

PABLO FERNANDEZ MODEL: A DISRUPTIVE APPROACH OF VALUE CREATION IN INDIAN COMPANIES

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Abstract: *The creation of value for shareholders becomes crucial for the companies now days. There are number of ways to measure shareholder's value but the most popular and widely used method is EVA. The major drawback with EVA method is that it only considers historical data and as per literature review there is low correlation between EVA and Market value added. Consequently, a new approach is introduced by Pablo Fernandez. As per this new approach shareholder's value is measured after considering present value of return. The present study endeavors to explore and study the shareholder's value creation (SVC) in Indian companies as measured by PFM (Pablo Fernandez Model) and to determine the key factors that have an impact on shareholders' value creation. In the present study we have considered dividend and capital structure as independent variable and SVC as dependent variable. Panel data techniques have been applied on cross sectional time series data in order to examine the impact of Dividend and Capital structure on Shareholder Value Creation (SVC). The study reveals that dividend influences the Shareholder Value Creation as measured by PFM.*

Key Words: *PFM, Shareholders' value creation, Dividend and Capital structure*

INTRODUCTION

The financing decision is one of the crucial decisions of the company. This decision can have an ultimate impact on its performance. Firms are led to use a combination of equity and debt to meet its financial requirements. The determination of optimal financial structure is utmost important. This can minimize the cost of the capital and, consequently can maximize the shareholder value creation.

There are number of ways to determine shareholder value creation. In earlier times, the profit was the only method of measuring corporate performance. This method was difficult to apply in case of inter sector and inter-company comparison. It might give mis-leading results because of difference in nature and size of business. Consequently, a need was aroused to look for the other methods to measure the corporate performance.

The number of changes has been made in the organizational objectives and structure which led to introduction of various methods of corporate performance

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appraisal like Earning per Share (EPS), Return on Capital Employed (ROCE), Return on Net worth (RONW), Net Profit Margin (NPM), Operate Profit Margin (OPM), Market Value Added (MVA), Shareholder Value Added (SVA), Cash Value Added (CVA), Pablo Fernandez Model (PFM) and Economic Value Added (EVA). Among these concepts, Economic Value Added (EVA) and Pablo Fernandez Model (PFM) have captured more attention in the literature as a vital tool to measure corporate performance.

Pablo Fernandez Model (PFM)

Pablo Fernandez criticized the concept of EVA and also proposed a new model to calculate shareholder value creation where Equity Market Value is used. PFM measure is the combination of two methods i.e. the Total Shareholder Return and Economic Profit. The concept of Total Shareholder Return (TSR) was modified to get a complete shareholder return. From this shareholder return cost of equity was deducted to arrive at created shareholder value.

Shareholder Value Creation= Economic Market Value x (Shareholder return-Cost of equity)

Total Shareholder Return (TSR), is a measure of total returns earned by shareholders of a company during a given period of time. It is the sum total of increase in share price plus dividends declared during the period (*Borde, 2012*).

REVIEW OF LITERATURE

Jalaja (2010) compared value creation of old generation companies with new generation companies by adopting Pablo Fernandez model. The study considered the sample of 50 companies representing ten industrial sectors for a period of five years, from 2002 to 2006. The result showed that the old generation companies (companies representing the industry sectors- Steel, Sugar, Oil & Gas, Textiles and Cement) created more shareholder value than new generation companies (companies representing the industry sectors- Pharmaceuticals, Automobiles, IT, FMCG and Capital Goods). There was found to be a positive correlation between shareholder value creation and market capitalisation in 44 companies out of a sample of 50 companies, but the degree of correlation varies. There is strong correlation in 23 companies, moderate level of correlation in four companies and weak correlation in 17 companies and the correlation is negative in six companies. According to empirical evidence it was so proved that shareholder value creation does not depend on the size of the company (measured in terms of market capitalization). **Abdoli et al. (2012)** studied the relationship between every independent variable, including Economic Value Added (EVA) and residual income as the representatives of economic models with shareholders value creation. The sample size of the statistics is 85 companies. The study used simple and multi-

