	-0.117	-0.049	-0.006	0.076	.151*	0.005	-0.077	-0.07	0.016	0.145	-0.032	-0.006	-0.05	-0.069
21	Omnitex Industries -(India) Ltd.	-.158*	-.205*	0.028	0.09	-0.028	0.035	-0.02	0.115	-0.002	-0.103	-0.01	0.137	0.046	-0.103	-0.034	0.049
22	Sheetal Bio agro Tech Ltd.	0.087	0.005	0.115	-0.027	-.129*	-0.093	-0.037	-0.052	-0.034	0.1	0.01	0.066	0.118	-0.092	0.157	0.009
23	Shamrock Industries Co.Ltd.	.225**	0.008	0.091	-0.065	-.153*	-0.029	0.014	-0.043	-0.065	-0.079	-0.066	0.015	-0.039	0.099	0.088	0.043
24	Ontrack Systems Ltd.	.200**	0.095	-0.018	-0.019	-.128*	-0.049	0.034	0.002	-0.106	-0.019	0.036	0.014	0.055	-0.07	-0.078	0.062
25	Shonkh Technology Inter. Ltd.	0.11	-.205**	-0.073	0.033	0.123	0.052	-0.016	0.093	-0.007	-0.058	0.003	0.063	0.053	-0.075	-.171*	-.128*
26	Titan Securities Ltd.	.235**	0.094	-0.076	0.014	0.016	0.058	0.012	-0.028	-0.052	0.017	-0.165*	-0.023	-0.13	-0.067	-0.102	0.035
27	National Flask Industries Ltd.	.183*	-0.047	-0.055	0.034	0.06	.193**	0.114	0.08	0.07	-0.081	-0.013	-0.081	-0.046	-0.008	.170*	-0.084
28	TRC Financial Services Ltd.	0.08	-0.041	0.066	-0.103	0.011	0.04	-0.012	0.065	-0.127	-0.035	0.013	-0.004	-0.01	0.001	0.058	-0.129
29	Natraj Proteins Ltd.	-.176*	-0.061	-0.103	-0.038	0.061	-0.007	-0.017	-0.013	-0.007	-0.051	0.016	0.034	-0.033	0.115	-0.019	0.061
30	Pentium Infotech Ltd.	.188*	0.099	0.094	0.01	0.089	-0.078	0.115	0.037	-0.079	0.111	0.096	.135*	0.082	-0.102	-0.005	-0.092

*significant at 5 % level ** significant at 1 % level

Table 2

Summarised Results of Companies having Significant Serial Correlation Coefficients

Lags	Companies Total	Having coefficients >3SE Code of companies	Companies Total	Having coefficients >2SE Code of companies
1	10	2,6,8,11,13,18,21,27,29,30	21	2,4,6,8,9,10,11,12,13,16,17,18,19, 20,21,23,24,26,27,29,30
2	3	11,19,21	6	4,10,11,19,21,25
3	4	12,13,17,19	4	12,13,17,19
4	2	17,18	2	17,18
5	7	7,10,12,16,22,23,24	7	7,10,12,16,22,23,24
6	0	-	2	9,27
7	1	20	3	1,17,20
8	1	16	1	16
9	0	-	0	-
10	1	17	1	17
11	1	26	1	26
12	1	30	3	10,16,30
13	0	-	0	-
14	0	-	0	-
15	2	25,27	2	25,27
16	2	19,25	2	19,25
	35		55	

Table 3
Results of Runs Test for daily Stock Prices for the period April 2005 to March 2006

Code no.	Total Cases	No.of runs	Z (med)	Code no.	Total Cases	No. of runs	Z (Mean)
1	250	98	-3.548**	1	250	100	-2.966**
2	250	119	0.088339	2	250	119	-0.53356
3	178	87	-0.45099	3	178	91	0.193173
4	250	113	-1.6477	4	250	105	-2.59303**
5	141	75	0.668249	5	141	79	1.34856
6	250	117	-1.13695	6	250	121	-0.058589
7	250	120	-0.75661	7	250	108	-2.08341*
8	193	87	-1.50723	8	193	87	-1.50723
9	250	133	0.974424	9	250	119	-0.69727
10	247	111	-1.72124	10	247	101	-2.86477**
11	222	114	0.269072	11	222	114	0.3
12	250	109	-1.89687	12	250	110	-2.01378*
13	231	115	-0.184	13	231	115	-0.923983
14	231	115	-0.09542	14	250	125	-0.12574
15	207	110	0.783809	15	207	102	-0.30852
16	250	113	-1.64406	16	250	113	-1.51571
17	250	106	-2.52129*	17	250	110	-1.73554
18	244	115	-1.01756	18	244	111	-1.37759
19	250	119	-0.88626	19	250	131	0.944302
20	250	136	1.267459	20	250	136	1.337855
21	193	97	-0.06286	21	193	97	-0.06286
22	248	101	-3.05088**	22	248	101	-3.05088**
23	235	95	-3.07229**	23	235	95	-3.07229**
24	249	116	-1.20439	24	249	112	-1.68696
25	250	117	-1.13977	25	250	117	-1.13695
26	164	76	-1.09484	26	164	72	-1.66339
27	250	95	-3.91693**	27	250	101	-2.93002**
28	201	98	-0.46743	28	201	92	-1.3432
29	192	106	1.302452	29	192	106	1.409
30	250	99	-3.15939**	30	250	97	-3.563**

* significance at 5% level
** significance at 1% level

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Causes and Impact of Non Performing Assets in Public Sector Banks: A State Level Analysis

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Lending is always accompanied by the credit risk arising out of the borrowers' default in repaying the money. A banker should, therefore, mange his loan in a safe manner. This may include development of comprehensive credit appraisal and monitoring system, introduction of credit audit system and also establishment of the system to tackle potential problem of recovering loans well in time. This paper examines the reasons of NPAs in selected public sector banks in the state of Haryana. It also examines the impact of NPAs on profitability and other financial parameters.

Introduction

An asset becomes non-performing when it ceases to generate income for the bank. Previously a non-performing asset (NPA) was defined as a credit facility in respect of which the interest or installment of principal has remained past due for a specified period of time, which was reduced from four quarters to two quarters in a phased manner.

As a result of the improvements in the payment and settlement system, recovery climate, upgradation of technology in the banking system, etc., it has been decided to dispense with past due concept with effect from March 31, 2001. Accordingly, as from that date, a non-performing asset (NPA) is an advance where:

- Interest and/or installment of principal remain overdue for a period of more than 180 days in respect of term loan.
- The account remains out of order for period of more than 180 days, in respect of an overdraft/ cash credit (OD/CC).
- The bill remains overdue for a period of more than 180 days in the case of bills purchased and discounted.
- Interest and/or installment of principal remains overdue for two harvest seasons but for a period not exceeding two half years in the case of an advance granted for agricultural purposes, and
- Any amount to be received remains overdue for a period of more than 180 days in respect of other accounts.

With a view to moving towards international best practices and to ensure greater transparency, it has been decided to adopt the 90 days overdue norms for identification of NPAs, from the year ending 31st March 2004.

Banks are required to classify non-performing asset further into following three categories based on the period for which the asset has remained non-performing and the reliability of the dues: (i) Sub-Standard Assets, (ii) Doubtful Assets, and (iii) Loss Assets.

An advance is to be classified as sub-standard if it remains NPA upto a period of 18 months and will be classified as doubtful if it remains NPA for more than 18 months. An account can be classified a loss without any waiting period where the dues are considered uncollectible by the bank or internal or external auditor or RBI inspectors but the amount has not been written off wholly.

Review of Literature

Although large number of studies relating to the problem of NPAs in the public sector banks have been conducted by the researchers and various financial institutions at the National as well as state levels. However, not much work has been done with reference to state of Haryana. In brief account of studies conducted in the area of NPAs is given here. Rajaraman and Garima Vasistha (2002) conducted a study on non-performing loans of Public Sector Banks over a five year period ending in 1999-2000. The asset management companies (AMCs) have been employed to address the overhang of bad debt in the financial system. The successful experiences suggest

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that AMCs can be effectively used, but only for narrowly defined purposes of resolving insolvent and unviable financial institutions and selling of their assets. But even achieving these objectives required many ingredients: a type of asset that is easily liquefiable (e.g. real estate), professional management, political independence, a skilled resource base, appropriate funding, adequate bankruptcy and foreclosure laws, good information and management systems, and transparency in operations and processes.

Sujata Visaria (2005) investigates the micro-level link between judicial quality and economic outcomes. It uses a loan-level data set from a large Indian banks to estimate the impact of quasi-legal institution, Debt Recovery Tribunals, aimed at accelerating banks recovery of non-performing loans. The study reveals that the establishment: of tribunals reduces delinquency in loan repayment by between 3 and 10 percent.

James A. Hanson (2001) has studied banking sector reforms in India. In the early 1990s, India began to reverse the financial repression and heavy intervention that had characterized its banking sector for many years. The government liberalized interest rates and directed credit and increased competition. Regulation and supervision were also strengthened substantially. These policies yielded some substantial benefits but the study points out that the gains were limited.

Meera Sharma (2001) examined the hypothesis that the problem of NPAs of Indian banks remains unsolved because of improper sequencing of reforms. Researchers and institutions, such as the IMF and the World Bank, are stressing the importance of proper sequencing. Fundamental causes of high NPA level are the legal environment, public ownership of banks, political interference, competition, liberalization, inadequate risk management practices and lack of prudential regulation. Some restructuring reforms have been suggested to strengthen the banking system. Analysis throws up suggestions for future action by regulators and policy makers.

Madhu Vij (2001) highlighted the Asset Liability Management issue in banks and financial institutions. The simultaneous management of both assets and liabilities has come into being as a strategic response of banks and financial institutions to manage the high inflationary and volatile interest rates during the seventies and eighties coupled with severe recessionary trends that prevailed during this period.

Neltime and Kuruba (2000) observed that the pace of reforms in banking sector in India is definitely encouraging and is giving positive signals of structural changes in the financial sector. However, it was opined that the reforms would be successful only if the level of NPAs is reduced. In order to tackle the problem of NPAs there is need for legal reforms. It is attitude and efficiency of banking authorities that have to go a long way in making the banking reforms operationally and functionally effective.

Murthy (2000) in his study focuses on branch level management of NPAs through better credit monitoring. He has given ABC analysis as a tool for NPA management. He suggested that accounts should be listed with critical details and then ranking should be done and accounts should be segregated into A+, A, B and C groups on the basis of value involved and potential for recovery and then monitor these with different intensity.

Objectives of the study

The basic objectives of the study are as under : -

a. To examine the reasons of NPAs in selected Public Sector Banks in Haryana.
b. To assess the impact of NPAs on profitability and other financial parameters of these banks.
c. To examine the measures taken by Government of India, RBI and Government of Haryana from time to time in relation to NPAs.
d. To suggest and recommend certain measures to further control of NPAs in these banks.

Research Methodology

For the present study, both primary and secondary data are used. Primary data is collected through questionnaire. To prepare the questionnaire, a pilot survey was conducted on the various issues related to NPA's and in light of the survey information the final questionnaire is prepared.

Secondary Data are collected from Annual Reports of RBI and other RBI publications including Trend and Progress of Banking in India, Statistical Tables relating to Banks in India and Report on Currency and Finance. Specified agenda and minutes of the meetings like State Level Banker's Committee meetings and reports of the banks prepared at various levels i.e., branch, region and zonal level, are also been referred to. Data from the office of Haryana State Legal Services Authority at Chandigarh, Dept. of Agriculture (Haryana) and Office of Debt Recovery Tribunal at Chandigarh are also been utilized. Further, articles and papers relating to NPAs published in different business journals, magazines, newspapers, periodicals are studied and data available on internet and other sources was also used.

A sample for the study comprise of 50 branch managers of public sector banks spread over the Northern Districts of Haryana, i.e., Panchkula, Kurukshetra, Karnal and Panipat which constitute 4.9% of the total number of the bank branches of the Haryana. I used convenient cum judgement sampling technique to collect information from the respondents. The study was conducted during November 2005 to June 2006.

Various statistical tools like ratios, averages, percentages, measures of central tendency and frequency distribution have been used for analyzing and interpreting the data. To interpret the results of questionnaire ranking technique was also used. To rank different variables weights running from 5 to 1 were assigned to each point corresponding to very important, important, average, weak and insignificant respectively.

Analysis and Interpretation

1) Causes Attributable To Banks (Table 1)

The average score of each cause attributable to the banks are given in table 1. It is exhibited in the table that "Target oriented approach to lending" is the most important cause for occurrence of NPAs attributable to banks with mean score value of 4.59. The quantitative targets fixed for credit expansion and pressure to achieve such targets deteriorate the qualitative aspect of lending. "Wrong identification of beneficiaries" is the second important cause which results in more NPAs. "Absence of credit information sharing among banks" has been identified that the next major cause for NPA with means score value of 3.51. "Weak monitoring" by the banks refers absence of effective supervision of loan accounts on the part of the banks has been identified as the next major cause which follows closely with a mean score value of 3.50. Poor follow up results in many loans becoming NPAs. Unscrupulous borrowers take advantage of the Loopholes in follow up system of the bank and laxity on the part of the officials of the bank. It is also observed from the table that other remaining causes of NPA are not playing much important role in enhancing NPA's in banks since they have low mean score values.

2) Causes Attributable To Borrowers (Table 2)

Table 2 exhibits that 66 percent of the respondents consider "No collateral security in sponsored loans" is very important factor for occurrence of NPAs. "Willful default caused by other factors" and "Willful default induced by officially announced loan waiver schemes" are the next major factors with mean score values of 4.23 and 4.20 respectively. Most of the NPAs accounts in rural branches relate to tractor loans where farmers have willfully defaulted preferring to pay high cost funds like loans from Arhtiyas and private lenders etc. Borrowers default with the intention either to cheat the banks or avail concession at later stage under various settlement schemes. Willful default induced by officially announced loan waiver scheme vitiate the repayment culture and people feel that loan given to them will be waived with the passage of time by one political party or the other.

"Mis-utilization/diversion of loan" is the next major cause attributable to the borrowers following closely with mean score value of 4.10. The borrowers do not create assets as per original plan or assets are mis-utilised. The branch Managers were of the view that the loan is diverted for other purposes like housing, marriages particularly under the government-sponsored loans like PMRY etc. "Genuine viability problem of borrowing unit" and "Lack of technical/ managerial expertise" on the part of the borrowers are other major factors responsible for increase in NPAs. Units may become sick due to time cost over run while implementing the project, raw-material shortage, power shortage, natural calamities like

flood etc., business failure like product to capture market, product obsolescence etc. If borrowers lack in managerial and technical expertise, then the unit will not be able to function smoothly thereby increasing the NPAs. "Dispute among borrowers" is last major factor responsible for higher NPAs.

3) Bankwise rating of causes of NPA's (Table 3)

Table 3 shows that PNB has ranked "Willful default induced by officially announced loan waiver schemes" and "Willful default caused by other factors" jointly as most important causes. From this a conclusion is drawn that willful default needs to be dealt on priority by PNB. SBI and "Other Banks" have given "No collateral security in sponsored loan" as the first rank. PNB has ranked "No collateral security in sponsored loan" as sixth important cause. This leads to a conclusion that PNB is not giving proper attention to government sponsored loans. SBI managers have accorded higher priority to "Dispute among borrowers" and it is ranked second important cause whereas they have ranked "Willful default caused by other factors" fifth rank which is considerably lower than ranking given by managers of PNB and "Other Banks". "Other Banks" managers have accorded "Willful default induced by officially announced loan waiver schemes" lower ranking than PNB and SBI. SBI has rated "Genuine viability problem of borrowing unit" least important reason attributable to the borrowers. This shows that SBI should focus more on viability appraisal of projects.

4) General Causes of Occurrence of NPA (Table 4)

Table 4 shows that among the general causes, it is found that respondents rated "Crop failure" as the major extraneous factor/general cause contributing towards accumulation of NPAs with mean score value of 4.61. Haryana being agricultural economy, crop failure has major impact on loans extended to the agriculture sector and industrial sector. Haryana Government has launched crop insurance scheme to reduce number of accounts turning NPAs due to crop failure. "Slow disposal of recovery cases under various Recovery Acts" is the next "General slow down in economy" is the next significant factor contributing towards NPAs with mean score value of 4.23. "General slow down of the Economy", "Inadequate Infrastructure facilities like lack of power, roads etc." are other major factor with the average score of 3.64 and 3.34 respectively. "Frequent changes in Government policies" like changes in excise/ import duties, Pollution Control Order etc. and "Withdrawal of policies" like product reservation, price preference etc. also contributes to making units unviable. "Depressed capital market" was considered as the least important extraneous factor of occurrence of NPAs. Some of the bank managers also pointed out labour problems and natural calamities like floods, droughts and Fire as other causes responsible for NPAs.

5) Bankwise rating of General Causes (Table 5)

Considering bankwise rating of general causes of occurrence of NPAs, it is observed from Table 5 that among major differences, SBI managers have given higher rating to "Frequent changes in Government policies" and ranked it as the second most important cause. Further, they have given lower ranking to "General slow down in economy" by giving it Fifth rank whereas PNB and "Other Banks" have given it third rank.

6) Impact of NPA's (Table 6)

Present level of NPAs is considered a very big problem for the banks and immediate steps needs to be taken to check it. 95.1% of the respondents felt the impact of NPA's on profitability very strong and 4% agreed with it strongly, which shows universal acceptance of this view that NPA's has a negative impact on the profitability of banks. Credit deployment and investment policy is also affected by NPA's. Impact of NPA's on this factor has been ranked second with a mean score value of 4.38.

"Achievement of capital adequacy level" and "Productivity" are jointly ranked third on the basis of average score of 4.31. Capital Adequacy is a measure of a bank's internal strength to absorb credit risks which may result in loss on account of its advances going bad. For this the RBI has linked minimum capital requirement to the composition of assets of the bank. RBI desires the banks to maintain a certain level of capital fund in relation to their risk-weighted assets.

Productivity of the bank is also considered major area of impact. In the context of banking industry, we can consider productivity in terms of deposits, credit, and business per employee. With the high level of NPAs, the bank staff would be devoting lot

of their time in preparing database for NPAs accounts and initiating action for recovery of these advances instead of planning for development through more credit and mobilization of resources. Results obtained from the Questionnaire are also in consonance with Berger and De Young (1997) and Das (1999) who found that increase in non-performing loans tended to be followed by decrease in productivity.

According to the ranking on the basis of average score, impact on "Interest Spread" is ranked 6th with average score of 4.19. The interest spread is the difference between the interest earned and interest paid by the banks. The interest earned among other factors depends upon the composition of asset portfolio and yield on that, whereas, interest paid is affected mostly by interest rates. Reduction in interest spread is due to various reasons, primarily, falling interest rates. When an asset becomes NPA, it adversely affects the spread as it does not contribute to the interest income. Therefore, high level of NPAs leads to decrease in the interest spread of the banks. The respondents also consider impact of NPAs on "The economy" significant as the credit to various sectors of economy slow down. The respondents have given it a mean score value of 3.82. There is slow down in growth in GDP, industrial output and fall in the profit margin of the corporate and consequent depression in the market.

"Market price of the banks' shares" is the next performance indicator affected by the NPAs which has been given means score value is 3.24. As stated earlier, banks can't charge interest on non-performing advances and annual provisions have to be made for these loans that reduce the profitability leading to fall in earnings per share. Moreover, CRAR is adversely affected due to higher NPAs because of which capital fund needs to be increased to adhere to the adequacy norms. For more capital infusion, distribution base has to be broadened and therefore, earnings per share will fall which will further lead to fall in market price of the share of the bank.

"Re-finance facilities available to banks" is the last major India affected by the NPAs. Refinance facilities from higher agencies like NABARD gets reduced due to inadequate recovery of loans. The eligibility of a bank draw refinance from NABARD is linked to the percentage of amount recovered in respect of demand created of direct medium and long term loans agriculture and allied activities. However, short term loans, indirect loans agriculture and allied activities and medium and long term loans for which claims have been settled by DICGCI (Deposit Insurance and Credit Guarantee (Corporation of India) are excluded while reckoning the percentage of recovery to demand. Therefore, the refinance facility would be progressively reduced depending on the proportion of NPAs.

Conclusions and Suggestions

It is revealed that "Target oriented approach to lending", "Wrong identification of beneficiaries", "Weak monitoring" by the banks and "Weakness in credit appraisal system" are the most important causes for occurrence of NPAs attributable to banks. Regarding causes for occurrence of NPAs attributable to the borrowers, "No collateral security in sponsored loans", Willful default induced by officially announced loan waiver scheme and caused by other factors and "Mis-utilization/ diversion of loan" are the major causes. The respondents rated "Crop failure" and "Slow disposal of recovery cases under various Recovery Acts" and General slowdown in economy as critical general causes for Occurrence of NPAs.

Impact of NPAs on the performance of the banks is manifold. "Profitability" is the worst affected by NPAs followed by "Credit deployment and investment policy", "Achievement of capital adequacy ratio level" and reduction in "Productivity". Profitability gets affected as interest income gets reduced due to non-accrual of interest and non-recycling of funds. Provision to be made for bad debts, increase in follow up cost for NPAs and concessions offered under nursing programmes further reduce profitability. Among the preventive measures to control NPAs, "Efficient credit appraisal", *"Effective credit monitoring"*, "Monitoring of standard assets" and "Imparting specialised training to bank officers" are considered the most critical. For efficient credit appraisal, economic viability and technical feasibility of the project along with financial position of the borrower are considered the most important parameters of evaluation of loan application. "Regular follow up through notices and personal contacts", Recovery camps", "Compromise",

Securitization of assets" and "Suit filing" are rated as the important curative measures to control NPAs. Major handicaps in the recovery of advances are cumbersome "Legal system", "Inadequacy and lack of proper training of staff" and "Paucity of time".

Total elimination of NPAs is not possible in banking business owing to externalities but their incidence can be minimized. It is always wise to follow proper policy for appraisal, supervision and follow-up of advances to avoid NPAs. Armed with the Securitisaiton Act, 2002, the banking industry is targeting to reduce its NPA with full vigour. Although the Act has no doubt given a lot of leverage to the banks to recover their NPAs, the success shall lie only in its proper and forceful enforcement. Given the situation that a large amount of NPAs are towards big industrialists who wield a considerable influence in the corridors of power, only strong political will on the part of Government to act against such elements will bring some tangible results to the fore.

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Table 1
Rating Of Causes Of Occurrence Of NPAs Attributable To Banks

	Percentage of respondents giving rating as						
Causes of occurrence of NPAs	Very important	Important	Average	Weak	Insignificant	Mean score value	Rank
Target oriented approach to lending	66%	25%	9%	0%	0%	4.59	1
Wrong identification of beneficiary	40.2%	17.7%	22.6%	4.2%	15.3%	3.63	2
Absence of credit information sharing among banks	27.4%	17.1%	28.2%	17.7%	9.7%	3.51	5
Weak monitoring	34.0%	27.8%	12.5%	9.7%	16.0%	3.50	3
Weakness in credit appraisal system	24.6%	21.2%	28.4%	19.1%	6.7%	3.43	4
Non availability of reliable data related to market & industry	27.3%	22.7%	11.0%	19.2%	20.1%	2.84	6
Delay in disbursement of credit facility	14.9%	22.1%	10.1%	21.5%	31.4%	2.64	7

Source : Questionnaire

Table 2
Rating Of Causes Of Occurrence Of NPAs Attributable To Borrowers

	Percentage of respondents giving rating as						
Causes of occurrence of NPAs	Very important	Important	Average	Weak	Insignificant	Mean score value	Rank
No collateral security in sponsored loan	59.1%	24.3%	6.2%	1.2%	9.2%	4.30	1
Willful default caused by other factors	43.2%	36.4%	11.3%	2.2%	6.9%	4.23	2
Willful default induced by officially announced loan waiver schemes	56.2%	21.4%	7.6%	7.6%	7.2%	4.20	3
Misutilisation / diversion of loan	37.2%	41.5%	12.7%	6.0%	2.53%	4.1	4
Genuine viability problem of borrowing unit	54.9%	15.9%	5.9%	9.8%	13.5%	3.90	5
Lack of Technical/ Managerial expertise.	34.4%	32.2%	18.6%	5.0%	9.8%	3.66	6
Dispute among borrowers	32.4%	9.9%	12.4%	26.4%	18.9%	3.17	7

Source: Questionnaire

Table 3
Bankwise Rating Of Causes Of Occurrence Of NPAs Attributable To Borrowers

Causes of occurrence of NPAs	Rank			
	All Banks	PNB	SBI	Other Banks
No collateral security in sponsored loan	1	6	1	1
Willful default caused by other factors	2	1	5	2
announced loan waiver schemes	3	1	3	5
Mystification/ diversion of loan	4	4	4	3
Genuine viability problem of borrowing unit	5	3	7	4
Lack of Technical/ Managerial expertise.	6	5	6	6
Dispute among borrowers	7	7	2	7

Source: Questionnaire

Table 4
Rating Of General Causes Of Occurrence Of NPAs

	Percentage of respondents giving rating as						
Causes of occurrence of NPAs	Very important	Important	Average	Weak	Insignificant	Mean score value	Rank
Crop failure	80.1%	12.4%	2.4%	3.5%	1.6%	4.61	1
Slow disposal of recovery cases under various Recovery Acts	51.0%	17.1%	23.0%	3.4%	5.5%	4.23	2
Genral slow down in economy	43.5%	11.2%	17.9%	18.3%	9.1%	3.64	3
Inadequate infrastructure	14.0%	39.3%	22.3%	4.3%	20.0%	3.34	4
Frequent change in Government policies	22.3%	20.3%	21.7%	22.7%	13.7%	3.06	5
Withdraw of policies	12.7%	16.7%	27.9%	22.3%	20.4%	2.46	6
Depressed capital market	12.7	7.3%	26.0%	26.0%	28.0%	2.37	7

Source: Questionnaire

Table 5
Bankwise Rating Of General Causes Of Occurrence Of NPAs

Causes of occurrence of NPAs	Rank			
	All Banks	PNB	SBI	Other Banks
Crop failure	1	1	1	1
Slow disposal of recovery cases under various Recovery Acts.	2	2	3	2
General slow down in economy	3	3	5	3
Inadequate infrastructure	4	4	4	5
Frequent change in Government policies.	5	5	2	4
Withdrawal of policies	6	6	5	6
Depressed capital market	7	7	7	7

Source: Questionnaire

Table 6
Impact of NPAs on Different Performance Indicators

Perfomance Indicators	Percentage of respondents giving rating as						
	Very Strong	Strong	Weak	Very Weak	Insignificant	Mean score value	Rank
Profitability	95.9%	4.1%	0%	0%	0%	4.98	1
Credit deployment and investment policy	52.1%	36.4%	7.6%	1.3%	2.6%	4.38	2
Productivity	58.2%	25.8%	10.9%	0.9%	5.2%	4.31	3
Achievement of capital adequacy level	57.3%	27.7%	7.7%	1.5%	5.8%	4.31	3
Credibility of banking system	42.8%	50.6%	1.8%	1.8%	3.5%	4.24	5
Interest spread	34.2%	53.2%	6.2%	3.2%	3.2%	4.19	6
The economy	44.9%	24.8%	9.4%	1.7%	19.2%	3.82	7
Market price of the banks shares	27.4%	22.6%	13.5%	13.8%	22.7%	3.24	8
Refinance facility availability to banks	23.9%	15.1%	27.2%	14.8%	19%	3.10	9

Source: Questionnaire

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An Analysis of Trends and Patterns of Foreign Direct Investment in India.

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The present paper analyses the trends and patterns of FDI inflows in India. It has been observed that FDI is more stable component of all kinds of capital inflows and gained great importance in recent times. Top five states constitute around 65 per cent and top 10 sectors constitute nearly 72 per cent of total FDI inflows in the country. There seems a large gap between approvals and inflows in different sectors. The states which are good in infrastructure and developed have attracted much of the FDI. Mauritius is top FDI investing country followed by U.S.A, U.K., Japan and Netherlands in that order.

Introduction

One striking feature of the world economy in recent decades has been the growth of foreign direct investment (FDI), or investment by transnational corporations in foreign countries. Given the potential role which FDI can play in accelerating the growth and economic transformation, developing countries are strongly interested in attracting it. They are taking steps to improve the principal determinants influencing the locational choices of foreign direct investors. On the same lines, India is also actively participating in the race of attracting more and more FDI and opening up the economy to foreign investors. In recent years, FDI inflows to country have been increase substantially. The present paper reviews and analyses the recent trends and patterns of inflows of foreign direct investment in India.

Changing Profile of Foreign Investment in India's Capital Account

During the past decades, there is marked shift in the world capital flows. Since 1990s, there has been a steep decline in official (aid) flows and a rise in private capital movements. The official transfers into India also reveal a steady decline, while private transfers show a rise. The reasons for this shift are manifold. Apart from being part of the worldwide trend in declining official assistance following disillusionment with aid, India also embarked upon an economic reform programme aimed at transforming the controlled economy into a market-driven one. These trends are clearly visible in Table 1.1, which profiles the changing composition of India's capital account. The substantial contribution of aid towards the capital account in the 1980s decline steadily by the 1990s and is replaced by private flows. The two spikes in 1991 and 1992 are explained by the IMF loan for stabilization, adjustment and restructuring. A sharp increase in foreign investment, direct and portfolio can be observed after 1992. Commercial borrowing abroad drops during the crisis years, resuming thereafter. Migrants' remittances, a major source of capital transfers from abroad, continue to be buoyant after a short dip in 1993-94. Portfolio investment flows exceed direct investment (FDI) in the early years of liberalization. FDI catches up later, peaking in 1995-96, falling thereafter and recovered only in 2000-01 and again reached at peak in 2003-04. This is partly explained by global trends in the early 1990s when portfolio capital flows registered a sharp increase. Portfolio flow was small in the beginning of liberalization but it has increased after 1992-93, reached at its peak in 1995-96 and afterwards decline and was negative in 1998-99 due to south-east Asian currency crises and thereafter recovered in 1999-00, but was again low in 2002-03. The overall comparison of capital account shows that the proportion of foreign investment in capital flows has been increased from 1.43% in 1990-91 to 45% in 2004-04, the total flows of other components has been drastically reduced from 83.39% in 1990-91 to just 18% in 2004-05. Thus, this sharp increase in the level of foreign investment flows, however, did not lead to an equally sharp increase in the total capital account surplus, because of the off-setting declines in other components of the capital account.

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Table 1.1
Changing Composition of India's Capital Account
(percentage to total (net) capital flows)

Year	Foreign Investment			NRI Deposit (a)	External Assistance (b)	Commercial Borrowings (c)	Total (a+b+c)
	FDI	Portfolio	Total				
1990 -91	1.35	0.08	1.43	21.37	30.75	31.27	83.39
1991 -92	3.42	0.11	3.52	7.68	80.41	38.55	126.63
1992 -93	10.73	8.31	19.04	68.15	63.32	-12.19	119.28
1993 -94	6.04	36.79	42.84	12.43	19.61	6.26	38.30
1994 -95	14.35	41.76	56.12	1.88	16.67	11.25	29.79
1995 -96	45.72	58.61	104.33	23.52	18.83	27.19	69.55
1996 -97	24.72	29.02	53.74	29.36	9.72	24.96	64.03
1997 -98	35.53	18.26	53.79	11.24	9.06	39.95	60.24
1998 -99	29.8 1	-0.74	29.07	11.62	9.93	52.81	74.36
1999 -00	19.41	27.26	46.68	13.87	8.12	2.82	24.81
2000 -01	47.21	32.34	79.54	27.14	5.00	50.47	82.61
2001 -02	73.35	24.18	97.54	32.95	14.41	-19.00	28.36
2002 -03	47.32	9.20	56.52	27.99	-29.10	-15.99	-17.10
2003 -04	20.72	54.54	75.26	17.46	-13.10	-7.33	-2.97
2004 -05	17.35	27.34	44.68	-3.27	6.22	15.07	18.02

Source: Author's calculations are based on figures from RBI

Volatility of Capital Flows and FDI

The standard economic theory argues that the international private capital flows will make a major contribution to development to the extent of its stability in the recipient country. Different types of capital flows are subject, however, to different volatility patterns. In particular, the higher volatility of short-term capital indicates that reliance on such financing is highly risky (Rodrik and Velasco, 1999). An analysis of private capital flows to emerging markets during three time periods i.e. 1970-79, 1980-90 and 1991-02 suggest that FDI was the least volatile among all the components of private capital to emerging economies (see Table 1.2). The table provides the coefficients of variation for the said time periods, which shows that volatility of FDI inflows has been decreased as compared to other components of private capital, which signifies the importance of FDI as a more stable component of capital financing as compared to other components.

The similar trend is observed in the different components of capital inflows in India. The analysis of volatility of different components of capital account for the two periods i.e. 1990-91 to 1995-96 and 1996-97 to 2004-05, shows the nature of volatility (see Table 1.3).

Table 1.2
Coefficient of Variation of Net Private Capital Flows to Emerging Markets

Components	1970 -79	1980 -90	1991 -02
Net Foreign Direct Investment	.63	.33	.47
Net Portfolio Investment	.88	.88	1.33
Bank Loan & Others	.41	67.51	-1.82

Sources: Bloomfield (1968), and IMF, world Economic Outlook (Adapted from: Chapter IV, Volatility of Private Capital Flows to Emerging Markets, Anonyms)

Table 1.3
An Analysis of Volatility of Capital Inflows to India

Components of Capital Account	Average Inflows		Coefficient of Variation	
	1990 -91 to 1995 -96	1996 -97 to 2004 -05	1990 -91 to 1995 -96	1996 -97 to 2004 -05
Total Foreign Investment	2458	7843	0.98	0.57
Net Inflows of Foreign Direct Investment	769	4049	1.06	0.34
Net Inflows of Portfolio Investment	1690	3793	1.06	1.00
Commercial Borrowings	1043	1769	0.84	1.62
External Assistance	1903	174	0.38	10.37
NRI Deposits	1052	1955	0.67	0.76

Sources: Author calculation is based on data taken from Handbook of Indian Statistics (www.rbi.org.in)

Table 1.3 provides interesting findings, in the first period (1990-91 to 1995-96) the highest level of volatility is observed in the flow foreign investment (both FDI and PI) and volatility is lowest in case of External Assistance, where as, in the second period (1996-97 to 2004-05) the results are reverse, the least volatility is observed in case of foreign investment, specially it is very low in case of FDI and highest in case of External Assistance. Thus, the FDI flows seem to be highly stable in second period as compared to other components and considered as a source of strength. The ranking of volatility of components, when viewed in this fashion, appears to be as follows:

Table 1.4
Volatility of Capital Flows

Period	Sequence of Volatility
1990-91 to 1995-96	FDI = Portfolio > Com. Borrowing > NRI Deposit > Ext. Assistance
1996-97 to 2004-05	Ext. Assistance > Com. Borrowing > Portfolio > NRI Deposit > FDI

Another interesting observation states that in the first period, the average inflows of External Assistance is highest whereas the average inflows of FDI are lowest among all components of capital account. It has been 2.5 times greater than the FDI, but the sequence is reversed in second period, which shows highest average inflows of FDI and lowest average inflows of External Assistance. The FDI inflows have been more than 23 times as compared to external assistance and have grown up more than 5 times in second period. The results for the volatility of India's portfolio and FDI flows appear to be more meaningful, since they reflect the outcomes obtained under a broadly stable policy framework, subject to a steady process of liberalization and deregulations whereby controls have been slowly relaxed over the years in which many sectors have thrown open for foreign investors, with an essentially one-way direction of reforms. The goal of reforms, which were articulated in the early 1990s by the policy makers, were aimed at avoiding debt flows (particularly short term debt flows, which were viewed as being potentially destabilizing the economy) and increasing India's trade integration into the world and spurring Indian growth by harnessing the growing global FDI and portfolio flows. India appears to have adopted a 'steady approach' of numerous reforms and did not engage in 'big bang' liberalization. The literature shows that the experience with FDI flows showing strong growth rates when compared with the initial conditions lags that of other Asian countries, both in absolute terms and when expressed as per cent to GDP. The Government policy efforts are to encourage more stable capital flows in the country and discourage large capital flows that are potentially more reversible. This approach clearly shows the importance of FDI as source of financing the capital requirement of India.

Trends of FDI Inflows in India

FDI is an important avenue through which investment takes place in India. The importance of FDI extends beyond the financial capital that flows into

Table 1.5

Foreign Direct Investment in some Developing Asian Countries

Country	Foreign Direct Investment Inflows (billions of US $)				Share in World FDI Inflows (in percentage)			
	2002	2003	2004	2005	2002	2003	2004	2005
China	52.74	53.51	60.63	72.4	7.36	8.46	9.35	7.90
Hong Kong	9.68	13.62	34.04	36.89	1.35	2.15	5.25	4.03
India	3.45	4.27	5.34	6.6	0.48	0.67	0.82	0.72
Indonesia	0.15	-0.6	1.02	5.2	0.02	-0.09	0.16	0.57
Korea	2.98	3.79	7.69	7.2	0.42	0.6	1.19	0.79
Malaysia	3.2	2.47	4.62	3.9	0.45	0.39	0.71	0.43
Philippines	1.79	0.34	0.47	1.1	0.25	0.05	0.07	0.12
Singapore	5.82	9.33	16.06	20	0.81	1.47	2.48	2.18
Sri Lanka	0.2	0.23	0.23	0.27	0.03	0.04	0.04	0.03
Thailand	0.95	1.95	1.06	3.7	0.13	0.31	0.16	0.40
Asia	92	101.27	157.54	199.6	12.84	16	24.3	21.78
Developing Economies	155.53	166.34	233.23	334.3	21.72	26.29	35.98	36.48
Developed Economies	547.77	442.15	380.02	542.3	76.49	69.89	58.64	59.19
South East Europe and Commonwealth of Independent states (CIS)	12.83	24.11	34.9	39.67	1.79	3.82	5.38	4.33
World	716.13	632.6	648.15	916.27	100	100	100	100.00

Source: World Investment Report, Various Issues

the country. In addition, FDI can be a tool for bringing knowledge, and integration into global production chain, which is the foundation of a successful export strategy. Policies in post reforms period emphasized upon greater encouragement and mobilization of non-

Table 1.6

FDI Inflows in India from 1991-2005

(As per revised definition) (Amount in US$ Millions)

Year (April-March)	EQUITY		Reinvested Earnings	Other Capital	Total FDI inflows
	SIA/FIPB Route/ RBI Route/Acquisition of Shares	Equity capital of unincorporated bodies #			
1991 -1992	129	-	-	-	129
1992 -1993	315	-	-	-	315
1993 -1994	586	-	-	-	586
1994 -1995	1,314	-	-	-	1,314
1995 -1996	2,144	-	-	-	2,144
1996 -1997	2,821	-	-	-	2,821
1997 -1998	3,557	-	-	-	3,557
1998 -1999	2,462	-	-	-	2,462
1999 -2000	2,155	-	-	-	2,155
2000 -2001	2,339	61	1,350	279	4,029
2001 -2002	3,904	191	1,645	390	6,130
2002 -2003	2,574	190	1,833	438	5,035
2003 -2004	2,197	190	1,798	488	4,673
2004 -2005	3,251	111	1,816*	357*	5,535
Total	29,748	743	6,626	1,595	40,885

(i). Source, RBI's Bulletin 16th December 2005

(ii). '#' figures for equity capital of unincorporated bodies for year 2004-05 are estimate s.

(iii). '*' data are estimated

debt creating private capital inflows for reducing reliance on debt flows as chief source of external resources. FDI inflows are an indicator of foreign investor community's long term stakes in host economy. Constant and steady relaxation of FDI regulations and inclusion of more sectors under the automatic route coupled with a change in the global scenario and a strong inflow of FDI in developing countries led to an increase in FDI inflows into India. Table 1.5 shows that FDI inflows have increased by 23.60 per cent in 2005 as compared to 25.0 per cent in 2004. India's share in global FDI increased from 0.48 per cent in 2002 to 0.82 per cent in 2004 but declined in 2005 and it remains less than 1 percent of world FDI inflows. Nevertheless, FDI inflows into India continue to lag far behind such inflows in some of the developing countries of Asia particularly from China.

Table 1.5 reflects that the total FDI inflows in China are 72.40 $ billion, which is 11 times greater than India and 9.35 per cent of World FDI inflows. Though the India has adopted the policy of liberalization of capital controls in 1991, but the FDI inflows have picked up in the earnest only from the last quarter of 1993. The increase was 124% in 1994-95 compared to the previous financial year. It was further increased by 63% in 95-96 and reached at US$ 2.1 billion. Government expanded the list of industries and items eligible of automatic approval by RBI due to which the FDI inflows rose substantially and achieved a level of US $ 3557 million, highest since 1991. The investment was substantial in Engineering, Chemicals and Food & Diary products. FDI inflows declined from US$ 3557 million in 1997-98 to US$ 2462 million in 1998-99.

The FDI flows into developing countries were also sluggish in the said period. The declining trend continued in 1999-2000. In line with aligning the Indian FDI definition with the global standards, the FDI definition was widened and two more components were included in calculating the FDI (DIPP, May 2002). As a result, FDI inflows increased from 2155 US$ million in 99-00 to 4029 US$ million in 00-01. FDI inflows rise sharply in 2001-02. In terms of overall trends in FDI inflows into emerging market of developing Asia, the year 2001 was hardly encouraging (post effect of South-East Asian Currency Crisis). Apart from the calamitous of September 11,

Table 1.7
Sectors Attracting Highest F DI Approvals (Amount in Rupees Crore)

Rank	Sector	Amount of FDI approved				Cumulative inflows (Aug. 1991 to Jan. 2006)	% of FDI approved amount
		2002 -03 (April-March)	2003 -04 (April-March)	2004 -05 (April-March)	2005 -06 (April-Januar y)		
1	Fuels -						
	- Power	157	186	423	133	44,062	17.00
	- Oil Refinery	265	134	72	147	26,296	10.15
	Total (power+oil refinery)	423	320	495	280	70,358	27.15
2	Telecommunications (radio paging, cellular mobile, basic telephone services)	1057	382	451	591	42,069	16.24
3	Transportation Industry	572	845	571	246	21,564	8.32
4	Electrical Equipments (including computer software & electronics)	768	841	762	128	19,284	7.44
5	Service Sector (financial & non-financial)	1,197	883	1,715	498	17,572	6.78
6	Metallurgical Industries	84	47	445	8	15,672	6.05
7	Chemicals (other than fertilizers)	249	97	987	23	12,653	4.88
8	Food Processing Industries	159	142	100	183	9,824	3.79
9	Hotel & Tourism	119	239	57	65	4,984	1.92
10	Cement & Gypsum Products	7	1	32	2,938	4,926	1.90
Total						289,264	92.72

Source: http://www.dipp.nic.in/fdi_statistics/india_fdi_index.htm

2001, the Indian economy struggled with exogenous shocks like Gujarat Earthquake (January 2001) and the terrorist attack of Indian Parliament (December 2001).

The Indian economy overcome these shocks and received an inflow of US$ 6130 million, surpassing the previous high of 97-98. The FDI inflows declined in 2002-03 by more than US $ 1 billion. The decline was principally on account of sharp drop in net equity inflows. The declining trend continued in the next year also and the FDI inflows turn down to US $ 4673 million in 2003-04. The reversal in World FDI inflows took place and as a result of increase inflows of FDI to developing countries, the FDI inflows were risen nearly US$ 1 billion in India in 2004-05.

Sectors Wise Distribution of FDI

The sector wise distribution of FDI approvals from Aug. 1991 to Jan. 2006 is given in Table 1.7. It shows that more than 92 % of sectoral approval is capture by ten sectors mentioned in table. Power & Fuel and Telecommunications are the largest FDI approved sectors with shares of 27.15% and 16.24% respectively. Transportation Industry is third largest recipient of FDI approved with the share of 8.32%. Electrical Equipment (including computer software & electronics) 7.44% of the FDI approved during this period and occupied the fourth rank. Service sector, Metallurgical industry, Chemical, Food Processing, Hotel & Tourism and Cement & Gypsum Products were other industries, which received 2% to 6% of FDI approved during the period. With the changes in industrial policy , especially with regard to areas reserved for the public sector, lead to a huge increase in approvals for new project of Power & Fuel and Telecommunications. About 43% of total FDI approvals during the period were proposed in these two sectors. Table 1.8 provides the sectoral distribution of amount of FDI inflows actually received. Electrical Equipment (incl. computer software & electronics) occupied the top position in FDI inflows with 16.20% of total FDI inflows. Transportation Industry, Service Sector and Telecommunications are the second, third and forth recipient of FDI inflows with a very close margin of less than one percent. Power & Fuels and Chemicals hold fifth and sixth position with a share of 8.81% and 6.56% respectively. The other four sectors namely, Food Processing Industry, Drug &

Table 1.8
Sectors Attracting Highest FDI Inflows

Amount in Rupees Crore

Rank	Sector	Amount of FDI Inflows				Cumulative inflows (Aug. 1991 to Jan. 2006)	% of FDI inflows amount
		2002 - 03 (April - March)	2003 - 04 (April - March)	2004 - 05 (April - March)	2005 -06 (April - January)		
1	Electrical Equipments (including computer software & electronics)	3075	2449	3281	3893	21,103	16.20
2	Transportation Industry	2173	1417	815	948	13,280	10.19
3	Service Sector (financial & non financial)	1,551	1235	2,106	2169	12,408	9.52
4	Telecommunications (radio paging, cellular mobile, basic telephone services)	1058	532	588	905	12,218	9.38
5	Fuels (Power & Oil Refinery)	551	521	759	923	11,484	8.81
6	Chemicals (other than fertilizers)	611	94	909	1941	8,542	6.56
7	Food Processing Industries	177	511	174	175	4,694	3.60
8	Drugs & Pharmaceuticals	192	502	1343	670	4221	3.24
9	Cement & Gypsum Products	101	44	1	1,970	3,231	2.48
10	Metallurgical Industries	222	146	881	621	2,757	2.12
Total						93,938	71.52

Source: http://www.dipp.nic.in/f_statistics/india_fdi_index.htm

Table 1.9
Comparison of Sectoral Patterns of FDI Approvals and Inflows
(From Aug 1991 To Jan 2006)

Amount in Rupees Crore

Rank	Sector	Approved	Inflows	% of FDI approved amount	% of FDI Inflows amount
1	Fuels (Power & Oil Refinery)	70358	11484	27.15	8.81
2	Telecommunications (radio paging, cellular mobile, basic telephone services)	42069	12218	16.24	9.38
3	Transportation Industry	21564	13280	8.32	10.19
4	Electrical Equipments (including computer software & electronics)	19284	21103	7.44	16.20
5	Service Sector (financial & non financial)	17572	12408	6.78	9.52
6	Metallurgical Industries	15672	2756	6.05	2.12
7	Chemicals (other than fertilizers)	12653	8542	4.88	6.56
8	Food Processing Industries	9824	4694	3.79	3.60
9	Hotel & Tourism	4984	1382	1.92	1.06
10	Cement & Gypsum Products	4926	3231	1.90	2.48
11	Drugs & Pharmaceuticals (Aug 1991 -2004)	2753	3552	1.11	3.20

Source: Based on http://www.dipp.nic.in/fdi_statistics/india_fdi_index.htm

Note: Approvals and inflows are not strictly comparable because during recent years inflows also include reinvested earnings and most of the industries are under RBI Automatic Route. On the other hand, approvals include acquisition of shares which are reported separately in case of inflows without assigning them to any industry.

Pharmaceuticals, Cement & Gypsum and Metallurgical Industries, which received 2% to 4% of FDI inflows during the period. Over 70 per cent of the total FDI inflows were received by ten sectors mentioned in table 1.8. A comparison of sectoral distribution of FDI approvals and inflows reveal important difference between them. Table 1.9 makes a comparison between the two and the differences are observed not only in the amounts but also in terms of sectoral distribution. Fuels, which accounts for more than 27% of FDI approvals (ranked 1st in FDI approvals), constitutes only about 9% share in FDI Inflows (ranked 5th in FDI inflows). Similarly, Telecommunications which holds 16.24% in FDI approvals (ranked 2nd in FDI approvals), holds only 9.38% in FDI inflows (ranked 4th in FDI approvals). Share of Metallurgical industry is also far lower (2.12%) as compared to FDI approvals (6.05%). On the other hand, Electrical Equipment sector (incl. computer software and electronics) has received 16.20% of the total FDI inflows during the period, which is more than doubled as compared to the approvals (7.44%) received by the sector. It is important to note that the FDI inflows in case of Drug & Pharmaceuticals are larger than approvals. Apart from the policy related problems experienced by the two major sectors namely, power and telecommunications, the low level of realization could also be due to non implementation of a few large projects. They can most probably be treated as abandoned. A few important ones of this nature are: Parmar's Refinery project in Gujarat; Hinduja's proposal for East Coast Refinery in Orissa; Indian Oil - Kuwait Petroleum joint venture in Orissa; Swraj Paul's (Caparo) plans to set up the Kalinga steel plant in Orissa; Bezeq's large joint venture proposal with Himachal Futuristic in Himachal Pradesh; BMW proposals with Escorts and Hero group for motorcycle manufacture in the north; Hinduja's power project in Andhra Pradesh and Metdist's (Bagri) proposals for setting up a copper smelter and refinery in Madhya Pradesh. One is also not sure whether Itochu of Japan has invested and retained its proposed investment in Reliance's refinery project in Gujarat. Similar is the case with its proposed investment in the erstwhile Reliance

Polyethylene and Reliance Polypropylene for both of which approval data show Surat as the location. Such failures can prove to be substantial for some states and sectors (Rao & Murthy).

State Wise Distribution of FDI

Table 1.10
State -wise Foreign Direct Investment

(FDI) Approved by Government in India (August, 1991 to May, 2005)		
	(Rs. In Crore)	
States/Uts	Amount of Foreign Direct Investment Approved	% of total
Maharashtra	37250.67	14.75
Delhi	30843.14	12.21
Tamil Nadu	22872.18	9.06
Karnataka	19202.55	7.60
Gujarat	12748.98	5.05
Andhra Pradesh	116 58.71	4.62
Madhya Pradesh	9271.41	3.67
Orissa	8235.45	3.26
West Bengal	8016.87	3.17
Uttar Pradesh	4846.22	1.92
Total		65.32

Table 1.10 shows that in terms of FDI approvals from August 1991 to May 2005, Mahrahstra topped the list with 14.75% share in total FDI approvals, which is followed by Delhi, Tamil Nadu and Karnataka with 12.21%, 9.06% and 7.60 % share respectively, in total FDI approvals. The other states namely, Gujrat, Anadhra Pradesh, Madhya Pradesh, Orissa, West Bengal and Uttar Pradesh occupied a share between 2% to 5% in total FDI approvals. The top ten states constitutes more than 65% share in total FDI approved during the period. In terms of the destination of FDI inflows, from January 2000 to January 2006, Delhi (including a part of UP & Haryana) topped the list with a share of 25.4% in total FDI inflows (Table 6.12). Mumbai (including Maharashtra, Dadra & Nagar Haveli, and Daman & Diu) accounted 20.28% of total FDI inflows. Thus, collectively both the destination accounts nearly 50% of total FDI inflows. Karnataka, Tamil Nadu & Pondicherri, Gujarat and Andhra Pradesh Collectively holds about 21 % share of total FDI inflows. Thus, these six destinations together holds nearly 70% share of total FDI inflows in the country.

Table 1.12 analyses the share of top five sectors in different states and provides an excellent insight

Table 1.11
State Wise Break -Up For FDIInlows[1] Received
(from January 2000 to January 2006)

Ranks	RBI's Regional Office[2]	State Covered	Amount of FDI Inflows Rupess in crore	% with FDI inflows
1	New Delhi	Delhi, part of UP & Haryana	22,515.71	25.4
2	Mumbai	Maharashtra, Dadra & Nagar Haveli, Daman & DIU	17,978.76	20.28
3	Bangalore	Karnataka	6,673.68	7.53
4	Chennai	Tamil Nadu & Pondicherry	5,277.48	5.95
5	Ahmedabad	Gujarat	3,471.74	3.92
6	Hyderabad	Andhra Pradesh	2,874.56	3.24
7	Chandigrah	Chanidgarh, Punjab, Haryana, Himachal Pardesh	1,478.13	1.72
8	Koltata	West Bengal, Sikkim, Andaman & Nicobar Islnds	1,243.88	1.4
9	Panaji	Goa	487.76	0.55
10	Bhubaneshwar	Orissa	315.88	0.36
11	Kochi	Kerla, Lakshadweep	301.57	0.34
12	Bhopal	Madhya Pradesh, Chattisgarh	163.37	0.19
13	Guwhati	Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura	41.74	0.05
14	Jaipur	Rajasthan	18.76	0.02
15	Patna	Bihar, Jharkhand	2.74	0
16	Kanpur	Uttar Pradesh, Uttranchal	0.03	0
17	State not Indcated[3]		25,789.93	29.05
Total			88,635.72	100
18	Advance of Inflows		8,962.22	-
19	Stock Swapped		284.87	-
20	RBI's-NRI Schemes		589.15	-
Total FDI inflows			98,471.96	-

Source: www.indiastats.com
1 Includes 'equity capital components' only.
2 The Region-wise FDI inflows are classified as per RBI's - Region-wise inflows furnished by RBI,
3 Represents inflows through acquisition of existing shares by transfer from residents. For this, regional wise information is not provided by Reserve Bank of India.

about the sectoral share in a particular state and gives the better idea about the location aspect of FDI and relationship of a state's resource endowment to specific sector. Telecommunications holds the top position in Maharahstra and Delhi with a share of 17.20 per cent and 53.97 per cent respectively. Sixty per cent of total FDI approvals in the Maharashtra are collectively occupied by the four sectors in a range of 14% to 17%. In case of Delhi, 54% of state approval is in Telecommunications sector only, the remaining four sectors account 28% of total state approvals out of which, Transportation Industry holds 9.90% and Electrical Equipments (incl. computer software) holds 7.80% share of total state approvals. The analysis of Table 1.13 reveals that in most of the cases top two sectors hold the majority of the approved investment. Out of the 16 states given in the Table 1.12, Fuels topped the list in 11 states and holds the 2nd rank in two states (except Delhi, Punjab & Himachal Pradesh), thus constitutes the most dominant sector in approvals. In Orissa and Madhya Pradesh, the two sectors, namely, Fuels and Metallurgical together hold 94% and 84% of

Table 1.12

State Wise Distribution of FDI Approvals and Major Recipient Sectors in Each State 1991-2002

Sr. no.	State	Approved Amount (Rs. million)	Share in All-India Total	Top Five Sectors and Their Share in the State's Total		Remaining Sectors' Share (%)
				Sector	Share (%)	
1	Maharashtra	494,580	17.37	Telecommunications	17.20	29.49
				Fuels (Power & Oil Refining)	16.59	
				Transportation Industry	14.03	
				Services Sector	13.74	
				Electrical Equipment (Including Computer Software)	8.95	
2	Delhi	366,220	12.86	Telecommunications	53.97	17.30
				Transportation Industry	9.90	
				Electrical Equipment (Including Computer Software)	7.80	
				Services Sector	6.59	
				Hotel & Tourism	4.45	
3	Karnataka	236,070	8.29	Fuels (Power & Oil Refining)	30.27	22.30
				Electrical Equipment (Including Computer Software)	22.59	
				Services Sector	10.70	
				Transportation Industry	9.82	
				Metallurgical Industries	4.41	
4	Tamil Nadu	209,820	7.37	Fuels (Power & Oil Refining)	46.95	27.64
				Telecommunications	7.20	
				Services Sector	6.82	
				Electrical Equipment (Including Computer Software)	6.17	
				Transportation Industry	5.21	
5	Gujarat	185,020	6.5	Fuels (Power & Oil Refining)	55.30	16.36
				Transportation Industry	9.53	
				Chemicals (Other Then Fertilisers)	7.82	
				Telecommunications	5.94	
				Sugar	5.05	
6	Andhra Pradesh	131,660	4.62	Fuels (Power & Oil Refining)	40.70	19.42
				Electrical Equipment (Including Computer Software)	19.82	
				Metallurgical Industries	7.66	
				Drug & Pharmaceuticals	7.64	
				Paper & Pulp Product	4.77	
7	Madhya Pradesh	99,040	3.48	Fuels (Power & Oil Refining)	68.91	6.64
				Metallurgical Industries	15.47	
				Textiles (incl. Dyed, Printed)	5.16	
				Electrical Equipment (Including Computer Software)	2.05	
				Photographic Raw File	1.77	
8	West Bengal	89,350	3.14	Fuels (Power & Oil Refining)	39.54	19.76
				Chemicals (Other Then Fertilizers)	24.72	
				Electrical Equipment (Including Computer Software)	8.02	
				Hotel & Tourism	4.11	
				Telecommunications	3.85	
9	Orissa	82,290	2.89	Fuels (Power & Oil Refining)	69.19	1.45
				Metallurgical Industries	25.12	
				Transportation Industry	3.01	
				Hotel & Tourism	1.03	
				Services Sector	0.20	
10	Uttar Pradesh	49,260	1.73	Transportation Industry	37.24	21.09
				Fuels (Power & Oil Refining)	23.63	
				Electrical Equipment (Including Computer Software)	9.62	
				Chemicals (Other Then Fertilisers)	4.54	
				Food Processing Industries	3.88	

Sr. n.	State	Approved Amount (Rs. million)	Share in All-India Total	Top Five Sectors and Their Share in the State's Total		Remaining Sectors' Share (%)
				Sector	Share (%)	
11	Haryana	36,120	1.27	Fuels (Power & Oil Refining)	29.73	35.51
				Electrical Equipment (Including Computer Software)	15.33	
				Transportation Industry	8.21	
				Paper & Pulp including paper Products	6.77	
				Food Processing Industry	4.45	
12	Rajasthan	30,050	1.06	Fuels (Power & Oil Refining)	45.07	17.26
				Electrical Equipment (Including Computer Software)	20.89	
				Chemicals (Other Then Fertilisers)	8.28	
				Industrial Machinery	4.42	
				Metallurgical Industries	4.08	
13	Punjab	19,680	0.69	Textile (incl. Dyed, Printed)	36.82	10.81
				Paper & Pulp including paper Products	22.23	
				Chemicals (Other Then Fertilisers)	19.74	
				Telecommunications	5.90	
				Drugs & Pharmaceuticals	4.50	
14	Kerala	15,300	0.54	Fuels (Power & Oil Refining)	54.98	17.51
				Hotel & Tourism	9.53	
				Electrical Equipment (Including Computer Software)	6.72	
				Transportation Industry	6.02	
				Food Processing Industry	5.25	
15	Pondicherry	12,420	0.44	Fuels (Power & Oil Refining)	79.35	1.32
				Chemicals (Other Then Fertilisers)	14.96	
				Electrical Equipment (Including Computer Software)	2.88	
				Ceramics	1.01	
				Food Processing Industry	0.48	
16	Himachal Pradesh	11,740	0.41	Telecommunications Products	27.21	30.38
				Hotel & Tourism	19.77	
				Food Processing Industry	9.83	
				Chemicals (Other Then Fertilisers)	7.38	
				Fuels (Power & Oil Refining)	5.43	
	Total of the Above	2,068,620	72.66			

Source: K S Chalapati Rao & M R Murthy

total state approvals respectively as choice of these states for the said sectors are quite obvious. Similarly, Kerala and Himachal Pradesh are also obvious destinations for Hotel & Tourism, where, this sector holds 2nd rank in these states with 9.53% and 16.04% share in state FDI approvals. Table 1.13 shows that Gujarat, Tamil Nadu and Maharashtra have the largest shares in power and fuels. While in the case of Maharashtra the major Enron project did go on stream and subsequently ran into troubles, Cogentrix had to exit from the Mangalore Power Co. (Karnataka) due to opposition from different quarters. Incidentally, in the case of telecommunications, Delhi accounts for as much as 35 per cent of the total approved investment. Telecommunication is a service which requires its operations scattered to the different states but when FDI is approved initially, the circles of operations were not decided in many cases. Moreover, this sector witnessed major changes in ownership and in number of case the original foreign investors were substituted by the newer ones. Thus, it may not be appropriate to attribute telecommunication investment to any particular state or region. Therefore, one should not attach much significance to these figures. Next in importance is the transport equipment industry, which showed preference for Maharashtra, Delhi, Uttar Pradesh and the two southern states of Karnataka and Tamil Nadu. Delhi could only be providing the registered office addresses for companies in neighbouring Uttar Pradesh and Haryana. Interestingly, in case of Uttar Pradesh, DCM Toyota was taken over by Daewoo of South Korea and SRF Nippondenso (now Denso India) was turned into a subsidiary by the foreign collaborator after buying out the Indian partner. Foreign collaborators increased their stakes substantially in Maruti Udyog, Sona Steering and GKN Driveline. Incidentally, the former two have

Table 1.13
Share of Top 5 States in FDI Approvals for Different Sectors. 1991-2002

Industry/Sector	Approved Amount (Rs. million)	Share in All- India Total	Top Five States and their Share in the Sector's Total		Remaining States' Share (%)
			State	Share (%)	
Fuels (Power & Oil Refining)	774,720	27.21	Gujarat	13.21	45.46
			Tamil Nadu	12.71	
			Maharashtra	10.59	
			Karnataka	9.22	
			MadhyaPradesh	8.81	
Telecommunications	562,790	19.77	Delhi	35.12	43.68
			Maharashtra	15.12	
			Tamil Nadu	2.68	
			Gujarat	1.95	
			Himachal Pradesh	1.44	
Electrical Equipment (Including Computer Software)	279,780	9.83	Karnataka	19.06	40.95
			Maharashtra	15.82	
			Delhi	10.21	
			Andhra Pradesh	9.33	
			Tamil Nadu	4.63	
Transportation Industry	210,780	7.38	Maharashtra	33.03	21.56
			Delhi	11.04	
			Karnataka	11.04	
			Uttar Pradesh	8.73	
			Tamil Nadu	8.39	
Services Sector	184,350	6.47	Maharashtra	36.85	27.33
			Karnataka	13.70	
			Delhi	13.09	
			Tamil Nadu	7.77	
			West Bengal	1.26	
Metallurgical Industries	154,560	5.43	Maharashtra	14.46	49.00
			Orissa	13.37	
			Madhya Pradesh	9.92	
			Karnataka	6.73	
			Andhra Pradesh	6.52	
Chemicals (Other Then Fertilisers)	129,600	4.56	West Bengal	17.04	46.21
			Maharashtra	15.90	
			Gujarat	11.17	
			Tamil Nadu	5.48	
			Andhra Pradesh	4.17	
Food Processing Industries	94,760	3.33	Delhi	10.66	67.69
			Maharashtra	8.30	
			Tamil Nadu	6.42	
			Karnataka	3.82	
			Gujarat	3.10	
Paper & Pulp (including Paper Products)	35,260	1.24	Maharashtra	37.14	22.36
			Andhra Pradesh	17.81	
			Punjab	12.41	
			Haryana	6.94	
			Delhi	3.34	
Textile (incl. Dyed, Printed)	34,710	1.22	Punjab	20.88	35.81
			Madhya Pradesh	17.73	
			Maharashtra	12.62	
			Tamil Nadu	8.36	
			Gujarat	7.59	
Drugs & Pharmaceuticals	30,040	1.10	Andhra Pradesh	33.46	26.67
			Maharashtra	20.27	
			Karnataka	7.62	
			Delhi	6.79	
			Tamil Nadu	5.18	

Source: K S Chalapati Rao and M R Murthy

their registered offices in Delhi. Thus equity hikes and takeovers are probably major factors in explaining the relative high position enjoyed by the three states in this industry' (Rao & Murthy).

Table 1.14
Share of Top Investing Countries In F DIApprovals

(Amount Rupees in crore)

Rank	Country	Aug 1991 to March 2002	% of Total Approvals (till March 2002)	2002 - 03	2003 - 04	2004 - 05	2005 - 06 (April - Jan)	Cumulative Approvals (Aug 1991to Jan 2006)	% of Total Approvals (till Jan 2006)
1	U.S.A.	56,631	24.71	818	881	779	260	59,394	22.92
2	Mauritius	32,919	14.37	1,432	1,572	2,838	3,565	42,340	16.34
3	U.K.	21,396	9.34	1,819	590	1,178	1,019	26,011	10.04
4	Japan	10,794	4.71	566	345	172	73	11,955	4.61
5	South Korea	9,798	4.28	29	65	15	64	9,975	3.85
6	Germany	8,976	3.92	292	172	177	222	9,843	3.80
7	Netherlands	8,618	3.76	315	628	76	117	9,758	3.77
8	Australia	6,768	2.95	47	34	39	40	6,931	2.67
9	France	6,228	2.72	323	37	71	94	6,756	2.61
10	Singapore	7,943	3.47	330	369	578	164	9,387	3.62
FDI approvals of all Countries incl. above		229,150		7,904	6,224	8,728	7,112	259,118	

Source: Based on http://www.dipp.nic.in/fdi_statistics/india_fdi_index.htm

Sources of FDI Inflows In India

Top 10 source countries have accounted for more than a half of India's FDI approval during 1991-95, while this share increased to about 70 per cent over 2004-05. Table 1.14 shows ranking of cumulative investment approved during the period 1991 to January 2006 reveals that USA was the largest investor in India with an investment of Rs. 59394 crores. Mauritius, UK, Japan, Korea (South), Germany, Netherlands, France and Singapore follows in that order. But, the share of USA has been declining, whereas the share of Mauritius has been increasing from past few years. It has increased by more than 80% in 2004-05 compared to 2003-04, mainly due to FDI being routed through Mauritius, as it has a Double

Table 1.15
Share of Top Investing Countries In F DIInflows

(Amount Rupees in crore)

Rank	Country	Aug 1991 to March 2002	% of Total FDI Inflows (till March 2002)	2002 -03	2003 -04	2004 -05	2005 -06 (April - Jan)	Cumulative FDI Inflows (Aug 1991to Jan 2006)	% of Total FDI Inflows (till Jan 2006)
1	Mauritius	27,446	29.64	3,766	2,609	5,141	9,120	48,112	36.90
2	U.S.A.	12,248	13.23	1,504	1,658	3,055	1,705	20,183	15.48
3	U.K.	4,263	4.60	1,617	769	458	1,645	8,757	6.72
4	Japan	5,099	5.51	1,971	360	575	669	8,680	6.66
5	Netherlands	3,856	4.16	836	2,247	1,217	329	8,489	6.51
6	Germany	3,455	3.73	684	373	663	1,302	6,481	4.97
7	Singapore	1,997	2.16	180	172	822	1,013	4,186	3.21
8	France	1,947	2.10	534	176	537	63	3,259	2.50
9	South Korea	2,189	2.36	188	110	157	257	2,903	2.23
10	Switzerland	1,200	1.30	437	207	353	332	2,530	1.94
FDI Inflows of all Countries incl. above *		92,611		14,932	12,117	17,138	19,356	156,154	

Source: Based on http://www.dipp.nic.in/fdi_statistics/india_fdi_index.htm

* Includes inflows under NRI schemes of RBI, stock swapped and advances pending issue of shares.

Taxation Avoidance Treaty with India. In terms of FDI inflows into the country, Mauritius topped the list with 36.90% share of total FDI inflows, whereas USA holds the 2nd position with 15.48% of total FDI inflows during the period (Table 1.15). Thus, in terms of FDI inflows, Mauritius is way ahead from USA and emerged as top FDI investor in India. UK, Japan, Netherlands, Germany, Singapore France, South Korea and Switzerland follow in that order. South Korea, who holds 5th rank in FDI approvals with 3.85% share, is at 9th position in FDI inflows with 2.23% share. Australia, who holds 8th position in FDI approvals with 2.65% share, does not figure in top 10 countries in FDI inflows. On the other hand, Switzerland, which does not come in the list of top 10 counties in FDI approvals, holds 10th place in FDI inflows with 1.94% Share. Table 1.15 shows that FDI inflows from all countries have been increased in 2004-05.

Conclusions

India has come a long way since 1991 in so far as quantum of FDI inflow is concerned. The volatility measure of FDI suggests that it is quite permanent in nature as compared to other types of private capital flows. DIPP has released a press notice (May, 2006) and estimated an inflows of about US$ 8.3 billion for the current year 2005-06 an increase over 50% over the previous year figure of US$ 5.535 billion. But it is still at a low level, when compared with other developing nations particularly China. Mauritius and USA are two source countries which have contributed more than 50 per cent of FDI inflows in the country. In the changing era, when the emphasis is on attracting large amount of foreign investment, approvals for foreign direct investment marked a significant rise. Bulk of the investment approved is for infrastructure sectors, especially fuels & power and telecommunications. Power & Fuels occupied the top most position for a number of states. The inflows of FDI are highest in Electrical Equipment (including computer software & electricals). There seems a large gap between FDI approvals and actual inflows in different sectors. It may be due to the poor implementation, long procedural framework and non-materialization of few projects. The states which are good in infrastructure and developed have attracted much of the FDI. Simultaneously, it can not be denied that the relatively backward states could not attract much FDI both in absolute and relative terms. The sectoral patterns of FDI approvals in different states appear to be related to the importance of that sector for the state as also resource endowment. The states have to improve the overall investment climate to be able to attract investment, whether domestic or foreign. An appropriate domestic policies and macroeconomic environment will help to attract the FDI and maximising its benefit.

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Influences in Purchase of Consumer Durables: A Study of Rural Customers of Punjab

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Every business activity begins with an attempt to understand the consumer. What are the consumer's needs and desires? How do consumers behave in the market place as they seek to fulfill their needs? How can the firm develop and market need-satisfying products to generate the greatest consumer satisfaction and corporate return (Fox 1978). With urban markets getting saturated and fiercely competitive, the companies will have to look at rural markets. Corporates who have understood the psyche of rural consumers and markets and how to serve them effectively, have notched up successes. Experiments like Hindustan Lever's project Shakti, ITC e-chaupal, to n-Longue's are an attempt at wiring up Rural India. Not many companies have invested much money in research or time in the field to understand rural consumers–their values, aspirations, needs and usage habits. Little wonder then that success has eluded most corporates in rural markets. This paper is an attempt to study the general attitude of the rural consumer in relation to consumer buying behaviour and to bring out some suggestions and implications for rural marketing strategy players.

Key Words: Rural Market, Consumer Durables, Buying Behaviour Decision, and Factor Analysis.

Introduction

The rural market has been growing steadily since 1980s and is now bigger than the urban market for both FMCGs (53 per cent share of the total market) and durable (59 per cent). The annual size of the rural market, in value terms, is currently estimated at around Rs. 50,000 crore for FMCGs, Rs. 5000 crore for durables, Rs. 45,000 crore for agri-inputs and implements and another Rs. 8,000 crore for automobiles. Rural markets are vital for the growth of most companies. But despite the high rural share in these categories, the rural penetration rates are low, thus offering tremendous potential for growth. In durables, lack of infrastructure is major factor for low penetration; the average ownership is 3.84 per rural family (Kashyap, 2003).

An income dispersal projection by NCAER for 2006-07 based on a 8 per cent GDP growth (assumption) shows that the number of poor households will shrink by half to 28 million from 61 million in 1997-98, whereas the middle-income household will double and rich households will treble over the decade in rural India. This upward push, taking rural people from poverty to prosperity, will lead to greatly increased purchasing power. Today's non-consumers comprising the rural poor will enter the market as first-time buyer in large numbers. To get large share of the growing rural pie calls for a radical shift in management thinking: from gross margin to high profit, from high value sales to a game of high volumes, capital efficiency and from the one-solution-fits all mentality to market innovation. Companies will need to take the initiative if they have to succeed in the dynamic rural market.

One must also remember that there is high involvement of the rural customer in any product purchase, more so for high end products, which involves shelling out a few thousand rupees or more. The fact that perceptions, traditions and values vary from State to State, and in some cases from region to region within states, is well known. What is important is when developing a campaign aimed at the rural audience; these factors must be uppermost in the 'mindset' of the target audience for every product category in every region.

With the increasing disposable income with rural population, their per capita consumption is also increasing. They are desirous of improving their standard of living with the hygienic and reasonably high quality products and get rid of the spurious and sub-standard products being supplied to them. They deserve quality products, correct information about the product and a door step delivery (Ahmed, 1991). Bhattacharya (1998, p.17) observes that

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multinationals have largely ignored the emerging trend in Indian consumer markets; rural India. And contrary to common perception, this is not necessarily a low value–high volume of undiscerning market. For marketers, all this could point to money spinning opportunities. The flip side of this is that the options are tough. Instead of merely replicating foreign products in India, the structure of the market calls for value engineering; market research based customized products and intensive distribution system.

The behaviour pattern of rural consumers is also starkly different from region to region (Pareek, 1999, p.58). For marketers to understand it, it becomes imperative for them to visit and survey the prospective market. Visiting slums can provide the much needed experience as it has a unique consumption pattern. The village or region from where migration has taken place defines the identity. This is one reason a blanket air market strategy is not good but evaluation of consumption pattern will give insights in rural habits. Often the actual scenario in rural area is different from the brands assumption. A farmer may buy a tractor not just for his own use but also with the intention to rent to other farmers, therefore, it may become necessary to drive home the message of its brand being worthy of such case. The rural market is full of contrasts and complexities. Actual ground work is the only way to know the rural psyche.

The marketing environment governing the rural market has been undergoing vast changes in the last decade (Ramaswamy, 1995, p.37). For example, tape recorders or 'two-in-ones' were practically unheard of in the Indian rural market twenty years ago. Today, they are seen everywhere in rural areas, even in the remotest of hamlets. The spread of bicycles and subsequently two wheelers has been almost in the nature of a revolution. Even Dish-T.V. has entered the village homes in a big way. In clothing, there has been a remarkable change - preferences have shifted to blended fabrics, knitted apparels and readymade garments. Earthenware pots have yielded place to a variety of new kitchenware, plastic products and stainless steel goods have become common consumer items. The change in every sphere is visible, palpable. Recent times have seen a steady increase in the purchasing capacity of the rural people. Contrary to popular belief, the rural market is already consuming a variety of high priced consumer durables and other modern products. And more and more companies are targeting the rural market.

The rural purchase of consumer products are raising and rural market had become much easier than it had been for the pioneers in the 1940s (Rao, 1999, p.8). Rural consumer looks for quality and have high levels of purchase of branded products. Information is similar for durable products also and shows the very high levels of penetration achieved in all income categories by bicycles, transistors, mono-cassette recorders etc. The rapid graduation of more rural households into owning products like refrigerators, electric irons, motorized two wheelers etc. is a striking development.

Growth in the rural markets is perhaps the most significant feature of the marketing environment of India in recent years (Ramaswamy, 1995, p.36). The growth implies a great marketing opportunity as well as great marketing challenge. Today, the rural market of the country accounts for a large share of the expenditure on manufactured and branded consumer goods. The rural market of India is fascinating and challenging at the same time. It offers large scope on account of its sheer size and potential. And it is growing steadily. Even a gradual growth pushes up the sales of a product substantially, in view of the huge base. It is attractive from yet another angle. Whereas the urban market is highly competitive, the rural market is relatively quiet. In fact, for certain products, it is totally a virgin market. The market pioneers can certainly have reward from the rural market. Simultaneously, the market also poses several problems and hurdles. The firms have to squarely encounter them and put in a great deal of effort to get a sizeable share of the market. They must recognize that rural marketing is out and out development marketing. It is often said that markets are made, not found. This is especially true of the rural market of India. It is a market meant for the truly creative marketers.

There are some peculiar characteristics of Indian villages that make them a rough proposition for marketers. Small sizes, remoteness, poor connectivity, poor infrastructure are some serious hurdles (Jain, 1999, p.7). The five ps-product, place, price, packing

and promotion play an important part. Though all of them are important for urban markets, their features and related strategies take a different form in rural markets. Every product, which is a hit in cities, might not work in rural areas. It does not necessarily mean that the villagers are laggards, belong to a restricted zone or have traditional mentalities. Indian villagers are innovative too, and they do accept new technology introduced to them. They can be found purchasing products from shampoos to cellular phones. The only condition is that it must suit their culture and pockets. It is worth its price and must prove to be useful and easy to use. If the product has some status symbol, then villagers are willing to pay premium, for example, higher sales of 'large horse power' tractors.

Need for the Study

A review of the related relevant literature on rural marketing reveals that the studies on consumer behaviour in rural areas are not adequate. They touch one or the other aspect of rural marketing and some of the studies are not relevant in the present context. Moreover, the studies of consumer behaviour in rural areas in the Indian context are also less and concentrate more on the urban areas.

The rising income levels, especially the non-taxable agriculture income, literary levels, improved communication, infrastructural systems, ever increasing electrification, various development programmes and the priority given to the rural development in the national planning process, have helped in the significant growth of rural market potential (Charan, 1994, p.7).

Urban markets are getting saturated and to keep the growth graph intact the companies will have to look for newer markets. The rural markets are the best with similar language, culture and geographic contiguity. The rural markets offer vast marketing potential and opportunities. The media explosion has moulded the aspiration of the rural consumers to that of his urban counterpart. The market provides immense opportunities but also display intimidating challenges. It does not lend itself to be tapped through an automatic transfer of the tools and techniques of marketing which proved a success in the urban marketing context (Ramaswamy, 1995, p.37).

Research into rural markets will reveal the emerging dimension of the market. Marketing information on rural areas is needed. The researchers will reveal how far increasing investment is needed in distribution, advertising and marketing while intelligence will expand the marketing opportunities in rural areas. Through marketing research businessmen will know how to develop marketing techniques to promote their sales. The future for marketing research in rural areas will be very bright if a publicity company enters the rural areas, it can penetrate new markets. All the producers are trying to enter the rural market because the market potential is very high. The expected competition in future requires that the marketers should enter there through proper researches. Various marketing researches can reveal more problems and their solutions. Scientific marketing management for rural areas is very essential to meet the growing needs of consumption and production in rural areas, which is possible only with marketing research. To understand the attitude of rural consumers towards the consumer durables is very much relevant as these items are not purchased frequently and lot of information gathering and planning is done before purchasing because of their higher price. These products are socially visible and sign of status in rural areas unlike urban areas. They need substantial financial outlay if we take rural income into account. Consumer research in rural markets is the need of the day to know about brand preferences, attitude, perception, purchase pattern and post purchase feelings. The knowledge of purchase behaviour may be invaluable in devising market strategies–promotional programmes and media strategy. It is hoped this study will be useful to the manufacturers of durables, marketing strategists and of significant consequence to the intellectuals interested in scientific research.

Objectives of the Study

The main objective of the study is to investigate the role of different groups in influencing purchase decision of rural consumers and to bring out the suggestions and implications for rural marketing strategy.

Research Methodology

This study is based on primary data collected from the users of durable goods in villages of Punjab with

the help of well-drafted pretested structured questionnaire. A sample of 300 respondents being the users of durables was selected by following the non-probabilistic convenience sampling technique. According to the chosen methodological research approach the quantitative data was analyzed using factor analysis by using SPSS-program. The survey was conducted during the period of November 2006 to December 2006.

Previous studies on durables as well as theories of consumer behaviour have shown demographics to be a factor influencing the adoption/non-adoption of technology-based product and services (Agarwal and Prasad, 1999).

Table 1
Demographic Profile

	Number of Respondents	Percentage
Gender:		
Male	164	54.67
Female	136	45.33
Age (Years):		
18-24	58	19.33
25-34	124	41.33
35-49	67	22.33
50-64	37	12.33
65 Years and above	14	4.67
Occupation:		
Farmers	160	53.33
Micro Entrepreneurs	64	21.34
Businessmen	51	17.00
Servicemen	19	6.33
Others	6	2.00
Monthly Income:		
< Rs. 20,000	216	72
20,000 – 30,000	69	23
>30,000	15	5
Education Level:		
Below Middle Class	56	18.67
Middle Class	128	42.67
Matric	72	24.00
Higher Secondary	16	5.33
Graduate & Post Graduate	28	9.33
Marital Status:		
Married	188	62.67
Unmarried	112	37.33

Source : compiled and calculated on the basis of survey conducted by Author

The demographic characteristics of the respondents in table no.1 depict that the majority of adopter of durables (41.33 per cent) belonged to 25-34 age group, followed by 35-39 age group (22.34 per cent). This reveals that the adopters of durables are relatively young. It was further revealed that farmers comprised the maximum proportion (53.33 per cent) followed by micro-entrepreneurs (21.34 per cent) and businessmen (7 per cent). As far as the income level of the respondents is concerned, most of the respondents (72 per cent) belong to less then Rs. 20,000 income group. The table also shows that most of the respondents (42.67 per cent) are middle class followed by (24 per cent) Matric and (18.67 per cent) below middle class. This signifies here that the most of the respondents in the study are not educated and even they do not have the basic education which in turn shows the education policy in the states.

Table 2

Influence on Purchase Decision

Sr No		Most Important 5	Important Decision 4	Neither Important nor Un-important 3	Un-important 2	most unimportant 1	Weighted Average
1.	Personal Decision	198 *(66)*	74 *(24.67)*	27 *(9)*	1 *(0.33)*	0 *(0.00)*	4.56
2.	Friends Recommendations	45 *(15)*	158 *(52.67)*	63 *(21)*	24 *(8)*	10 *(3.33)*	3.68
3.	Dealer	21 *(7)*	98 *(32.67)*	134 *(44.67)*	40 *(13.33)*	7 *(2.33)*	3.28
4.	Advertisement	29 (9.67)	141 (47)	82 (27.33)	42 (14)	6 (2)	3.48
5.	Children	58 *(19.33)*	140 *(46.67)*	65 *(21.67)*	21 *(7)*	16 *(5.33)*	3.68
6.	Relatives	45 *(15)*	90 *(30)*	119 *(39.67)*	28 *(9.33)*	18 *(6)*	3.39
7.	Shop display	36 *(12)*	68 *(22.67)*	132 *(44)*	54 *(18)*	10 *(3.33)*	3.22
8.	Wife/ Husband together	145 *(48.33)*	111 *(37)*	23 *(7.67)*	11 *(3.67)*	10 *(3.33)*	4.23
9.	Fellow villagers who already own one	36 *(12)*	107 *(35.67)*	93 *(31)*	39 *(13)*	25 *(8.33)*	3.30
10.	Influence of Internet	48 *(16)*	59 *(19.67)*	28 *(9.33)*	63 *(21)*	102 *(34)*	2.63

Note: Figures in parentheses indicate percentages.

Source : compiled and calculated on the basis of survey conducted by Author

The Orthogonal rotation with varimax was run. Thereafter, the oblique rotation with the promax procedure was also run. The pattern matrix revealed the results, which were very similar to the ones given by varimax. Further, the factors correlation matrix revealed low correlations among factors. Hence, nothing much was gained by allowing the factors to correlate. Varimax rotation results were therefore, retained.

Table 3 shows the four extracted factors. The last column in the table shows communalities. It is the row sum of squared factor loadings. They show the amount of variance in a variable that is accounted for by the four factors taken together. The size of the communality is a useful index for assessing how much variance in a particular variable is accounted for by the factor solution. The large communalities indicate that a large amount of variance was accounted for by the factor solution.

Eigen values for factors 1 to 4 were 1.502, 1.462, 1.315 and 1.004. The percentage of variance explained by individual factors was shown in the penultimate row of the table. It was observed that the percentage of variance explained 1 to 4 was 16.72, 15.23, 13.75 and 11.21. The percentage of total variance was used as an index to determine how well the total factor solution accounted for what the variables together represented. The index for the present solution accounted for 56.91 per cent of the total variance. This shows that a model with 4 factors is satisfactory.

The Naming of Factors

The final step in factor analysis was the naming of factors. The labeling was intuitively developed by the factor analyst depending upon its appropriateness for representing the underlying dimensions of a particular factor. Although the process of naming the factors was not very scientific, some guidelines have been recommended (Hair et al., 1995, p.388). A factor loading represents the correlation between an original variable and its factor. The signs are interpreted just as with any other correlation coefficients. On each factor 'Like signs' of factor loadings mean that the variables are positively related and 'Opposite signs' mean that the variables are negatively related. In orthogonal solution, the factors are independent of each other. Therefore, the signs for a factor loading relate only to the factors that they appear on, not to other factors in the solution.

All the 4 factors that were extracted were given appropriate names on the basis of variables represented in each case. The names of factors, the statement labels and factor loadings have been summarized in Table 4.

Table 4

The Naming of Factors (Influence on Purchase Decision)

Factor No.	Name of Dimension	Statement Number	Statement (Factor Loading)
Factor 1	Societal Age Group	S1 S2 S3	Influence of friends (.782) Influence of relatives (.608) Influence of dealer (.521)
Factor 2	Role of Adolescent Age Group and media	S4 S5 S10	Influence of children (.772) Influence of advertisement (.624) Influence of Internet (-.440)
Factor 3	Family decision	S6 S7 S8	Wife/husband together deciding (.864) Fellow villagers who already own one (.601) Influence of shop display (-.551)
Factor 4	Own choice	S9	Yourself influence of own final choice (.763)

Source : compiled and calculated on the basis of survey conducted by Author

The 4 factors shown in Table 4 have been discussed below.

Factor 1: Societal Age Group

Table 4 reveals that the 'Societal Age Group' was the most important factor explaining 16.72 percent of the variance. 3 statements loaded on to this factor. The three statements here referred to friends, relatives and dealer. The implication was that much of the variance could be assigned to the 'Influence of friends and relatives', on the purchase decision of rural consumer. The social circle he interacts with has an important influence on the purchase decisions he makes. This can be useful to marketing managers when targeting rural consumers.

Factor 2: Role of Adolescent Age Group and Media

'Adolescent Age Group and media' is revealed to be the next important factor for rural consumers. It explained 15.23 percent of the variance. Two statements loaded on to this factor. Both these statements are highly correlated. The rural consumer is highly influenced by his next generation i.e., his children with factor loading (.772) and media i.e., the advertisements with factor loading (.624). The practical importance of this result is that the sellers should target the children as their effect on family purchase decision is discerning. They should also give increased importance to advertisement to reach to the rural consumers. Moreover, the influence of the Internet (-.440) on the purchase decision expresses that the rural people do not consider Internet Media as an important factor in their purchase decision. The marketing managers can reach the market segment called rural consumers by advertising to them and also by targeting advertisements on the younger generation for influencing family purchase decisions of consumer durables.

Factor 3: Family Decision

This factor explained 13.75 percent of the total variance. Three statements loaded on to this factor. This statement with the highest factor loading (.864) was 'Wife/husband together' followed by 'Fellow villagers who already own one' and 'Shop display' which was negatively related. The rural consumer depends upon his family for purchase decisions and husband and wife together decide about the purchase of consumer durables.

Factor 4: Own Choice

This factor explained 11.21 percent of the total variance. Only one statement 'Yourself-own final choice' loaded on to this factor. This statement has the highest factor loading (.763) amongst all the statements. Taking into account all the other influencing factors, the final decision wrests with the head of the family in rural areas.

The foregoing analysis shows that out of 4 factors extracted, the first three factors are found to explain the high percent of the total variation. These three factors are social circle, younger generation and media, and family decision. Thus, it may be inferred that the rural consumer is influenced by the society to which he belongs, that is his circle of friends and relatives. The influence of children in the purchase of consumer durables coupled with the effect of advertisement showed the relationship between children, media and purchase decisions. The rural consumer is family oriented and husband and wife takes the decisions together.

Conclusions and Implications

Rural markets form an important part of the total market of India. Consumer research in rural markets is the need of the day to understand about brand preferences, attitudes, perceptions, purchase pattern and post purchase feelings of consumers, which has been attempted here. The successful marketing strategy for rural consumers should relate to the needs and wants of the target group and must have a clear understanding of the various forces influencing purchase decision and choice behaviour.

The rural consumer is family oriented and the decisions are taken together by husband and wife. Friends, children and advertisements also influence him. Regarding family members' role in product selection, brand selection, store/dealer selection and actual purchase, the husband and wife together take most of the decisions. Others who are important in these decisions were children and elders. It has been observed that in case of washing machine wife's role is relatively more important and husband's in air cooler with children's role relatively increased in television because of the actual viewing of TV is more in their case.

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The influence of friends on rural consumers for purchase decisions shows the urban influence on rural market. The rural consumer is also influenced by friends in the village, educated farmers, teachers and big farmers/landlords. It shows the influence of social circle, education and land holdings status on him. Amongst the media influences, television advertisement, opinion leaders (word of mouth) and print media (newspapers, magazines) be incorporated in advertising strategy for promoting brands and to achieve effective product positioning.

The consumers plan their purchase in advance and actual purchase is done mostly after harvesting season and near festivals. Marketing plans incorporating advertising and promotional strategies should be formulated, as there is more disposable income after harvesting season.

The choice regarding dealer depends on location convenience, relationship, after sales service and variety of brands the dealer has. The marketing channels should be designed keeping the above factors in mind. The consumers have a preference/ loyalty towards particular brand and are not ready to buy any other type of brand available in the market when their most preferred brand for which they have already decided is not available or out of stock with the dealer. Rural consumers are not early adopters and wait to see the product being used in the urban areas before purchasing it. Low frequency of purchase and high cost incurred makes the buyer cautious in purchase decision. The promotional schemes appeal to the rural consumer like exchange offers, replacement, free after sales service, installment facility and discounts during festivals and off-season. Promotional strategies should be formulated incorporating these promotional appeals.

Thus understanding the Indian consumer is not as straightforward as it might look to Westerner on several counts. There are several agencies/ institutions involved in getting to know the Indian consumer market. Each has its own strength and limitations. Whether it be an individual product, a sector or a specific market segment, there will always be a need to have an overall perspective that is scientifically obtained. NCAER on its part has built a gigantic time-series consumption database that enables (will enable) one to have a long-term macro-view of the market. However, this is only one part of the story. Having served the basic purpose of building a fairly long time-series, supplemented by user feedback. NCAER intends to look at others areas of consumer research. There is a need to have rigorous market research that is scientific, timely and appropriately frequent in order to have a holistic understanding of the Indian consumer. Analytical brains in the corporate world could induce a series of organized micro as well as macro research from capable organizations in order to understand intricate consumer dynamics of the fast evolving market.

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Relationship between Corporate Social Responsibility and Financial Performance Revisited

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Over the last three decades, researchers have reported a positive, negative, and neutral relationship between corporate social responsibility and financial performance. Nevertheless, there remains a protracted debate regarding this relationship. The reasons for these contradictory results stem from conceptual, operationalization, and methodological differences on the definitions of social and financial performance. This study is carried out as literature revisited, covering different measures used for social responsibility and financial performance, type of relationship revealed by researchers in past and the variables affecting this relationship. After examining the results of previous research, positive relationship between the variables seems to be more logical and convincing.

Introduction

Background

Examining the relationship between corporate social responsibility (CSR) and corporate financial performance (CFP) has been a lively confrontation since Friedman's (1970) challenge that a corporation's social responsibility is to make profit. He stated, "*there is one and only one social responsibility of business - to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engage in open and free competition without deception or fraud.*" He prefers that the state addresses social problems, arguing that an executive, by taking money and resources that would otherwise go to owners, employees, and customers, and allocating them according to the will of the minority, fails to serve the interests of her or his principal. In this way, the executive imposes a tax and spends the proceeds for 'social' purpose, which is intolerable, since she or he has neither the skills nor the jurisdiction to do so.

On the other hand, there are many appeals by others for the corporate adoption of the CSR principles. Although the government is mainly responsible for addressing those issues still the contribution of corporate sector can be substantial. For example, the government sets the regulations and the minimum standards for the workplace, but a company can further improve the work environment and the quality of living of its employees. A firm cannot ignore the problems of the environment in which it operates. The poverty of a nation's citizens, political unrest, and the exhaustion of natural resources can have destructive effects on a corporation. For example, resources that are inputs in the production process and which, at the beginning of the industrial revolution were abundant are now diminishing in many regions of the planet. Naturally, this imposes an extra cost to the corporations and may force them to relocate or to cease operations. From one perspective, companies may be poorly equipped to address some of the social or environmental problems but from another perspective, no matter how poorly equipped, companies may still be best positioned to ameliorate these problems.

These different views challenged the debate and aroused additional interest in either proving or disproving the relationship between social responsibility and financial performance.

Objectives

The present study is carried out as a literature study and will be helpful for research in field of corporate social responsibility in future. Even though, the researchers have been interested in the relationship between CSR and CFP and research has been going

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on for several decades, the existence of the link between the variables is still vague. This paper aims to fill this gap on the basis of findings of majority of the studies conducted in the past. The objectives of this study are: to get familiar with the ways; how CSR and CFP are measured, the nature of relationship revealed by different studies conducted from time to time, and the control variables influencing the relationship.

The paper is divided into four major sections. The first section is Introduction; covering the background, and objectives of the study. The second describes the various ways to measure CSR and CFP. The third reveals the different types of relationship between CSR and CFP resulted from various studies conducted in the past, and control variables affecting the relationship and the fourth one discusses the overall result, and valuable suggestions for future research.

Measures

Measures of CSR

Determining how social and financial performance is associated is complicated by the lack of consensus of measurement methodology as it relates to corporate social performance (CSP). CSR, being a subjective phenomenon is very difficult to measure. CSR concept involves huge dimensions, for instance, company's concern for community, customers, environment, product, workers etc. which don't behave uniformly in all the industries for e.g. in a study conducted by Holmes (1977), it was observed that Oil, Gas and Mining Companies were especially concerned with pollution abatement while manufacturing companies were more concerned with contributing to charitable causes and educational programs. Different dimensions have been used to measure CSR in previous research. Studies showing different 'CSR measures' are shown in Table 1.

Fortune and KLD: Fortune surveys are generated on the basis of opinions of financial analysts, senior executives, and outside managers. They rate the ten biggest companies in their own industry on eight attributes of reputation; financial soundness, long term investment value, use of corporate assets, quality of management, innovations, quality of product or services, use of corporate talent, and community and environment. These ratings are combined to get a general corporate reputation index.

Kinder, Lydenberg, Domini & Company (KLD) is an independent rating company that concentrates on evaluating CSR of U.S. firms. Every company is evaluated annually on eight dimensions, viz., employee relations, product, community, environment, treatment of women and minorities, military contracting, participation in nuclear power, and involvement in South Africa (relevant during the time period of analysis) and on these dimensions, KLD index is prepared. Thus, KLD offers multidimensional evaluation of CSR. The main problem with KLD is the use of external audiences in the evaluation process. It is possible that this audience make use of flawed information, since they may have a certain image of the company in their minds (Griffin and Mahon, 1997). Griffin and Mahon (1997) noticed in their study that KLD index and the Fortune survey give comparable results.

U.S. Environmental Protection Agency (EPA) and Corporate 500 Directory of Corporate Philanthropy: U.S. EPA measures corporate social performance in terms of 'Toxic Release Inventory' (TRI) by tabulating company's discharge into water, air, and disposal of hazardous waste. TRI is a quantitative measure based on hard data. Corporate 500 Directory of Corporate Philanthropy contains data of 'Corporate Philanthropy'. Corporate philanthropy is also a quantitative measure assessing the charitable activities of large companies and then comparing them against one another.

Business Ethics Magazine: Business Ethics Magazine chooses 100 companies as 'Best Corporate Citizens'. The evaluation is done on the equal weighting of seven criteria; three-year average shareholders' return and average scores on six social measures reported by a reliable *Social Investment Research Firm*. These social measures judge the influence that a company has on its customers, employees, community, environment, minorities, and non-U.S. stakeholders. The companies that recently faced major problems related to ethics are disqualified for the evaluations (Murphy, 2002).

Social Audit: It consists of a systematic third party's effort to assess a firm's 'objective' of CSP behaviours

such as community service, environmental programmes, and corporate philanthropy. Objective data are the foundation for so-called 'behavioural' measures of CSP. However, behavioural measures based on social audits may still result in ranking, such as the measure provided by the *Council on Economic Priorities (CEP)*. Some studies have used the CEP social audit rankings of the companies' pollution records. (for e.g. Spicer, 1978).

Community Reinvestment Act (CRA) 1977 and Agence de Rating Social Environmental Sur les Enterprises (AreSE): CRA 1977 requires the regulatory authorities to examine U.S. banks so as to develop a rating, which classifies the banks into four categories: outstanding, satisfactory, needs to improve, and non-compliance. The rating is based on twelve factors, namely, communication with the members of the community to ascertain their credit needs, extent of involvement by the board of directors in CRA activities, marketing efforts to make the type of credit offered known to the community, extent of loans originated in the community, extent of bank's participation in loans to government, the geographic distribution of credit applications, approvals and denials, the record of branch office openings, closings and the extent of service provided, discriminatory or other illegal practices, participation in community development projects/programmes, practices to discourage credit applications, the institution's ability to meet the credit needs of the community, and other factors which could bear upon the extent to which the institution is helping to meet the credit needs of the community. Banks are required to make their CRA ratings publicly available and keep a file that contains public comments, if any over the last two years (Spong, 1994).

One another firm which rates the firms (French firms) is AreSE, which is a Social, and Environmental Rating Agency. The rating is based on 5 attributes of corporate social performance, namely, employees' relations, environment, shareholder relations, product quality, and relation with providers, customers and community.

Franklin Research and Development Corporation (FRDC): This is an independent agency, which assigns rates to the companies on the basis of two environmental performance measures, viz., compliance records, and other initiatives by firms to meet new demands for waste reduction and to support environment protection organizations.

Measures of CFP

Financial performance can be measured by different variables. Return on assets, return on equity, and return on sales were frequently used measures in the previous studies. Griffin and Mahon (1997) reviewed 51 studies and divided the financial measures into six categories: profitability (11 measures), growth (13 measures), asset utilization (7 measures), liquidity (6 measures), risk (12 measures), and other (20 measures; including an "other" category with 11 measures in it). Thus more than 80 measures have been used in 51 studies. Some of the researchers used a single measure of financial performance for e.g. Bowman and Haire (1975); five-year return on equity, Sturdivant and Ginter (1977); earnings per share growth, Russo and Fouts (1997); return on assets and many others but for better evaluation, more than two measures should be used for evaluating financial performance (Griffin and Mahon, 1997).

Some researchers have used the evaluations of total financial performance of companies given by '*Business Ethics Magazine*', which claims to give a complete picture of the performance of the companies based on eight financial performance measures: one year total return, three-year total return, one-year sales growth, three-year average annual sales growth, one-year profit growth, three-year average annual profit growth, net profit margins, and return on equity (for e.g. Murphy, 2002).

Literature on CSR-CFP Relationship

Previous studies showed mixed results regarding the relationship between corporate social responsibility and corporate financial performance by revealing a positive, negative and no effect/ inconclusive relationship. In this paper, 30 studies have been reviewed; their CSR criteria, CFP criteria, and findings are explained in table 2. The studies on association between environment performance and financial performance have also been covered, reason being environment performance is a surrogate of social responsibility. The studies reviewed are explained below:

Studies showing positive relationship

Moskowitz (1972) recommended fourteen firms as good for investments on the basis of their social performance. However, he never revealed what criteria he used in selecting the firms. The firms recommended by him registered a stock price increase of 7.28 percent over a period of six months (1972), in contrast to a 4.4 percent rise for the Dow-Jones (New York Stock Exchange Index) and a 6.4 percent gain for Standard and Poor's industrials during that period. Thus the findings supported the notion that socially responsible firms are good for investments, thereby revealing positive relationship between CSR and CFP. Bowman and Haire (1975) also provided supportive evidence based on the examination of 82 food-processing firms. These firms were classified by the authors based on a surrogate measure of social responsibility–proportion of prose in annual reports devoted to the topic of social responsibility. For firms with some discussion on social responsibility, the mean and median return on equity over the preceding five-years exceeded that of firms with no discussion on social responsibility. When the firms were further subdivided into low, medium and high categories performers, it was found that medium mention firms had significantly higher median return on equity than did the other two groups. Parket and Eilbert (1975) covered 80 out of 96 alleged social responsible firms from *Forbes 1971 Annual Directory, which* responded in their previous survey. They then compared the performance of those 80 firms to the Fortune 500 (minus those 80 firms) on performance criteria of return on equity, dollar net income, earnings per share, and profit margin. The researchers observed that all those 80 firms who were considered to be the most socially active showed more profits than others in Fortune list. The authors inferred that one plausible reason for this relationship is that these firms may have more efficient management.

Sturdivant and Ginter (1977) examined the relationship between social responsiveness and growth in earnings per share of 28 firms out of a total sample of 67 firms, which were classified by Moskowitz as essentially high, moderate, and low in corporate social responsibility. A comparison of these three categories on the basis of their growth in earnings per share indicated that the growth for high and moderate CSR firms were significantly higher than that for the low group companies. The researchers concluded that generally the responsibility-taking firms enjoy better economic performance. Spicer (1978) examined the relationship between pollution indices and financial indicators in investment decisions by taking sample from pulp and paper industry. Two pollution indices were constructed, one based on percentage of productive capacity adequately controlled and other on the percentage of mills adequately controlled. Five financial indicators, namely, profitability, size of firm, total risk, systematic risk, and price earning ratio were used. The study brought out that companies with better pollution control records tend to have higher profitability, larger size, lower total risk, lower systematic risk, and higher price earning ratio. Spicer concluded that there is evidence substantiating the existence of moderate to strong association between the investment value of a company's common shares and its social performance record.

Based on a sample of 131 firms, McGuire, Sundgren and Schneeweis (1988) examined the relationship between CSR and CFP. Data regarding corporate social responsibility were obtained from *Fortune Magazine Annual Survey* of corporate reputations. Accounting as well as stock market based measures of performance were used to measure firms' financial performance. Concurrent CSR and accounting based financial performance were found to be positively related to each other. However, the correlation between social responsibility and stock market based measures of performance was found insignificant. Hart and Ahuja (1994) by taking a sample of 127 Standard and Poor's 500 conducted a study with the objectives whether: emission reduction enhances operating performance (return on sales, and return on assets) in the following period?, emission reduction enhances financial performance (return on equity) in the following period?, there is any relationship between financial performance and emission reduction?, and emission reduction enhances financial and operating performance more for firms with higher emission levels than those with lower emission levels. For the purpose of the study, data regarding environmental performance and emission reduction were taken from *Investor Responsibility Research Centre (IRRC)*. Data about financial performance of selected companies were taken from *COMPUSTAT*. The researchers found that emission reduction led to improvement in operating

performance in the following year, and financial performance in the second year. It was further observed that financial performance was better for the firms with high emission levels than for firms with low emission levels.

Ameer, Feldman and Soyaka (1996) focused on the impact of firms' environmental management system and environment performance on firms' perceived riskness to investors by taking a sample of 330 Standard and Poor's 500. Two environmental variables were determined: environmental management for which each company was rated on 1-35 point scale, and environmental performance which was measured on the basis of average annual change in toxic release per unit of firm's capital. The researchers reported that 50 percent improvement in environment management led to 8.5 percent reduction in firm's perceived risk, 50 percent improvement in environment performance led to 6.5 percent reduction in firm's risk, and a combination of the above two resulted in 13.2 percent reduction in firm's perceived risk. Thus, the expenditures on both environment management and pollution control were justified on financial basis. Klassen and McLaughlin (1996) examined the impact of environmental related news (substitute of social responsibility) on the market value of a firm. For the purpose of the study, data were collected about positive and negative environmental events of 162 companies. Positive events were defined as announcement by a third party of winning of an environmental award, and negative events as crises such as oil, chemical or gas leak or an explosion. In order to measure market value of firm, total market return was estimated by using an equally weighted index of all stocks of the selected companies. Baseline stock prices were estimated by taking an average of stock prices for the period of 200 days before the announcement of such events and market value of stocks for a period of three days after such announcement was considered to know the impact of such events on market value of the firms under study. It was revealed that marketplace rewarded those firms, which invested for pollution control and affected the firms negatively for environmental crises. Clough (1997) conducted a study to know the impact of an environmental screen on portfolio performance. The authors set up an environmental screen for Standard and Poor's 500, which were normalized based on scoring, 0-100. Companies with scores below a certain level were considered to be better environmental performers, while companies above that level were viewed as environmentally irresponsible. Results showed that portfolio return for environment responsible companies was one to three percent higher than that of environment irresponsible companies.

Preston and O' Bannon (1997) utilized the data of 67 companies, rated in every survey by Fortune and COMPUSTAT to examine the type and direction of causation of the relationship between CSP and CFP. For the purpose of study, three social performance reputational ratings were selected, namely, community and environmental responsibility, ability to select and retain good employees, and quality of product and services. Financial performance was computed by using three variables, viz., return on assets, return on equity, and return on investment. The researchers brought out that financial performance either precedes or contemporeous with social performance. Russo and Fouts (1997) carried out a study to examine the impact of environmental performance on profitability of firms by taking a sample of 243 firms for the years, 1991 and 1992, which were rated by Franklin Research and Development Corporation. The researchers also checked the impact of industry growth on the relationship between the variables. Return on assets was used to measure firms' profitability. The study revealed that it pays to be green. In other words, the study brought out positive impact of firms' environmental performance on their profitability and the relationship was strengthened with industry growth. The greater the industry growth, the greater the positive impact of environmental performance on firms' profitability. Waddock and Graves (1997) carried out a study to assess the relationship and the direction of causation (whether CSR leads to better CFP or vice-versa) between CSR and CFP by covering 469 Standard & Poor's 500. KLD ratings were used as a measure of firms' social performance. CFP was measured on the basis of three performance variables: return on assets, return on equity, and return on sales. It was revealed that CSR resulted in improved CFP in subsequent years and vice versa. However, the researchers ignored investment in research and development (R&D) as control variable, which affects CSR-CFP relationship, as revealed in

a study by McWilliams and Siegel (2000). Stanwick and Stanwick (1998) focused on examining the relationship between corporate social performance and financial performance. For the purpose of the study, sample was taken from *Fortune 500* for six year period, 1987-1992. CSP was measured by using Fortune Reputation Index. Financial performance was measured on the grounds of yearly profits divided by annual sales of the firms so as to control the impact of firms' size on their profits. Correlation analysis revealed a significant positive association between CSP and profitability for all the six-year period under study. Further, regression analysis revealed that the profitability of a firm allows or encourages managers to implement programs that increase the level of corporate social responsibility.

Hall and Rieck (1998) examined the impact of positive corporate social actions on shareholders' wealth and for this purpose, data about 99 firms were collected, which announced their social actions in *'Wall Street Journal'*. Social actions were divided into four categories, viz., donations, social policy, recycling of waste, and environmental friendly activities. The findings of the study showed that depending upon the type of social actions, market value of firms was positively affected for e.g. corporate donations evoked the highest rise in share return as compared to other social activities like social policy, recycling of waste and environment friendly activities. Ruf et al. (2001) covering 496 Standard and Poor's 500, examined the impact of change in CSP on concurrent as well as subsequent change in CFP. To measure CSP, a questionnaire covering different attributes of CSR was constructed. Corporate financial performance was estimated on three grounds, namely, return on equity, return on sales, and growth in equity. The study brought out that a firm might enjoy immediate as well as long-term benefits by improving its CSP.

Murphy (2002) covered the financial performance of 100 companies in his study, which were selected in 2001 by *Business Ethics Magazine* as 'Best Corporate Citizens'. The financial performance of those 100 companies was then compared against the performance of the rest of Standard and Poor's 500. Financial performance was based on *Business Week* ranking of total financial performance. The researchers observed that the overall performance of the selected 100 companies was significantly better than that of the remaining companies in the Standard and Poor's index. Thus, the study revealed positive relationship between CSR and CFP. Simpson and Kohers (2002) examined the relationship by taking a sample of 85 U.S. banks. They classified the banks according to *Community Reinvestment Act 1977 (CRA)* criteria which requires the regulatory authorities to classify U.S. banks into four categories: outstanding, satisfactory, needs to improve, and non-compliance. This classification is based on twelve CSR factors (mentioned earlier under 'Measures of CSR'). Banks' financial performance was measured on two grounds, viz., return on assets, and loan losses to total loans. The researchers reported that banks with high CSR rating had almost twice the return on assets, and had lower losses as compared to banks with low social responsibility rating.

Tousoura (2004), carried out a study to examine the relationship between CSR and CFP by taking a sample of 422 Standard and Poor's 500. KLD ratings were used to measure CSR and three variables, viz., return on assets, return on equity, and return on sales were used to measure firms' financial performance. The study revealed that the firms may benefit from their socially responsible actions. In other words, significant positive relationship was revealed between the variables.

Studies showing negative relationship

Vance (1975) challenged the findings of Moskowitz. He observed the market performance of Moskowitz recommended firms from 1972-1975 and found that stock of all the firms declined in price and performed far below the Dow-Jones (New York Stock Exchange Index) and Standard and Poor's industrials. He also compared the financial performance of the firms which were identified as having high and low levels of corporate social responsibility in surveys reported by *Business and Society Review*. The researcher found that the financial performance of low rated CSR firms surpassed the high rated firms. In other words, the relationship between corporate social responsibility and market value of a firm was found to be negative. Wright and Ferris (1997) studied the effect of the announcements of divestments in South Africa (substitute of CSR) on the companies' stock return behaviour by covering 116 companies under different industries. The study showed that announcing divestments of South African operations affected the share prices of the companies negatively thereby revealing adverse relationship between CSR

and investors' returns. Moore (2001), covering 8 U.K. firms examined the relationship between contemporaneous social and financial performance. Social performance was measured on 16 dimensions divided into six groups, namely, employees, customers, shareholders, suppliers, community, and environment. Four financial performance measures, viz., growth in turnover, profitability, return on capital employed and earnings per share were used. The results showed negative relationship between contemporaneous social and financial performance.

Studies showing no effect/inconclusive relationship

Eight of the studies reviewed revealed no effect/inconclusive relationship. Alexander and Buchholz (1978) empirically examined the impact of corporate social responsibility on stock-market performance. The researchers covered 40 firms for a period of 5 years (1970-74). Financial performance was measured on risk adjusted return basis. For CSR, rankings were made as those used in Vance study, where the firms were surveyed and ranked by both students and businessmen. The study revealed no effect of corporate social responsibility on stock market performance. Furthermore, no significant relationship was found between stock risk levels and degree of social responsibility. Abbott and Monsen (1979) evaluated the impact of corporate social responsibility on investors' return by covering 450 Fortune 500. CSR was measured by generating *Social Involvement Disclosure (SID)* scale on the basis of content analysis[1] of the annual reports of Fortune 500. The firms under reference were divided into high and low groups on the basis of so developed SID scale. All the firms were then evaluated on the basis of their profitability. It was revealed that neither being socially involved led to increase in investors' total return, nor it was dysfunctional for investors. Martin and Bikki (1982) by taking a sample of 109 firms examined the relationship between pollution disclosure (surrogate of CSR) and economic performance of firms. Pollution disclosure index was prepared on the basis of annual reports and 10k[2] reports of the firms. Pollution index broadly covered the items of emission reduction and capital expenditure for pollution abatement. Economic performance of the firms were measured on six measures, viz., return on assets, return on equity, cash basis return on assets, cash basis return on equity, operating ratio based on total assets, and operating ratio by using owners' equity. The researchers, by using spearman's rank and product moment correlation found no significant association between the variables under study.

Aupperle, Carroll and Hatfield (1985) covered 180 firms to find out the relationship between CSR and CFP. CSP was measured by conducting a survey of chief executives of the firms under reference. Return on assets was used as financial performance measure. The researchers revealed that it was neither beneficial nor harmful for a firm to fulfill its social contract. In other words, no association was found between CSR and CFP. However, Griffin and Mahon (1997) revealed inconclusive relationship. The researchers collected a sample of 7 companies of chemical industry. CSR data were obtained from Fortune reputation survey, TRI index, KLD index, and corporate philanthropy. Financial performance was measured by using five performance measures, viz., return on assets, return on equity, 5-year return on sales, assets age, and total assets. The researchers revealed that while using Fortune and KLD measures, the relationship between CSR and CFP was found positive. Whereas, no relationship was found when TRI and corporate philanthropy were used to measure CSR. This indicates that the choice of CSR measures predetermine the relationship between the variables.

McWilliams and Siegel (2000) covering 524 firms assessed the relationship by using the same model, which was used by Waddock and Graves (1997). After introducing investment in R&D in the model in addition to other control variables, viz., type of industry, size, and risk, CSR was found to have neutral impact on profitability. D'Arcimoles and Trebucq (2002) explored the link between CSR and

1 Content analysis is a technique of gathering data that consists of codifying qualitative information in anecdotal and literary form into categories in order to derive quantitative scales of varying levels of complexity.

2 The 1969 U.S. National Environmental Policy Act required the Securities and Exchange Commission (SEC) to monitor the reporting of publicly disclosed pollution information. As a result, in 1973, the SEC demanded the inclusion of pollution information in annual reports filed with SEC. These reports are commonly known as 10K reports.

CFP among French firms. The study covered 99 French firms for the years 1998-2000. CSR was measured by computing an average of five CSP attributes rated by the firm AreSE. CFP was measured by using variables, viz., return on assets, return on equity, and cash flow on sales. It was observed that prior CFP did not lead to improved CSP in subsequent years and vice-versa. Raghav and Bhal (2003) investigated the relationship by taking a sample of 19 companies from a compendium of case studies named Business as a Social Partner published by *Confederation of Indian Industries (CII)*. CSR and CFP were measured by constructing their respective indices. CSR index was constructed on the basis of four CSR dimensions, viz., provision of infrastructure, services, programmes, and facilities. CFP index was constructed by using return on assets. The researchers brought out insignificant relationship between CSR and CFP.

The relationship found in previous studies is based on various theoretical arguments. Those who arrived at negative relationship perceive social action only in terms of cost involved in such actions because cost is a critical factor for firms' survival and can't be ignored. They stated that cost arising from social actions falls on company's bottom line and reduce their profits, and shareholders' wealth. Examples of such additional costs are contributing money to charitable institutions, purchase of environment friendly equipments, promoting community development plans, setting up customer grievances centers etc.

In contrast, other scholars who found positive association look at the long-term outcome of social actions in terms of strategic advantage by the way of cost saving and differentiation. Proponents of this view argue that inaction of business in social arena may invite additional legislation leading to higher cost of compliance that can never be recovered by businesses (Russo and Fouts, 1997). Socially responsible activities may also improve a firm's standing in the eyes of bankers, investors and government officials. Indeed, banks and other institutional investors have reported social considerations as a significant factor in their investment decisions (Spicer, 1978). Thus, high corporate social responsibility may therefore, help a firm in raising funds from the market. Modern corporate stakeholder theory (Cornell and Shapiro, 1987) contends that the value of a firm depends on the cost, not only of explicit claims but also of implicit claims. From this viewpoint, the set of claimants on firm's resources goes beyond the stockholders and bondholders to include stakeholders who have explicit claims (wage contracts) as well as implicit claims, for instance, quality service, and social responsibility. If a firm doesn't act in a socially responsible manner, parties to implicit contracts concerning the social responsibility of the firm may attempt to transform those implicit agreements into explicit agreements that will be more costly to it. For example, if a firm fails to meet its promises to government officials with regard to environment pollution control, government agencies may find it necessary to pass more stringent regulations in terms of penalties, constituting explicit contracts, to force them to act in a socially responsible manner. Thus, firms with an image of high corporate social responsibility may find that they have low-cost implicit claims than those who do not perform their social responsibility.

Whether or not a relationship exists clearly is an important issue for corporate sector. If certain social actions have a propensity to be negatively correlated with financial performance of firms, then corporates must be advised to be careful in this area. If, on the other hand, a positive relationship can be shown to exist, then corporates should be encouraged to practise such activities with increased enthusiasm or to investigate the underlying causes of this relationship. Thus, the need is to determine the nature of such relationship and in this paper an attempt has been made to generalise the findings of previous studies on CSR-CFP relationship.

Variables Affecting the Relationship (Control Variables)

Researchers have recognized certain variables, which affect the relationship between CSR and CFP. Therefore, there is a need to control such variables. These variables are explained below:

Size: Size represents total assets or total sales of the firm. Bigger companies behave more socially responsible than smaller ones. According to Orlitzky (2001), CSR is related to the firm's size since beginning, entrepreneurial strategies focus on the

basic economic survival and not on ethical and philanthropic responsibilities. When the companies grow, they get more attention from external stakeholders and as a consequence; they need to respond to the social needs (Waddock and Graves, 1997). Similarly, size of a firm can be linked with financial performance, for example, the economies of scale. A number of studies revealed the influence of firms' size on their financial performance (Russo and Fouts, 1997; Ruf *et al.*, 2001; Simpson and Kohers, 2002).

Industry: The chosen industry affects the CSR scores. Heavily manufacturing based industries have the lowest CSR scores while the less manufacturing intensive industries such as banking and financial services have the highest CSR scores (Waddock and Graves, 1997). Each company or industry differs in the area of its CSR involvement as CSR comprises of different social issues. If all the social issues were treated alike, the research would have been concentrated on one industry. However, only one fifth of the previous studies have concentrated on one industry (Griffin and Mahon, 1997). Similarly, industry type also influences firm's financial performance. It has been persistently shown that firms in a particular industry earn comparatively above normal profits by the virtue of some favourable structural characteristics (Amato and Wilder, 1990).

Research and Development (R&D): It affects CSR-CFP relationship. Many times high investments in R&D often cause enhanced financial performance later on. McWilliams and Siegel (2000) demonstrated a misspecification in the studies (showing mixed relationship) since the studies didn't take control for investment in R&D. After taking into account R&D, they found no association between the variables, signifying the impact of R&D on the relationship. Some investments in R&D can be considered as investments in CSR as well. An example could be the cosmetic companies, which have done investments in R&D in order to find ways to test cosmetics without using animals (McWilliams and Siegel, 2000). However, McWilliams and Siegel did not specify that there are different kinds of R&D and so the relationship between CSR and R&D is not always straight forward for e.g. investment in R&D to develop more effective weapons cannot be positively related to CSR.

Risk: Many studies have investigated the relationship between CSR and risk. Moore (2001) argues that socially responsible firms are well-managed firms and thus considered less risky. Moreover less risky firms are able to take part more in socially responsible activities. Lawsuits against cigarette manufacturers, and water and air polluters are some examples where low CSR caused high financial risk. Management's risk tolerance influences its attitude towards CSR activities like costs on pollution control equipment that helps avoid future costs (Waddock and Graves, 1997). Similarly, risk was found to be a significant factor in previous research that affects a firm's financial performance negatively as well as positively. (D' Arcimoles and Trebucq, 2002; Tousoura, 2004).

Conclusions

The researchers are in contradiction on social-financial performance relationship. Ruf *et al.* (2001) holds the opinion that the conflicting findings are attributed to both theoretical and methodological issues. The reasons include: lack of theoretical foundation, lack of a comprehensive systematic measure of CSR, lack of methodological rigor, sample size and composition limitations, and mismatch between social and financial variables. Majority of the reviewed studies (19 out of 30) revealed positive association, three studies with negative association, and eight revealed no effect/inconclusive relationship.

CSP is too complex to be grasped in one or two measures. This measurement problem is one of the main causes for mixed results regarding this relationship. Notwithstanding an extensive debate concerning the legitimacy and value of being a socially responsible business, the author believes that the relationship between corporate social responsibility and financial performance is positive since the studies indicating positive relationship seems to be more logical. Proponents of this line of responding predict better financial results for the companies that are performing their responsibilities towards different stakeholders as compared to socially irresponsible firms (Parket and Eilbert, 1975; Sturdivant and Ginter, 1977). This argument makes sense in the long term, because good relations with employees, suppliers and customers are essential for survival of the firm.

Actions, which support the community, can improve the company's reputation and have a positive impact on sales. Avon gained amazing and free publicity through its Cancer awareness activities, whereas Nike has suffered immeasurable damages to its image by being associated with oppressive labour practices (Ping, 2002). In a recent study by Mohr and Webb (2005), it was revealed that corporate social responsibility influences the purchase intent of the consumers positively. Besides this, it was found that CSR affected the purchase intent more strongly than the price did.

In a study conducted by Luce (2001), it was revealed that CSR makes the firm familiar, which in turn enhances organizational attractiveness among potential employees and in the information economy, employees are the most significant resource of a company. It is therefore, attracting the most competent employees is crucial. The companies, which are environment conscious, have better financial performance in terms of profitability and share prices as compared to other firms that are indifferent towards the environment (Hart and Ahuja, 1994; Shane and Spicer, 1983; Ameer, Feldman and Soyaka, 1996; Klassen and McLaughin, 1996; Clough, 1997).

Porter and Kramer (2002) argue that by acting towards a better society, companies can achieve competitive advantage. According to them, the reason why philanthropy has not been beneficial for the companies is that, most of the companies do not understand how to use philanthropy in a right way. Generally philanthropy has been confused with public relations, advertising etc. and the company's charity programs remain unfocused.

After examining the studies made in past, positive association between CSR and CFP seems to be more appealing, supporting, therefore, the view that socially responsible corporate performance can be associated with a series of bottom-line benefits but CSR measurement, is a trickier one. Some researchers call for a universally standard measure (Roman, Hayibor and Agle, 1999) but others argue that it would be difficult, nearly impossible to generate one (Simpson and Kohers, 2002). CSR means different activities for different industries, like chemical and automobile industries might be more interested in environmental performance as compared to service industries which might be interested in education and health services of their employees and community. It is unrealistic to think that [illegible] and few measures could evaluate the [illegible] performance of a company. Therefore, CSR of companies should be measured by using [illegible] measures in a consistent way in future [illegible]

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Table 1
Studies showing different 'CSR Measures'

Studies	'CSR Measure' covering dimensions	Evaluators
McGuire, Sundgren and Schneeweis (1988); Preston and O' Bannon (1997); Waddock and Graves (1997); Stanwick and Stanwick (1998)	'Fortune Magazine' has devised a scale based on eight attributes of corporate reputation.	Financial Analysts, Senior Executives, and Outside Managers
Waddock and Graves (1997); Ruf *et al.* (2001); Tousoura (2004)	KLD has developed a scale on the basis of eight attributes for CSR measurement.	External Audience
Ameer, Feldman and Soyaka (1996); Griffin and Mahon (1997)	U.S. EPA measures CSR in terms of 'Toxic Release Inventory' by tabulating company's environmental discharge into the environment.	Companies themselves give the data.
Griffin and Mahon (1997); Hall and Rieck (1998)	Corporate 500 directory of Corporate Philanthropy contains the data of 'Corporate Philanthropy' that is a quantitative measure of company's contribution to charitable institutions.	Companies themselves give the data.
Murphy (2002)	'Business Ethics Magazine' chooses 100 'Best Corporate Citizens' on equal weighting of seven CSR dimensions.	Social Investment Research Firm.
Spicer (1978)	'Social Audit' measures firm's 'objectives' of corporate social performance behaviours such as community service, environmental programs etc.	External Auditors
.Simpson and Kohers (2002)	Community Reinvestment Act 1977 requires the regulatory authorities to examine U.S. banks on the basis of twelve CSR factors.	Regulatory Authorities
D' Arcimoles and Trebucq (2004)	AreSe has developed a scale comprising of five attributes of CSR.	External Audience
Russo and Fouts (1997)	FRDC has developed a scale to measure environmental performance of the companies.	External Audience

Table 2

Studies classified by CSR-CFP Relationship

Study	CSR Criteria	CFP Criteria	Findings
Studies showing Positive Relationship			
Moskowitz (1972)	14 firms were identified as good for investment on the basis of their CSR performance.	Increase in stock price over time (6 months).	High CSR firms outperformed the Dow-Jones.
Bowman and Haire (1975)	Classification of 82 firms into high, medium and low CSR categories on the basis of number of lines devoted to CSR in annual reports of the companies.	Five-year return on equity.	Firms with medium CSR ratings performed the best and firms with low CSR ratings performed the worst, thereby indicating U shaped relationship.
Parket and Eilbert (1975)	80 firms out of those 96 firms from Forbes 1971 Annual Directory, which responded to researchers' previous CSR survey.	Return on equity, dollar net income, earnings per share, and profit margin were used to measure firms' financial performance.	80 CSR firms proved to be more profitable as compared to other Fortune 500.
Sturdivant and Ginter (1977)	28 firms were selected out of total 67 firms, which were classified as high, moderate and low in CSR by Moskowitz.	Ten-year earnings per share growth.	High and moderate CSR performers outperformed the low CSR performers.

contd...

Table 2. contd...

Study	CSR Criteria	CFP Criteria	Findings
Spicer (1978)	Two pollution indices were constructed, one based on the percentage of productive capacity adequately controlled and the other on percentage of mills adequately controlled.	Profitability, size of firm, total risk, systematic risk, and price earning ratio were used as financial indicators.	Moderate to strong association between social performance and financial indicators.
McGuire, Sundgren and Schneeweis (1988)	CSR data were collected from 'Fortune Magazine Annual Survey' of corporate reputations.	Both accounting based (return on assets, total assets, sales growth, assets growth, and operating income growth) as well as stock-market based (risk adjusted return or alpha, and total return) performance measures were used.	Positive relationship between CSR and accounting based firms' financial performance. Insignificant relationship between CSR and stock-market measures of performance.
Hart and Ahuja (1994)	Emission reduction as a substitute of corporate social performance.	Operating performance on the basis of return on sales, and return on assets and financial performance by using return on equity.	Positive relationship between concurrent emission reduction and operating performance. Positive relationship between prior period emission reduction and subsequent period financial performance.
Ameer, Feldman and Soyaka (1996)	Environmental management system and environment performance as surrogate of CSR.	Beta for risk to investors.	Environmental management system and environment performance resulted in reduction in investors' risk.

contd...

Table 2. contd...

Study	CSR Criteria	CFP Criteria	Findings
Klassen and McLaughlin (1996)	Positive and negative environment related news as surrogate of corporate social responsibility.	Total market return was worked out by using an equally weighted index of the companies under study.	Firms with positive environment related news were better in financial performance as compared to the firms with negative news.
Clough (1997)	Environmental screen was done ranging from 0-100 points.	Portfolio performance	Environment responsible companies outperformed the environment irresponsible companies.
Preston and O'Bannon (1997)	Three social performance reputational ratings, viz., community and environmental responsibility, ability to select and retain good employees, and quality of product and services were selected from 'Fortune Magazine'.	Three financial performance variables, namely, return on assets, return on equity and return on investment were worked out.	Positive relationship between contemporaneous CSR and CFP. Positive association between prior period financial performance and subsequent social performance.
Russo and Fouts (1997)	Ratings of FRDC were used as a measure of firms' environmental performance.	Return on assets was used to measure firms' profitability.	Positive relationship between CSR and CFP was found which was further strengthened with industry growth.

contd...

Table 2. contd...

Study	CSR Criteria	CFP Criteria	Findings
Waddock and Graves (1997)	KLD ratings covering eight CSR attributes were used.	Three financial performance measures, viz., return on assets, return on sales, and return on equity were used.	CSR and CFP were found to be positively related. Moreover, CSR was found to have positive impact on CFP and vice-versa.
Hall and Rieck (1998)	Announcements of social actions, viz., donations, social policy, recycling of waste, and environment friendly activities published in 'Wall Street Journal'.	Market value of firms.	Positive impact of social actions on market value of firms.
Stanwick and Stanwick (1998)	Fortune Corporate Reputation Index covering eight dimensions to measure firms' reputation.	Firms' annual profits.	Positive association between CSR and firms' profitability. Likewise, firms' profitability led to increased corporate social responsibility.
Ruf et al. (2001)	Questionnaire covering different aspects of CSR was designed.	Three performance variables, namely, return on sales, return on equity, and growth in equity were used.	Firms practicing CSR were benefited because of their social actions.

contd...

Table 2. contd...

Study	CSR Criteria	CFP Criteria	Findings
Murphy (2002)	Ratings given by 'Business Ethics Magazine' were used to measure CSR.	Financial performance was measured by using ratings given by 'Business Week Magazine'.	Performance of 100 'Best Corporate Citizens' selected by 'Business Ethics Magazine' was better as compared to other Standard and Poor's 500.
Simpson and Kohers (2002)	85 U.S. banks were classified into four categories, viz., outstanding, satisfactory, needs to improve, and non-compliance on the basis of their social performance according to CRA criteria.	Two financial performance measures, viz., return on assets, and loan losses were used.	Banks with high social performance had higher return on assets and lower loan losses.
Tousoura (2004)	KLD ratings were used.	Three financial performance variables viz., return on assets, return on equity, and return on sales were used.	Corporate social performance was found to be associated with a series of bottom-line benefits. In other words, positive relationship was revealed between CSR and CFP.

contd...

Table 2. contd...

Study	CSR Criteria	CFP Criteria	Findings
Studies showing negative relationship			
Vance (1975)	CSR firms were derived from two 'Business Society Review Surveys'.	Increase in stock price over time (6 months).	CSR firms were found not to be good for investments. In other words, negative correlation was found between CSR and stock price increase.
Wright and Ferris (1997)	Announcement of divestment of 'South African' operations as a surrogate of social responsibility.	Return to investors was used as a measure of firm' financial performance.	Negative impact of divestments on share prices of the companies. In other words, negative relationship was found between CSR and CFP.
Moore (2001)	Responsibility of business towards six groups, viz., employees, customers, shareholders, suppliers, community, and environment.	Four financial performance measures, viz., growth in turnover, profitability, return on capital employed, and earnings per share were used.	Negative relationship was found between contemporaneous CSR and CFP.

contd...

Table 2. contd...

Study	CSR Criteria	CFP Criteria	Findings
Studies showing no effect/ inconclusive relationship			
Alexander and Buchholz (1978)	Firms were ranked by students and businessmen on the basis of firms' social performance.	Return and risk on securities were used to measure firms' financial performance.	Social performance had no association with stock market performance. In addition to this, no significant relationship was found between stock risk levels and degree of social responsibility.
Abbott and Monsen (1979)	SID scale was constructed on the basis of items of CSR disclosed in annual reports of the companies.	To measure CFP, return to investors was computed.	CSR had no impact on investors' return.
Martin and Bikki (1982)	Pollution disclosure index was developed on the basis of annual statements and 10k reports of the firms.	Return on assets, return on equity, cash basis return on equity, cash basis return on assets and operating ratio based on total assets as well as based on owners' equity were used.	No significant association was found between pollution disclosure and financial performance of firms.
Aupperle, Carroll and Hatfield (1985)	Survey of chief executives of the selected firms was conducted to know companies' involvement in CSR activities.	Return on assets was used to measure CFP.	Social performance was found to have no impact on financial performance of firms.

contd...

Table 2. contd...

Study	CSR Criteria	CFP Criteria	Findings
Griffin and Mahon (1997)	CSR was measured by using TRI index, KLD index, corporate philanthropy and information disclosed by 'Fortune Magazine Annual Survey'.	CFP was measured on the basis of five variables, viz., return on assets, return on equity, 5-year return on sales, assets age, and total assets.	Relationship between CSR and CFP was found to be dependent on the measure of corporate social performance. In other words, the relationship is inconclusive.
McWilliams and Siegel (2000)	KLD ratings were used.	Return on assets, return on sales, and return on equity were used to measure firms' financial performance.	No association between CSR and firms' profitability.
D'Arcimoles and Trebucq (2002)	Ratings given by AreSE firm were used to measure corporate social performance.	Three financial performance variables, viz., return on assets, return on equity, and cash flow on sales were used.	Neither prior financial performance resulted in subsequent CSR nor did prior CSR result in improved subsequent financial performance.
Rhagav and Bhal (2003)	CSR index was constructed on the basis of four dimensions viz., provision of infrastructure, services, programmes, and facilities to measure corporate social performance.	CFP was measured on the basis of return on assets.	Non-significant association between CSR and CFP.

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Cable TV Vs Satellite TV : A Study of Customer Satisfaction

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Satellite TV and Dish TV are the two new types of service providers in the television entertainment industry. There are many similarities between Dish TV and Satellite TV. These are still in the infancy stage. Television viewers, still largely, use traditional cable networks of various service providers. The present paper highlights the relative importance of various factors and features of Dish TV (Zee Group), Satellite TV (Tata Sky), and cable TV from the customers' perspective. The paper also brings to light the relative performance of all these three types of service providers as compared by the customers on such accounts as: price, picture quality, number of channels and reliability etc. Comparison of overall level of satisfaction of the users of these services has also been made in this paper. It is observed, through this study, that the performance of Satellite networks and Dish networks are highly satisfactory in comparison to the traditional cable networks.

India is a vast country with numerous official languages and a literary history of entertainment programs that can be traced back to the birth of civilization. Over the years, the entertainment industry, the world over, has made tremendous progress in terms of technology and attaining self-sufficiency. In recent times, global players have also started to enter into this industry. This is likely to give a boost to this industry in the near future.

The boom in the satellite cable television segment has been a major cause for the high growth in the entertainment industry in India. The cable subscriber base has increased from around 0.05 million in the early 90s' to around 24.0 million in the year 2006-2007.[1] This is further estimated to increase to nearly 48.0 million by the end of the current financial year. With the rapid proliferation of channels (over 75), and eminent possibilities of the privatization of Door-Darshan, growth in this segment is projected to be rather high.

The Coming of Regional Channels

The satellite television and software (content) industries are all set to witness a surge in demand in the coming years. Increasing emergence of regional channels is the major driver behind this likely growth. Subsequent to the advent of satellite television in the early '90s, regional channels are currently the key focus areas. This is likely to offer a wider range of programs to viewers across the country. Newer inventions like dish antenna and satellite networks have also added many feathers in the bloom of this industry.

Furthermore, factors such as a decline in the prices of colour televisions and technological advancements etc., have resulted in a wider audience base. This has resulted in regional advertisers clamoring for a bit of the action. With only around 30% of all households in the country speaking Hindi, this development was inevitable.[2]

Emerging Trends and New Developments

Some of the major fast growing segments in the domestic industry include the music, cable and satellite advertising, infrastructure, exports, animation and FM. The domestic music industry was estimated at around Rs 17,000.0 million in the year 1999 and it is estimated to have grown to around Rs 30,000.0 million till the end of the last financial year. The export segment is also expected to have increased from around Rs 4,000.0 million to around Rs 10,000.0 million during the same period. Revenues from the animation segment are also expected to increase from Rs 2,200.0 million during 2001-02 to nearly Rs 4,400.0 million by the end of the current financial year.[3]

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Satellite TV Vs Cable Networks

The battle between satellite TV, Dish networks and cable TV is taking aggressive movement in India. Satellite TV, currently comes in two options - Direct TV and Dish Network - and cable TV comes through various service providers. The choice between the two pretty much boils down to preference. Some people fiercely stand behind their satellite TV; others are quick to point out how satellite is a fair weather friend and cable's more dependable.

Satellite TV subscribers have only the choice between Direct TV and Dish Network in India. However, the selection of cable TV providers is abundant. Cable subscribers can choose between basic cable and digital cable. Compared to basic cable, digital cable has many more options. One can hook up to satellite or cable TV special services like DSL Internet, TiVo, HDTV and parental controls. One will need extra equipment in order to get these services. Satellite TV's high definition reception wins one up on cable, whereby one has to pay for cable's hi-def and satellite hi-def automatically comes through. However, this advantage won't last long once all broadcasts are transmitted in HD.

The dispute between satellite TV and cable TV seems a pretty close call. The winner really depends on what kind of TV is owned and what kind of service options mean the most to the user. Each side has its own jabs for the opponent and each issue seems fairly truthful.

Customer satisfaction

Satisfaction of a need has taken a backseat as today the product varieties available in the market are infinite. Therefore, the buyers choose those goods and services which deliver value to them. Value from the point of view of the suppliers is a combination of Quality, Service and Price (QSP) called as customer value triad. Value increases with quality and service, and it decreases with price. Value can be defined as the ratio between what customers get and what he/she gives. The customer is benefited in both ways--functionally and emotionally–against costs which are in terms of money, time, energy, and psychic.

The term, 'Value' can also be described with help of following equation:

$$\text{Value} = \frac{\text{Benefits}}{\text{Costs}} = \frac{\text{Functional Benefit + Emotional Benefit}}{\text{Monetary Costs + Time Costs +Energy Costs+ Psychic Costs}}$$

As, 'Customer Satisfaction' is the customer's perception that a supplier or seller has met or is expected to meet, therefore, the keyword in this definition is perception. The customer sets some parameters like product features, quality, delivery, information provided, price, after sales services, complaint handling and customer relationship before purchase of the product. Customer sets a performance level after using the product known as perceived performance. Thereafter, the customer compares expected performance and perceived performance and decides whether he/she is satisfied or not.

Need of the Study

As the entertainment industry in India is growing at a very fast rate and till date only very few studies have been undertaken on the customer satisfaction with regard to cable TV and satellite TV. So, it was considered pertinent to conduct a study, "Cable TV Vs Satellite TV: A Study of Customer Satisfaction."

Objectives of the Study

The study has been undertaken with regard to the following specific objectives:

1) To study the customer satisfaction level of Tata sky, Zee Group and cable TV.
2) To identify key selection criteria and estimate the preference for the type of network.
3) To understand perception about dream network.

Research Methodology

The study was conducted recently for a period of three months in the current year, in the tri-city of Chandigarh (Chandigarh, Panchkula and Mohali). The whole study area was divided in three zones,

i.e., Panchkula, Chandigarh and Mohali. A list of those households having cable connection and satellite connection for the last two years (at least), was prepared in consultation with cable TV. operators and DTH operators working in the tri-city.

A random sample of 50 households for each category i.e., Tata Sky, Zee Group and Cable TV was drawn and the family heads of the selected households were personally interviewed by the researchers. However, some of the respondents in each category either did not provide complete information or were not available despite repeated visits, hence there viewpoints could not be incorporated. Therefore, the effective sample size for all the three categories turned out to be a total of 101.

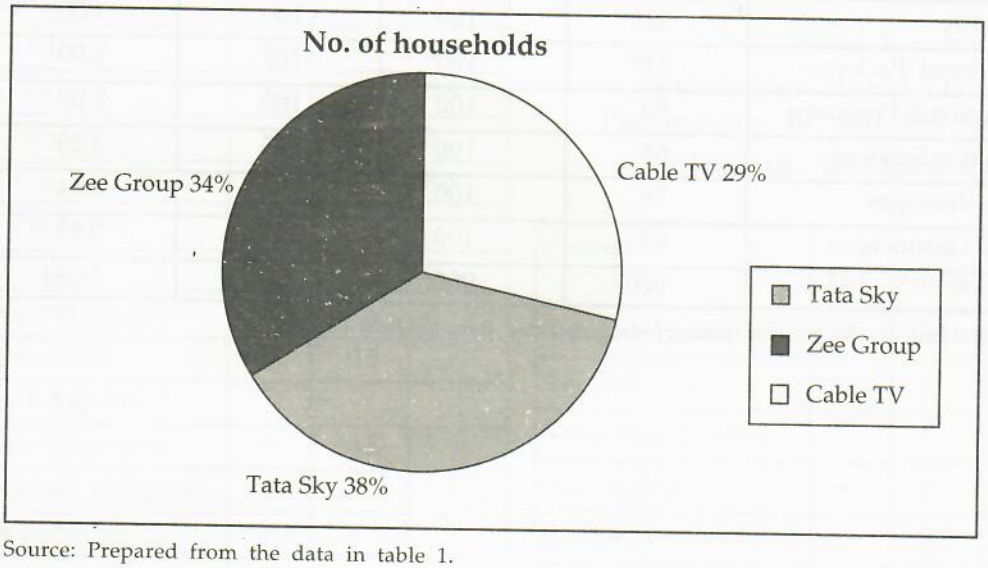
The distribution of the respondents of each category is shown in the following table 1 and the pie chart 1.

Table 1
Distribution of Respondents

Type of Network	No. of Households
TATA Sky	38
ZEE Group	34
Cable TV	29
Total	101

Source: Actual number of respondents.

Pie Chart 1
Distribution of Respondents



Source: Prepared from the data in table 1.

Research Instrument

A structured interview schedule was prepared in order to get responses and was administered to the respondents personally. The data so obtained was analyzed by using statistical tools such as percentages, mean scores, rank co-relation and chi-square test etc., to arrive at the logical conclusions.

Limitations of the Study

As the study was undertaken out of the researchers' own curiosity and cost, therefore it was undertaken with the following limitations:

1) The survey was focused only on the three main players viz., Tata Sky, Zee Group and Cable TV.
2) Sample size was restricted to 150 only.
3) Key findings are based on the feedback of the customers.

Data Analysis and Interpretation

In order to know about the level of satisfaction of the customers about the various features/factors of their selected network/cable TV, the respondents were asked the following questions.

1) **Which are the features/factors which make you satisfied about your selected TV network?**

The null and the alternative hypothesis on the factors are as below:

H_o: All factors are equally preferred.

H1: All factors are not equally preferred.

The data obtained on this account has been depicted in table 2 below

Table 2

Chi-Square Calculation for Most Liked Features

Particulars	O	E	(O-E)2	(O-E)2 / E
Picture Clarity	114	100	196	1.96
Sound Quality	108	100	64	0.64
Price	120	100	400	4.00
Reliability	110	100	100	1.00
Educational Packages	110	100	100	1.00
International Programs	90	100	100	1.00
Interactive Services	85	100	225	2.25
Sports Packages	78	100	484	4.84
No. of Channels	85	100	225	2.25
Total	900	900		18.94

Source: Calculated on the basis of primary data obtained through field survey.

The Chi-square value as calculated through the above table is 18.94 and the Chi-square table value is 15.507 at 8 d.f. and at 5% level of significance.

Thus, H◦ is rejected.

Inference: All attributes are not equally preferred. It can also be observed from table 2 that Picture clarity, sound quality, price, reliability and educational packages are more preferred factors.

2) Please rate the following parameters on 1 to 10 scale. (1 for least important and 10 for most important).

The analyses on the basis of the responses obtained have been shown in table 3.

Table 3

Comparative Analysis of the Various Parameters

Comparative Analysis

S. No.	Description	Tata Sky	Zee Group	Cable TV
A	**Performance**			
1	Picture Clarity	9.5	8.5	6.5
2	Sound Quality	8.5	8	7.5
3	No. Channels	9	8	5
4	Reliability	8	7.5	8.5
B	**Economy Factor**			
1	Price	8	9	5
2	Income and Revenue	8.5	7.5	7
3	Carry on Cost	9	8.5	5
C	**General Aspects**			
1	Interactive Services	8	8	9
2	Educational Packages	8.5	8	7.5
3	Sports Packages	9.5	8	7
4	International Programs	8	8.5	7.5

Source: Calculated on the basis of data obtained through field survey.

Inferences

Performance –From the above tables it is observed that Tata Sky is rated highest on Picture clarity, sound quality and number of channels whereas Cable TV is rated highest on reliability.

Economy Factor: Price of Zee Group is observed to be highest followed by Zee Group while in terms of income, revenue and carrying cost: Tata Sky is considered to be the best.

General Aspects: On account of the factor, 'Interactive Services', cable TV is rated highest whereas on account of 'Educational Packages', 'International programs' and 'Sports Packages' Tata Sky gets the highest scores and hence also the rank.

3) What is your level of satisfaction with the overall performance of your selected network?

H◦: There is no relation between satisfaction level and the type of the network selected.

H1: There is a relation between satisfaction level and the type of the network selected.

The level of overall satisfaction with respect to the selected network is shown in Table 4 and Bar Diagram 1 below. Various other tables and diagrams have also been prepared to further clarify the observed inferences.

Table 4

Satisfaction About Overall Performance of Selected Network

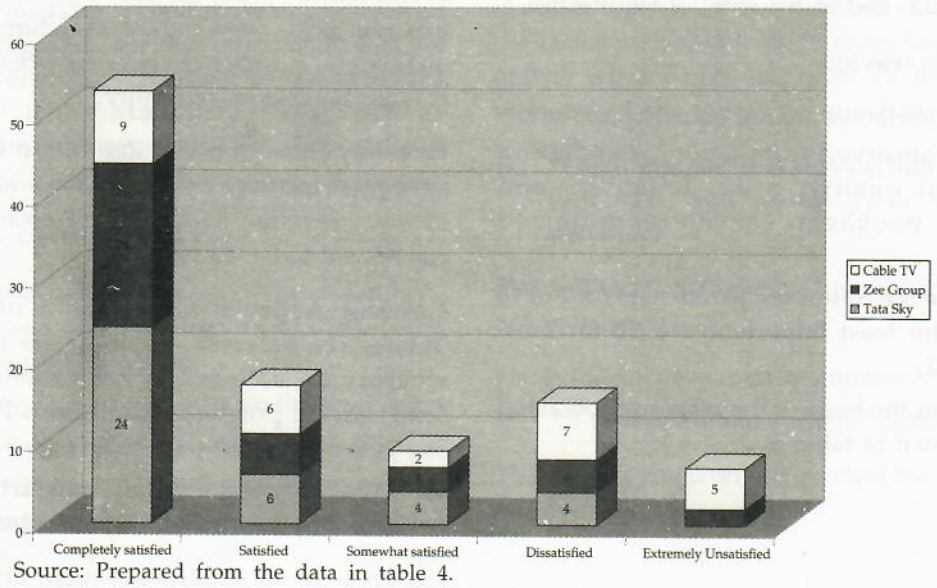
Type of the Network

Description	Tata Sky	Zee Group	Cable TV	Total
Completely satisfied	24	20	9	53
Satisfied	6	5	6	17
Somewhat satisfied	4	3	2	9
Dissatisfied	4	4	7	15
Extremely Unsatisfied	0	2	5	7
Total	38	34	29	101

Source: Primary Data obtained through field survey.

Bar Diagram 1

Level of Satisfaction About Overall Performance of Selected Network



Source: Prepared from the data in table 4.

Table 5

Chi-square Calculation for Satisfaction level

Cell	O	E	$(O-E)^2/E$
(1,1)	24	23.04	0.04
(1,2)	20	15.84	1.09
(1,3)	4	9.12	2.87
(2,1)	16	11.04	2.23
(2,2)	5	7.59	.884
(2,3)	2	4.37	1.285
(3,1)	4	3.84	0.006
(3,2)	3	2.64	0.049
(3,3)	1	1.52	0.178
(4,1)	4	6.72	1.10
(4,2)	3	4.62	0.568
(4,3)	7	2.66	7.08
(5,1)	0	3.36	3.36
(5,2)	2	2.31	0.042
(5,3)	5	1.33	10.127
Total			**30.909**

Source: Calculated from the table 4 above.

From the above table it is observed that the value of Chi-square calculated is 30.909 and the table value is 15.50 at 8 d.f. and 5% level of significance. Thus, H_0 is rejected.

Inference: There is a relation between satisfaction level and the type of the network used.

Table 6

Overall Performance of Selected Network

Type of Network	Ranks									
	5 (Completely satisfied)		4 (Satisfied)		3 (Somewhat satisfied)		2 (Dissatisfied)		1 (Extremely Unsatisfied)	
	No. of Resp	Fx (noxwt)	No. of Res	Fx (nox wt)	No. of Resp	Fx (nox wt)	No. of Resp	Fx (noxwt	No. of Resp	Fx (noxwt
Tata Sky	24	120	6	24	4	12	4	8	0	0
Zee Group	20	100	5	20	3	9	4	8	2	2
Cable TV	9	45	6	24	2	6	7	14	5	5
Total	**53**	**265**	**17**	**68**	**9**	**27**	**15**	**30**	**7**	**7**

Source: Compiled from primary data obtained during the study.

***Inference*:** From the above table it can be observed that generally the users of all types of networks are reasonably satisfied with its overall performance. However, on account of the level of satisfaction, it is observed that in case of Tata Sky and Zee Group more number of users are highly satisfied as compared to the subscribers of traditional cable networks.

In order to find out the overall satisfaction level ranks for all the three networks, the data was further analysed with the help of table 7 below.

Table 7

Satisfaction Level Ranks (weighted Average)

Network	Weighted Average	Rank
Tata Sky	4.32(164/38)	1
Zee Group	4.09(139/34)	2
Cable TV	3.24(94/29)	3

Source: Compiled from the data in table 6 above.

Note: Weighted Averages have been compiled by dividing the total scores of all the levels of satisfaction of a particular type of network by the total no. of respondents of that network.

Inference: Tata Sky users are the most satisfied customers followed by Zee Group. Cable TV network subscribers get the last rank as far as the overall satisfaction of the performance of the network is concerned.

Dream Network

In order to know about the future demand of the various networks, the respondents were asked the following question.

4) If you want to use the other network, which one will you select?

The responses obtained on this question have been depicted in table 8 and bar diagram 2 below.

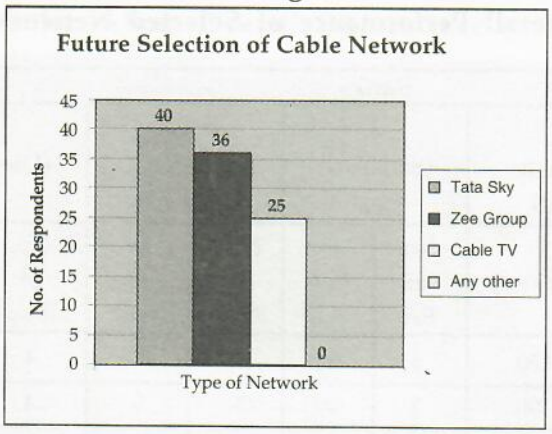
Table 8

Future Selection of Network

Description	No. and Percent
Tata Sky	40
Zee Group	36
Cable TV	25
Any other	0
Total	101

Source: Primary Data.

Bar Diagram 2



Source: Prepared from the data in Table 8.

Inference: From the table 8 and the bar diagram 2, it is observed that Tata Sky is the most preferred dream network.

Conclusions

Satellite TV and Dish TV are the two new types of devices available for airing television programs. Out of the various factors preferred by the television viewers for selecting a particular type of network, the factors like picture clarity, sound quality, price of network, reliability and educational packages are the most preferred ones. The network, 'Tata Sky' is rated highest on picture clarity, sound quality and the number of channels. Cable TV is considered to be most reliable one. Price of Zee Group is highest followed by Tata Sky whereas Cable networks are the most economic ones.

On account of the factor, 'Interactive Services', cable TV is rated highest whereas on account of 'Educational Packages', 'International programs' and 'Sports Packages' Tata Sky gets the highest scores and hence also the rank. Generally, the users of all types of networks are reasonably satisfied with its overall performance. However, on account of the level of satisfaction, more number of users of Tata Sky and Zee Group are highly satisfied as compared to the subscribers of traditional cable networks. Tata Sky users are the most satisfied customers followed by Zee Group. Cable TV network subscribers get the last rank as far as the overall satisfaction of the performance of the network is concerned.

The network Tata Sky is observed to be the most preferred one and the same may be considered as the future dream network of the television.

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Outcome Budgeting as a Tool of Fiscal Management

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Over the last decade, there has been tremendous growth of Central Government expenditure, in social sectors. The Government, as a welfare state, has been investing billions of rupees in numerous socio-economic projects and welfare programms, but has not been able to extract the maximum benefits, which are evident from the sorry state of productivity and ineffectiveness of these programmes. In this context, outcome budgeting is a technique which seeks to improve productivity and effectiveness of public expenditure within the framework of pre-determined national goals and priorities. The present views of the author examines the mechanism of outcome budgeting in contrast to the traditional practices towards a better fiscal management. The author urges that in order to make this system effective, full co-operation of State goverments and an integrated approach is a must.

Outcome budgeting, originally conceived and introduced in the Union Budget 2005, is one of an innovative and bold step towards better fiscal management. It is a technique which deviates from traditional financial budgeting and seeks to raise productivity and effectiveness of public expenditure particularly in the social and welfare sectors. This technique, if properly adopted, has immense potential for application in corporate budgeting as a tool of effective managerial planning and control. Even in the areas of public economics, there is substantial corporate interest as public expenditure and its results create new business opportunities for the private corporate sector. The success of public-private partnership programmes involved in public works greatly depends upon the outcomes of public expenditure.

Outcome budgeting in contrast to the traditional practice of obtaining financial estimates of revenue and expenditure, is a wide-ranging exercise in which expenditure allocations of various government ministries and departments are translated into their expected economic, social or welfare impact. This expected impact or outcome serves as a benchmark or a reference point for a performance budget to be presented subsequently in the post-expenditure phase.

Conceptually, outcome budgeting is not merely a statement of expected or planned outcomes of various public expenditure allocations. It is a pre-expenditure instrument taken from the modern kit of public finance through which the various spending units of the government get an opportunity to develop their vision, rework their operating mechanisms, redesign delivery systems, evaluate alternative methods of executing public projects and finally decide the best possible alternative with a view to maximize the productivity and effectiveness of public expenditure in the context of pre-determined national goals and priorities. This pre-expenditure budgeting complements the post-expenditure scrutiny and is expected to provide a better monitoring mechanism and a more rational basis for performance evaluation of government departments and their developmental, regulatory and welfare programmes.

Ostensibly, the primary motive of the government to adopt outcome budgeting is to ensure that the socio-economic and welfare programmes of the government show the desired results. Outcome budgeting, logistically, is the right starting point in this direction. An outcome budget prepared on the basis of formal inputs received from various ministries and departments obliquely obtains a commitment from such fund-receiving agencies to produce the budgeted or planned outcomes. In the process, it is hoped that such agencies would streamline their delivery models and mechanisms and make efforts to realise the budgeted commitments. Once the expected and actual outcomes of public expenditure programmes come within the domain of public scrutiny and accountability, the various government agencies get under a pressure to perform and deliver.

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The introduction of the outcome budgeting system appears to have been triggered by the dismal progress of some of the high-outlay, poverty-reducing and welfare-promoting programmes and infrastructure development programmes recently launched by the government. The welfare-oriented programmes include Sarv Shiksha Abhiyan, Mid-day Meal Scheme, Food-for-Work Programme (to be eventually converted into Rural Employment Guarantee Scheme), Integrated Child Development Programme and the ambitious Bharat Nirman Programme (BNP). BNP comprises six components viz., one crore hectares of land under assured irrigation, road connectivity to all villages with population of more than 1000, construction of 60 lakh dwelling units for the poor, drinking water for 74,000 uncovered habitations, electricity to 1.25 lakh households and telephone connectivity to 67,000 villages. Allocation for the programme was Rs.12,160 crore in 2005-2006 which was raised by 54 per cent to Rs. 18,696 crore in 2006-2007. In the infrastructure sector, the thrust is on the power, road, oil and gas sectors. The annual plan outplay on power sector rose from about Rs.40,000 crore in 2005-2006 to Rs.52,000 crore in 2006-2007. In the road sector, the target is to widen highways to 4/6 lanes over 5846 km in the Golden Quadrangle stretch by 2006 and 7300 km in the NSEW Corridor by 2007. In the oil and gas sectors, the emphasis is on the expansion of existing production capacity. The Infrastructure Development Programme has the target to commission at least nine projects with public-private partnership.

In the social sector including social services and rural development, there has been tremendous growth of Central Government expenditure over the last 11 years. Expenditure on this segment has risen about 5 times, from about Rs. 18240 crore in 1995-96 to Rs. 87600 crore in 2007. The General Government expenditure (covering both Central and State governments) social sector expenditure constituted about 6 per cent of GDP in 2006-07. One is disheartened to note that in spite of significant rise in the absolute expenditure on social sector, the social expenditure to GDP ratio has remained sticky between 5.5-6.5 per cent. The major social segments cover education, sports, youth affairs, health, family welfare, water supply, housing, information and broadcasting, welfare of SC/ST and OBC, labour and employment, social welfare and nutrition.

At the macroeconomic level, total expenditure covering both revenue and capital expenditure, the expenditure-to-GDP ratio stood at 27.2 percent and absolute value of expenditure totalled about Rs.1,11,5000 crore in 2006-2007. Application of outcome budgeting to this expenditure spread over thousands of heads of expenditure is, of course, a complex task. Outcome budgeting initially has been developed in the context of social expenditure and it is hoped that the concept, in subsequent stages, will be extended to cover other areas of development and regulation and would include non-plan expenditure as well. If the application of outcome budgeting does not get comprehensive within a reasonable period of time, it would result in inter-departmental discrimination and conflicts and might precipitate a crisis in governance.

The seriousness of the government in implementing a comprehensive and scientific outcome budgeting system would be tested only with time. The system does not merely provide for the impact equivalences of given financial allocations or anticipated expenditures. It first involves the establishment of performance standards of various government spending units within the framework of an overall governance standard and then proceeds to evaluate their performance through a subsequent Performance Budget. Establishment of standards and evaluation of performance is beset with formidable measurement problems. Such problems are confronted most commonly in such qualitative areas as health awareness, flood prevention, educational progress, law and order, social security, access to justice and family welfare. Such variables have to be brought to some rational measurement scales so that these could be quantified for the sake of visibility, comparison and budgeting. Unfortunately, no such exercise has been conducted so far.

The new budgeting system would turn out to be farcical if efforts are not made to vastly improve the delivery mechanisms for public goods and services to masses. Improvement in this area requires a wide range of concomitant measures to improve the standards of governance. Given the present traditional, inefficient, unresponsive and bureaucratic setup laden with corruption, apathy towards work and performance and general resistance to improvement, the task of raising

governance standards and improving delivery mechanisms appears stupendous.

Over the last a number of decades, the government as a welfare state, has been investing year after year billions of rupees in a wide range of socio-economic projects and welfare programmes. The cumulative result as at present is that the country in spite of being the fourth largest economy in the world in purchasing power parity (PPP) terms, has about one-third of population living on less than $ 0.2 a day – a level which is among the lowest in the emerging market economies. Since the beginning of economic reforms in 1991, the economy has been confronted with the queer phenomenon of jobless growth. At present, more than 45 percent of the rural households are estimated to be in debt trap and about 30 percent of the urban population is compelled to live in slum areas for poverty reasons. These statistics speak of the sorry state of productivity of socio-economic projects and welfare programmes of the government. Unless the public expenditure programmes are rightly focussed and professionally administered, outcome budgeting may turn out to be an annual statistical ritual only.

The outcome budgeting system to be really successful at the national level, requires full co-operation from the state governments. The centrally sponsored programmes based on plan allocations, are, in fact, implemented by the state governments under central funding and monitoring. If the states show genuine concern and seriousness in making their public expenditure programmes really work for the masses, they will have to gear up, as a pre-requirement, for the adoption of the new budgeting system as early as possible. In this effort, they not only have to meet the technical requirements, but also show the necessary political will. In the present federal setup, how the Centre pressurizes or persuades the state governments to bring their budgeting within the domain of public accountability under the new system, is a serious question mark. The lead will, of course, have to be taken by the Central Government. As a facilitator and a prompter, it must, in the initial steps, make arrangements for the training of officers responsible for fiscal administration in the new area of outcome budgeting. In this regard, institutions like National Institute of Public Finance and Policy, Institute of Government Accounts and Finance, Reserve Bank of India, Indian Institute of Public Administration, National Institute of Financial Management and a few universities specializing in the areas of public finance and public systems management can provide key training inputs.

Adoption of outcome budgeting as a system, no doubt, signals the dawn of the era of budgetary reforms in the country. **What is really required is an integrated budgeting system in which Outcome Budgeting has effective backward integration with the General Budgeting and forward integration with Performance Budgeting both at central and state levels. This can be ensured through a uniform central legislation. Good systems which are logically consistent and universally proved need not unnecessarily be made the subjects of debate.** If sincerity of purpose exists, and efforts in the desired direction are matching and adequate, the system of outcome budgeting can turn out to be an effective instrument of growth, productivity and distributive justice. If not, the new initiative is bound to be called a populist measure.

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Economic Value Added and Traditional Performance Measures: A Review of Academic and Empirical Literature

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The role of a manager is to maximise the wealth of shareholders by the efficient allocation of resources. With increasing pressure to operationalise, this objective or to deliver shareholder value, there has been a renewed emphasis on devising new measure of corporate financial performance. One recent innovation in the field of internal and external financial performance measurement is trade marked variant of residual income known as Economic Value Added (EVA). This paper attempts to provide a review of research studies on EVA's conceptual underpinnings and its empirical and theoretical analysis and traditional performance measures with the aim of finding the relationship between shareholders value and various performance measures and plugging the gap, if any. The result of this paper offers that according to practitioners EVA dominates traditional measures in explaining stock return and firm value; but academician found traditional measures too equally important in explaining market value of shares.

Key words: Economic Value Added (EVA), Accounting Adjustments, Traditional Performance Metrics, Ratio Analysis.

An established financial cliché is that the primary role of managers is to maximise the wealth of shareholders by the efficient allocation of resources. In order to operationalise this objective, shareholder wealth is traditionally proxied by either standard accounting magnitudes (such as profits, earnings and cash flows from operations) or financial statement ratios (including earnings per share and the returns on assets, investment and equity). This financial statement information is then used by managers, shareholders and other interested parties to assess current firms performance, and is also used by these very stakeholders to predict future performance. Further, under the semi-strong form of the efficient market hypothesis, the publicly available information contained in these variables is readily interpreted by the market, and thereby incorporated into future stock prices.

Unfortunately, the empirical literature to date suggests that there is no single accounting-based measure upon which one can rely to explain changes in shareholder wealth (Chen and Dodd, 1997; Riahi-Belkaoui, 1993; Rogerson, 1997; Lehn and Makhija, 1997). For years, investors and corporate managers have been seeking a timely and reliable measurement of shareholders' wealth. With such a measure, investors could spot over or under priced stocks, lenders could gauge the security of their loans and managers could monitor the profitability of their factories, divisions and firms.

One professedly recent innovation in the field of internal and external performance measurement is a trade-marked variant of residual income (net operating profits less a charge for the opportunity cost of invested capital) known as economic value-added (EVA). As a starting point its developer and principal advocate, US-based business consultants Stern Stewart and Co. (hereafter referred to as Stern Stewart) (Stewart, 1991, p. 66), argue: "Earnings, earnings per share, and earnings growth are misleading measures of corporate performance, the best practical periodic performance measure is economic value-added. (EVA) is the financial performance measure that comes closer than any other to capturing the true economic profit of an enterprise. EVA also is the performance measure most directly linked to the creation of shareholder wealth over time".

Support from EVA has also come from Fortune has called it "today's hottest financial idea", "the real key to wealth creation" (30th September 1993) and "A new way to find bargains" (9th December, 1996), Peter Druker (1995) in the Harward Business Review

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suggests that EVA's growing popularity reflects, amongst other things the demand of the information age for a measurement of the total factor productivity. Finally, there has been wide spread adoption of the EVA by the security analyst since "instead of using dividend discount approach, the model measure value form the point of the firm's capacity for on going wealth creation rather than simply wealth distribution" (Herzberg, 1998, p. 45).

The objective of the present paper is to review the theoretical underpinnings of EVA, and to reconcile the often-competing clash as to its empirical superiority over other traditional accounting-based measures of the firm performance. The paper is further divided into three sections. After having the brief introduction of EVA, in the first section, the second section outlines the concept of EVA, calculation of EVA and adjustments involved in calculation of EVA and their implications. The third section reviews the extant empirical literature within the common framework. The final section contains some brief concluding remarks and direction for future research.

The Concept of Economic Value-Added (EVA)

The origin of EVA can be traced back to Hamilton (1777) and Marshall (1890), who concluded that, "the gross earnings of management which a man is getting can only be found after making up a careful account of the true profits of his business, and deducting interest on his capital". As early as the1920's General Motors applied this concept and in 1950's General Electric labeled it "residual income" and applied it as a performance measure to their decentralized divisions (Stewart, 1991). Later, the desirability of quantifying 'economic profit' as a measure of wealth creation was operationalised by David Solomon (1965) "as the difference between two quantities, net earnings and the cost of capital". This measure of 'residual income' is then defined in terms of after-tax operating profits less a charge for invested capital which reflects the firm's weighted average cost of capital. Close parallels are thereby found in the related (non-trademarked) concepts of 'abnormal earnings', 'excess earnings', 'excess income', 'excess realizable profits' and 'super profits' (Biddle et al., 1997). As Peter Drucker puts it in his Harvard Business Review (1998, p. 14) article: "EVA is based upon something we have known for a long time: What we call profits, the money left to service equity, is usually not profit at all. Until a business returns a profit that is greater than its cost of capital, it operates at a loss. Never mind that it pays taxes as if it had a genuine profit. The enterprise still returns less to the economy than it devours in resources... Until then it does not create wealth; it destroys it".

In 1991 Stewart revised the computation of residual income through a series of accounting adjustments and relabeled it EVA. EVA is a measures whether operating profit is enough compared to the total cost of capital. Stewart defined EVA (1990) as net operating profit after tax (NOPAT) subtracted with capital charge.

Mathematically Stewart thrashes out EVA model as:

EVA_t	=	$NOPAT_t - (WACC_t * IC_{t-1})$
Where:		
NOPAT	=	Net operating profit after tax
	=	Earnings before interest and tax × (1 – corporate Tax rate)
WACC	=	Weighted average cost of capital
IC	=	Invested capital

EVA also equivalently expressed as:

EVA_t	=	$(ROIC_t - WACC_t) \times IC_{t-1}$
Where:		
ROIC	=	Return on invested capital
WACC	=	Weighted average cost of capital
IC	=	Invested capital

Equivalently, if rate of return is defined as NOPAT/ Capital, this turns into a perhaps more revealing expression:

EVA	=	(Rate of return – cost of capital) × capital
Where:		
Rate of return	=	NOPAT/ Capital
Capital	=	Total balance sheet minus non interest bearing debt in the beginning of the year.
Cost of capital	=	Cost of equity × proportion of equity from capital + cost of debt × Proportion of debt from capital (1- tax rate)

EVA and Accounting Adjustments:

The information needed to compute EVA is obtained from accounting data. However, due to drawbacks in conventional Generally Accepted Accounting Principles (GAAP), accounting information must be adjusted. These adjustments are made in order to avoid distortions in accounting information (Prober, 2000). The calculation of EVA itself therefore consists of two separate but related steps. The primary adjustment is where a capital charge is subtracted from net operating profit after-tax (*NOPAT*). The capital charge is derived from multiplying the firm's overall financing cost, as reflected in the weighted average cost of capital (WACC), by the amount of invested capital. Invested capital in turn is defined as total assets, net of non-interest bearing current liabilities. In this form, EVA is essentially the same as residual income, though the latter measure is normally expressed as net income less a charge for the cost of equity capital (with the cost of debt already included in the calculation of net income) (Young, 1999).

The second and more controversial step consists of a series of adjustments to GAAP-based numbers. Consisting of some 160 possible adjustments, these changes are made on the basis of both empirical and theoretical concerns. Notwithstanding the large number of adjustments that are possible, companies adopting Stern Stewart's EVA Financial Management System (as distinct from the publicly available performance rankings) generally make no more than fifteen adjustments to published accounts, though Young (1999) observes that this figure has progressively fallen in recent years. To compute economic value added (EVA), Stern Stewart adjusts the NOPAT and capital components of residual income for what are termed "accounting anomalies" or "distortions." Some of their more common adjustments are shown in Table 1.

Table – 1 Examples of Typical Stern Stewart Adjustments For Alleged Accounting Distortions

Common Areas where GAAP-based Accounting is Adjusted*	GAAP Treatment	Nature of Adjustments**
Marketing and R&D costs	Expense	Record as asset and amortize
Deferred taxes	Record as asset liability	Reverse recording of asset and/or liability to reflect cash basis reporting
Purchased goodwill	Record as asset; over up to 40yrs	Reverse amortization to reflect amortize original asset amount
Operating leases	Expense	Record asset and amortize; record liability and related interest
Bad debts and warranty costs	Estimate accrual	Reverse accruals to reflect cash basis reporting
LIFO inventory costing	LIFO permitted Record as asset	Convert to FIFO
Construction in progress	Record as asset	Remove from assets
Discontinued operations	Include in assets and earnings	Remove from assets and earnings

Source: Journal of Applied Corporate Finance, Summer, 1999, Vol. 12, No. 2

*Common examples of Stern Stewart's adjustments. For example, the effect of capitalizing R&D is to add to CAPITAL (assets) past R&D expenses, less accumulated amortization. The effect on NOPAT (earnings) is to add back current R&D expenses and subtract the period's amortization of capitalized R&D. For a firm experiencing growth (decline) in R&D, the adjustment increases (reduces) contemporaneous NOPAT. The effect on EVA depends on the amount of capitalized R&D. For a firm in steady state, the adjustment has little net effect on NOPAT, but increases CAPITAL, thereby reducing EVA.

**Stern Stewart's rationales for these adjustments include: a) to better represent the underlying economics of the transactions; b) to reduce incentives for dysfunctional or suboptimal decision making; and c) to improve comparability externally (across firms) and internally (e.g., across divisions) by putting the accounting on a similar basis. Not all rationales apply to each adjustment.

The major adjustments to a company's conventional accounts may be meaningfully grouped as adjustments to capital balances, and adjustments to earnings. Included under these classifications are recognizing non-recurring gains and losses, research and development, deferred taxes, intangibles, depreciation, provisions for warranties and bad debts, restructuring changes, and macroeconomic conditions (Rennie, 1997).

First, 'successful efforts' accounting means that only the costs of successful investments (those with future economic significance) are capitalized and placed on the balance sheet. Unsuccessful investments are conventionally written off. EVA proponents say that the unsuccessful investments are just as important to shareholders as successful investments. Thus, the adjustment is to obtain the present value of all additional capital in future periods. This is equal to the amount of the write-off (Stewart, 1994, 79). Recognizing non-recurring gains and losses in this way is argued to keep the "invested capital in the balance sheet and is thus a constant reminder to management of its obligations to earn sufficient returns on all capital resources. It also takes away management's ability to time the recognition of losses, and is thus an immensely powerful tool for the analyst" (Young, 1999, p. 10).

Secondly, research and development (R&D) is treated by Stern and Stewart in a similar fashion. Under conventional GAAP, R&D costs are expensed. But as R&D is an investment, EVA advocates propose its capitalization. The argument here is that in a company which does not capitalize R&D, managers might be tempted to under-invest because short-term profits will be adversely affected by R&D expenditures whereas the benefits will not be realized until future periods (Young, 1999, p. 11). To capitalize R&D, the adjustment is to add back R&D costs to NOPAT and shareholders' equity. The capitalized costs are then written off gradually, with an amortization period based on the number of future periods expected to benefit from whatever products or services are developed from the R&D (Young, 1999, p.10). When comparing a firm that capitalizes R&D against one that follows conventional accounting, it is noticed that once a steady state is reached, operating income is not affected by the R&D adjustment. However, the EVA figure is lower in the firm that capitalized R&D, and this more accurately reflects the higher capital charges. However, adjustments such as this may be of no real benefit if firm has qualitative targets to achieve, rather than a financial objective (Young, 1999, p. 18).

Thirdly, taxes are only charged to profits as they are paid, rather than when they arise from timing differences between taxable income and book income under GAAP. The most significant source of the latter is the accelerated treatment of depreciation for tax purposes as against book income, with the argument that timing differences will recognize more book income than tax income (a deferred tax liability). Alternatively, deferred tax assets arise when provisions are made for future costs that serve to reduce current book income. These may include provisions for warranties, restructuring and environmental clean up. The net change of EVA is to add (or subtract) these changes in deferred tax to more accurately reflect the actual cash flows to tax authorities. In other words, the "deferred tax adjustment brings EVA closer to cash flows, and thus eliminates any influence on profits from one of the most important components of accrual accounting" (Young, 1999, p. 12). Most proponents argue that this focus on cash flows is the most useful component of EVA calculations [see, for example, McClenahan (1998), Kimball (1998), Jackson (1996), Uyemura, Kantor, Petit (1996) and Zimmerman (1997)]. However, Young (1999, p. 6) argues that this is a major limitation since deferred tax has been shown to be one component of earnings which is consistently value-relevant. Accordingly, this adjustment effectively reduces the value-relevance of EVA.

Fourthly, intangibles (especially goodwill arising from corporate acquisitions) are not automatically written off in an EVA system. The argument is that the write-off of goodwill (whether at acquisition or more gradually through capitalization and amortization) effectively removes at least part of the acquirer's investment in the target from the balance sheet, "...thereby lessening management's burden to earn a competitive return on that portion of invested capital" (Young, 1999, 12). The adjustment is to reverse any amortisation of goodwill that has already taken place and restore it to invested capital. The counter-argument is that whatever the

treatment of goodwill, the "present value of charges to the future results from the acquisition of goodwill will be the same" (Young, 1999, p. 17). Thus, there may be no obvious need for this adjustment.

Fifth, the adjustment made to depreciation considers that while a fast writen-down of plant is preferred for tax purposes, the purported reality is "...that the operational value of plant does not fall as quickly as depreciation schedules suggest and management performance should reflect this" (Rennie, 1997). Also, straight-line accounting depreciation means that rate of return tend to understate the true internal rate of return in the early years and overstate it in later years (Stewart, 1994, p. 80). This gives an illusion of improving performance, when in fact the only reason EVA would increase is because of the depreciation method used (Young, 1999, p. 14). EVA proponents argue that EVA should be constant over the life of the asset, and should be depreciated in exactly the same way that bank loans are amortized (Young, 1999, p. 14). This adjustment is mostly ignored in corporate enterprise and at the analyst level because, unless the company is in a high growth phase, depreciation figures under the annuity method are likely to be close to those under the straight-line method (Young, 1999, p. 18).

Sixth, restructuring changes that involve cash payments are considered capital under EVA. The argument is that such adjustments should only be made to generate returns in a later period, and therefore should also provide an appropriate return.

Finally, adjustments are also made for 'extractive industries' (mining, forestry, oil and gas). It is pointed that broad changes in these industries result from the overly heavy emphasis on exogenous commodity prices: conditions over which management has little or no discretionary control.

Although only a few adjustments are discussed, the process that Stern Stewart's EVA calculations employ has obvious intuitive appeal. Nevertheless, Young (1999) argues that many of these adjustments are of little importance at the company level, and some may be difficult, if not impossible, to replicate at the security analyst level. Further, in the corporate environment the adjustments may be costly and not easily understood. Chen and Dodd (1997, p. 331), for example, argue that a firm could "... implement performance measures based on (the computationally simpler) residual income which will likely to provide them with most of the practical benefits promised by an EVA system'. Also because of the current disclosure regulations, financial analysts may find calculating GAAP prohibitive, subjective, and it may also reduce the ability to accurately compare the performance of corporations. One last limitation of EVA is that it is still based on accounting figures, irrespective of the GAAP-related adjustments.

Review of Theoretical and Empirical Literature

The overall finding of the EVA literature is that any number of accounting-based information sources can potentially influence share prices. The empirical literature, however, also suggests that earnings generally dominates most other measures in explaining stock returns, although the more recent literature indicates that earnings should not be relied upon, largely because of its discretionary nature. Research into the information content of other variables, especially cash flows, has increased because of the apparent limitations in earnings figures, and because of the increased demand for investors and analysts to correctly identify firm values. While accounting profit measures such as earnings per share (EPS), return on equity (ROE), return on assets (ROA) and return on investment (ROI) are among the most commonly used performance measures, they are often criticized for not taking into consideration the total cost of capital and for being unduly influenced by accrual-based accounting conventions. In contrast, EVA, the difference between after-tax operating profits and the total cost of capital, is promoted as a measure of a company's real profitability. Since value is a primary concern to investors, proponents claim that EVA is the only performance measure that ties directly to a stock's intrinsic value (Stewart, 1991).

The evidence about superiority of EVA over traditional matrices is mixed and these studies can be divided in two groups: the studies carried out by EVA promoters and those carried out by academics. As stated in Lehen and Makhija (1997, p. 90), "EVA is seen by its proponents as providing the most reliable year-to-year indicator of a market-based performance measure known as Market Value Added

... Despite wide interest in EVA, little is known empirically about the efficacy of this measure versus other measures of performance... The evidence from these studies is mixed, however, and has not be resolved the debate over performance measures". Hence, both strands of this empirical literature are equally deserving of attention.

Dimitris Kyriazis and Christos Anastassis (2007), study for 121 non-financial publicly traded Greek firms covering a period of eight years, from 1996 to 2003 concluded that relative information content tests reveal that net and operating income appear to be more value relevant than EVA. Additionally, incremental information tests suggest that EVA unique components add only marginally to the information content of accounting profit. Moreover, EVA does not appear to have a stronger correlation with firms' Market Value Added than the other variables, suggesting that – for our Greek dataset – EVA, even though useful as a performance evaluation tool, need not necessarily be more correlated with shareholder's value than established accounting variables.

Kim, Woo Gon (2006), the sample for this study consisted of 89 publicly traded hospitality firms. Firms that did not have data for the entire period of 1995 to 2001 were eliminated from the analysis. Regression analysis tests the information content of EVA and indicates that earnings are more useful than cash flow in explaining the market value of hospitality firms. EVA itself has very little explanatory power. Incremental information content tests show that EVA makes only a marginal contribution to information content beyond earnings and cash flow. Overall, the results do not support the hypothesis that EVA is superior to traditional accounting measures in association with equity market value.

Lokanandha Reddy Irala (2005), concluded that successful stories in the West are quite encouraging, empirical research is not sufficient for establishing the claim of EVA as better measure. However, there is not much research to prove it otherwise. In case of India either way research is very inadequate.

Madhu Malik (2004), analysis a sample of 50 manufacturing publicly traded Indian companies covering a period of five years, i.e., from 1998 to 2002 conclude that the selected independent variable and EVA – the depended variable, are correlated and can not be treated as water–tight compartment. There exist positive and high correlation between EVA and other financial variables – RONW, ROCE and a positive but low correlation between EVA and EPS. Comparing EVA with traditional performance measures it has been found that not even a single traditional performance metric explain to the fullest extent variation in shareholder wealth. Another finding of this study is that ROCE must be greater than cost of capital employed (COCE) to have a positive EVA and it is this spread i.e., a difference between the percent ROCE and COCE that has a direct impact on shareholder wealth. Larger the spread, greater will be the value addition to the shareholder wealth and vice-versa.

Karam Pal and Mahesh C. Garg (2004), analyse a sample of 200 companies, which constitute BSE-200 or BSE-Dollex covering a period of five years, i.e., from 1998 to 2002. They conclude that, the companies who are performing well would be benefited a lot by winning the market sentiments and would learn to value the stakeholder by making some additional in their financial interest in the corporate world.

Peixoto (2002) for a sample of 39 Portuguese companies for the period 1995–98, it was reported that the net income variable has a higher informational content than EVA and operating profits, when the dependent variable is the market value of the companies. However, EVA appeared to have a superior informational content when the dependent variable is the MVA. The latter finding implies that EVA may perform well as a measure of evaluation of management performance, when the goal is the maximization of shareholders' wealth.

Fernandez (2001) followed a different approach by examining the correlation coefficients between EVA and MVA for a sample of 582 American companies for the period 1983–97, it was shown that for 296 firms of the sample the changes in the NOPAT had higher correlation with the changes in MVA than the corresponding changes in EVA, while for 210 sample firms the correlation between changes in EVA and MVA was negative.

Acheampong Y.J., Wetzstein M.E. (2001) proposed an innovative type of analysis using parametric

methods for estimating efficiency, focusing on the food industry. It is interesting to note that Acheampong and Wetzstein (2001, p. 7) conclude that: "the analysis showed that there are no significant differences between traditional and value added measures of performance"

Robertson and Batsakis (1999) empirically examined the role an organization's characteristics may play in determining the emphasis on executive share options within the compensation system. They found that "...share options are viewed from an organizational perspective to be an effective behavioral control mechanism". They also found that investors respond favourably to the adoption of an EVA-based compensation plan, and that a flow-on effect would be that investors view increases in EVA more favourably than improvements in traditional accounting-based performance measures.

Biddle et al., (1997 and 1999) analyzed a sample of 6174 firm-years over the period 1984-93 by comparing adjusted R^2 obtained regressing stock market adjusted returns against EVA, Residual Income (RI), accounting earnings (namely, Earning Before Extraordinary Item - EBEI) and Operating Cash Flow (CFO). According to their results, EBEI has the highest adjusted R^2 and EVA has a smaller adjusted R^2: these results do not support the hypothesis that EVA dominates traditional performance measure in its association with stock market returns. In addition, Biddle et al., (1997 and 1999) also assessed the relationship between performance measures and firm value by replicating O'Byrne's (1996) study with some adjustments. In order to level the playing field, Biddle et al., (1999) extended the adjustment proposed in the second stage of O'Byrne's (1996) analysis to the regressions run against NOPAT: in this case, the EVA superiority disappears. In fact, according to their results, accounting earnings have the highest adjusted R^2 (0.53), EVA has an adjusted R^2 of 0.50 and NOPAT has an adjusted R^2 of 0.49. These results suggest that EVA does not dominate accounting earnings in explaining firm values.

Bao and Bao (1998) investigated the usefulness of value-added and abnormal economic earnings of 166 US firms. The results indicated that value added is a significant explanatory factor in market returns, and its explanatory power is higher than that of earnings.

Al Ehrbar (1998) reports that several empirical analyses have been carried out by Stern Stewart using the Performance 1000 database. According to the Stewart findings, EVA explains half of the volatility in companies' MVA, the highest correlation found.

Biddle (1998) suggested several reasons why EVA performs relatively poorly in comparison with earnings in explaining stock returns. The first reason is that EVA may not outperform the current realizations of other performance measures, such as earnings, in proxying for future equity, as against debt and equity, cash flows. Secondly, Stern Stewart's estimates of the charge for capital and accounting adjustments may contain measurement error relative to what the market is using to value firms. Further, most studies use Stern Stewart's publicly available database, which may not include many custom adjustments that are made for specific clients.

Chen and Dodd (1997) reported that not a single EVA measure (average EVA per share, change of standardized EVA, return on capital, capital growth and return on capital minus the cost of capital) is able to account for more than 26 percent of the variation in stock returns. Collectively the regression model containing the five EVA variables explained only some 41.5 percent of the variation in stock returns. They concluded that although EVA measures provide relatively more information than the traditional measures of accounting profit (including earnings per share, return on assets and return on equity) in terms of the strength of their associations with stock return, traditional accounting measures still have more significant information content. They also found that EVA and residual income variables are highly correlated and are almost identical in terms of association to stock return.

Rogerson (1997) investigated the moral hazard that exists with managers to increase shareholder wealth and to thereby increase the firm's cash flows so as to increase managerial compensation. They concluded that residual income (or EVA) as a performance measure will ensure that managers will always make efficient investment decisions.

Biddle, Bowen and Wallace (1997) explores whether EVA is more highly associated with stock returns and firm values than accrual earnings, and

evaluated which components of EVA, if any, contribute to these associations. The results of their study of 773 large US firms indicated that earnings is more highly associated with market-adjusted annual returns than either residual income or EVA, and that all three of these measures dominate cash flows from operations. Thus, when considering the relative and incremental information content results together, neither EVA nor RI appears to dominate earnings in its association with stock market returns.

Lehen and Makhija (1997) assessed which performance measure does the best job of predicting the turnover of Chief Executive Officer (CEO). Focusing on the degree of correlation between different performance measures and stock market returns, they found that correlation coefficients vary from 0.39 and 0.76. In detail, EVA and MVA are the most highly correlated measure with stock market returns: 0.59 and 0.58 (respectively). The other performance measures have smaller correlations: 0.455 for ROA, 0.455 ROE and ROS 0.388. It is interesting to note that, similarly from all other studies where MVA was used as response variable, the measure mostly correlated with MVA is EVA.

Grant (1996), examining a sample of 983 American companies for 1983, reached similar conclusions about the validity of EVA by finding that the ratio of EVA/WACC explains the 31.6% of the ratio MVA/invested capital. However, he reported that for the 50 companies with the highest EVA (wealth creators) the R^2 of regressions increases to 83.2%, while for the 50 companies with the lowest EVA (Wealth destroyers) the R^2 of regressions falls to 2.7%, implying that investors are less likely to proceed to valuations of companies for which they know that they are wealth destroyers.

O'Byrne (1996) found the EVA superiority in a two-step analysis. In the first, the firm market value was regressed on EVA and then on earnings (namely, NOPAT). The results conclude that an adj R^2 for EVA of 0.31 and of 0.33 for the NOPAT. In the second step of the analysis, a set of adjustments were proposed, firstly, EVA separate coefficients were allowed for positive and negative value of EVA; secondly, the natural log of capital was introduced as predictor in order to take into account differences in the way the market value firm of different sizes; thirdly, 57 dummies variables were introduced to consider potential industry effects. In this second stage, he found an R^2 for EVA of 0.56, which enable him to conclude that EVA is superior to earnings in explaining firm value.

Uyemura et al., (1996), a particularly interesting study for our purposes since it focuses on banking, analyzed the largest 100 U.S. bank holding companies over a period of ten years (1986-95). By regressing changes in standardized MVA against changes in standardized EVA (defined as EVA divided by capital) and traditional performance measures, EVA was found to have the highest correlation with MVA (table 2).

Table 2 Uyemura et al., (1996) results

Variables	Alpha	Beta	R^2	Standard Error
EVA	186 (26)	3.40 (0.14)	40%	757
ROA	–435 (59)	62,018 (5,429)	13%	912
ROE	–309 (56)	3,581 (367)	10%	928
Net Income	19 (35)	0.75 (0.09)	8%	938
EPS	–179 (45)	76 (11)	6%	950

Source: Uyemura et al., (1996, p.99)

Peterson and Peterson (1996) analyzed traditional and value-added measures of performance and compared them with stock returns. According to their findings, traditional measures are not empirically less related to stock returns than return on capital: as a result, traditional measures should be not eliminated as a means of evaluating performance, though these have no theoretical appeal. From this point of view, they rule out the possibility of value added measures not being worthwhile: since value added measures focus on economic rather than accounting profit, these play an important role in evaluating performance because managers will aim towards value creation rather than mere manipulation of short-sighted accounting figures.

Riahi-Belkaoui (1996) also compared the use of linear and non-linear models in specifying the relationship between value-added and market returns. He found that models relating accounting and market returns have more explanatory power when, firstly, the accounting returns are expressed by the relative changes in net value-added, and secondly, the relation is a nonlinear convex-concave function.

Stewart (1994) investigated the performance of the largest 1,000 American companies, he reported that the change in EVA explains 50% of the change in MVA (the remaining 50% is explained by the future EVA), whereas the change in sales explains only 10% of the change in MVA, comparing it with 15–20% of the change in earnings per share (EPS) and 35% of the change in ROE.

Stewart (1991), the literature relating to EVA, literally begins with the publication of the book *The Quest* for Value in which the author exposed his views about the usefulness of EVA as the basis of performance measurement of a company and its management at a total or a divisional level. In his empirical research he examined the informational content of EVA canvassing 613 American companies comparing two periods, namely 1984–85 and 1987–88. He found a strong correlation between EVA and MVA, which becomes more apparent when the changes in EVA and MVA are considered giving an R^2 of about 97%. However, for companies with a negative EVA the association becomes less obvious, because of the increased probability of liquidation or acquisition, which sets a lower limit on the market value of these companies.

Conclusions

When examining existing theoretical and empirical research in this area, a number of salient points emerge. First, despite the relatively recent adoption of EVA as an internal and external financial performance measure, its conceptual underpinnings derive from a well- established microeconomic literature regarding the link between firm earnings and wealth creation. And apart from the GAAP-related adjustments incorporated in EVA-type calculations, the measure itself is almost identical to the non-proprietary measure of residual income.

Second, the GAAP-related adjustments themselves accordingly comprise the most unique and contentious aspect of EVA. While these adjustments are argued to produce earnings figures that are closer to cash flows and correct, amongst other things, for purported 'biases' in the treatment of intangible assets and depreciation, they are often criticized for having little importance, being difficult to understand, and costly. Paradoxically, the removal of some accruals through these adjustments is argued to reduce, rather than increase, the information content of EVA.

Third, the empirical evidence concerning EVA has been mixed. Biddle et. al. (1997) used relative and incremental information tests to examine whether stock returns were more highly associated with EVA, residual income or cash flow from operations. Biddle et. al. concluded that while "for some firms EVA may be an effective tool for internal decision making, performance measurement, and incentive compensation, it does not dominate earnings in its association with stock market returns". Dimitris Kyriazis and Christos Anastassis, Kim, Woo Gon, Peixoto, and Karam Pal Singh and Mahesh C. Garg also arrived at similar conclusion. Chen and Dodd (1997) likewise examined different dimensions of the EVA system and concluded: "... not a single EVA measure (annualized EVA return, average EVA per share, change in standardized EVA and average return on capital) was able to account for more than 26 percent of the variation in stock return". Lehn

and Makhija, Rogerson, Biddle, and Bowen et.al reached similar conclusions. Lastly, Clinton and Chen (1998) compared share prices and returns to residual cash flow, economic value-added and other traditional measures, and recommended that companies using EVA consider residual cash flow as an alternative. However, Bao and Bao (1998) in an analysis of price levels and firm valuations concluded that the "results are not consistent for earnings and abnormal economic earnings, but are consistent for value added, i.e., value-added is significant in both levels and changes deflated by price analyses". Similarly, Uyemura, Kantor and Petit (1996) demonstrated that EVA has a high correlation with market value added (the difference between the firm's value and cumulative investor capital) and thereby stock price, while O'Byrne (1996) estimated that changes in EVA explain more variation in long-term stock returns than changes in earnings. Finally, and from a stock selection perspective, Herzberg (1998) concluded that the residual income valuation model (including EVA) "appears to have been very effective in uncovering firms whose stock is under priced when considered in conjunction with expectations for strong earnings and growth". Nevertheless, the bulk of empirical evidence indicates that the superiority of EVA vis-à-vis earnings (as variously defined) has not been forthcoming.

Direction for future research

These limitations in the existing literature all suggest future directions for research.

To start with, notwithstanding that EVA figures are readily available and promoted in the UK, Australia, Canada, Brazil, Germany, Mexico, Turkey and France, no empirical studies of this type have been conducted with reference to developing country. There is an obvious requirement to examine the usefulness of EVA vis-à-vis traditional financial statement measures in an alternative institutional milieu. A second direction is to suggest that "an avenue for future research suggested by the findings of this study is to examine more closely which components of EVA and earnings contribute to, or subtract from, information content". Put differently, given that EVA consists of nearly 160 potential changes to accounting figures grouped across adjustments to accounting measures of operating profits and capital, there is the requirement to quantify the contribution of these sub-components to overall firm performance.

A final suggestion is to rectify the empirical limitations that appear to dominate this field. Accounting research, for example, frequently uses R^2 to measure value relevance. Recent evidence suggests that these measures may be confounded by the presence of scale effects in levels regressions. Likewise, there is the possibility of nonlinearity in these accounting-type relationships and this may also have served to distort research findings in this area. Lastly, most research in this area has tended to concentrate on either cross-sectional data or panel data with a relatively small number of time series. Examination of EVA over a longer time frame would allow greater empirical certainty on its status as a corporate performance measure.

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Harvey Thompson–Who Stole My Customers??

Pearson Education Inc., First Indian Reprint,
2005, Pages 210, Price: 399/-

Customer is considered king in modern marketing approach. Marketing gurus, therefore, emphasize customer centered approach for companies. Marketing managers also spend lot of time in developing and executing strategies for creating and sustaining customer loyalty. Who stole my customers?? is an attempt to provide practical tips for creating and sustaining loyal customers.

The book has been written by Harvey Thompson who is an internationally recognized authority on Customer Loyalty and Relationship Management. As Director and Managing Principal for IBM Global Services, Customer Value Management Consulting, he built a worldwide network of consultants to help Fortune 500 and Global 1000 senior executives develop an actionable, customer defined vision of their company and then implement it.

Central idea of the book is, take care of the customers or lose them to competitors who may be more in tune with their needs and wants. To help companies get the customers and then adopt the customer's perspective for effective marketing, the issues are presented from both company's and customers' view point. The author has stressed that both views must be reconciled and aligned.

The book has been divided into four parts comprising a total of ten chapters. First part focuses on why customers defect to competitors. The important cause, according to the author is, ignoring customer feedback and needs and obsession with company's products and policies. Part two helps in understanding customer loyalty. It talks about product and service improvements as well as customer segmentation and targeting. Part three advocates integration of customer view with company culture. Last part describes the myths about customers and provides tips on what must be done to create and sustain loyalty.

Taking into account customers' point of view is the main strength of the author. Each chapter of the book concludes with a 'you are customer' exercise. The idea has been given to marketers to imagine themselves as customers of their company. This will give them the chance to realize whether they wish to do business with the company and if yes why and if no then why not? This will help them in developing winning strategies for creating and sustaining loyal customers.

The book may help the marketing people working in different companies. This will provide them practical tips of creating and sustaining loyal customers. The book is more relvent to managers of companies marketing industrial goods and also for companies in business marketing area. The book is also beneficial to the students in understanding customer loyalty and will give them useful ideas to be used later.

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