variable regression methods to analyze the data. The results showed that both residual income and the economic value added (EVA) have a significant relationship with the shareholders' created wealth. However, in relation to created shareholder value, the residual income criterion seems to be more significant. The difference between the impacts of the two variables raised due to accounting adjustments through which the effect of accrual accounting is being eliminated, therefore, it is considered as a considerably better criterion for the evaluation of performance and increase in shareholder's value. **Chauhan (2012)** analyzed the shareholder's value creation in the Indian petroleum industry. The Indian petroleum industry is mostly dominated by private sector firm and public sector firm. The study had analyzed the performance of the company. Petroleum industry was divided into private sector firms and public sector firms. The study had used MVA, PAT, NOPAT, EVA, EPS and market capitalization data which was provided by CMIE Prowess database, for the period of 10 years, from 2001-02 to 2010-11. For all seven companies, the 10-year correlation between EVA of each year and every year's NOPAT, MVA, PAT, EPS and market capitalization was calculated. T-test was applied to test the hypothesis in the present research. EVA was found to have significant correlation with NOPAT, EPS, OP, Market capitalization and MVA figures of the firm of both sectors. Both sectors have created a positive EVA and MVA in the study. **Tian et al. (2013)** made an attempt to measure the value-creation ability of the enterprises. EVA was applied to analyze the value-creating ability of the whole blue economic zone based upon the accounting report data from 2009-2011, by taking the listed companies in the Shandong Island blue economic zone. Thereafter, a comparison regarding the value-creating ability of these listed companies was proposed in the view of the industry. As a result, the ability to create value of the listed companies in the Shandong island blue economic zone had shown an increasing tendency during the last three years. The EVA rate, which is an index which can reflect capital efficiency, increased at first and started decreasing afterwards. However, there showed a huge gap between the different industries. **Vijayalakshmi and Manoharan (2013)** carried out an empirical study which examined the impact of the leverage on shareholder value creation of the Indian miscellaneous manufacturing sector. For corporate growth, shareholder value creation has become a focusable area. Because the shareholders are the ultimate owners of the enterprises, every firm has to construct a capital structure keeping in mind the objective of shareholder's wealth maximization. Miscellaneous manufacturing sector is said to be a capital intensive sector, where a greater emphasis is laid upon designing the capital structure. The period for which the study was conducted was 1995-96 to 2009-10. To analyze the data a panel approach has been applied. According to the results of the study, the leverage has a significant influence on the shareholders' value creation. **Bhasin (2013)** explored that the main goal of financial management is to maximize the shareholder's value. The main objective of the study is to examine whether or not the sample companies have

been able to generate value for its shareholders and also to analyze the effectiveness of EVA over the conventional and traditional measures of corporate performance. Various statistical tools like ANOVA, regression analysis and trend analysis were used for analyzing the data. The study indicated that EVA is superior to the traditional performance measures in its association with MVA. **Mistry et al. (2013)** measured the relationship between Shareholder's value, that is, residual income measures and financial variables, that is, residual income components; traditional value measures and cash flow measures. According to the results of the company, the majority of the selected variables of the study differ significantly among selected pharmaceutical players, except traditional value measures, that is, P/E ratio. The study found that shareholders' value can be predicted by the selected financial variables. **Murthy (2013)** analyzed the performance of TCS and INFOSYS with regard to its shareholder wealth maximization. To study the performance of ROE, Du Pont Analysis has been applied. The basic objective to select the two companies is to understand and apply the concept of value creation in the two companies with different factsheet. According to the study, TCS has provided consistent return to their equity shareholders on their investment, even more than Infosys. **Haque et al. (2013)** made an attempt to study the relationship between dividend payouts and Economic Value Added (EVA), an indicator to shareholders wealth creation, introduced by United States based consultants Stern Stewart and Company, New York, in 1990, using data of Square Pharmaceutical Limited (SPL), one of the largest pharmaceutical companies in Bangladesh, for the periods 2004-05 to 2010-11. The study concluded that there is an inverse relationship between dividend payouts and EVA, using the simple regression equation method, and also recommended that SPL should continue the existing dividend policy of retaining a bulky portion of earning rather than a high payout ratio.

RESEARCH METHODOLOGY

Research objectives

- To determine Shareholder Value Creation (SVC) as measured by PFM.
- To analyze the impact of dividend and capital structure (debt-equity ratio) on Shareholder Value Creation.

Hypothesis

As per literature review, there are number of determinants of Shareholder Value Creation but the major objective of current study is to analyze the impact of Dividend and Capital structure on shareholders' value. The financing decision is one of the key financial decisions of the company, which ultimately affects its performance as well as its weighted average cost of capital; the equity shareholders are always pleased with a levered capital structure as it ultimately gives positive

impact on earnings per share and on the market price of shares. The optimal capital structure can minimize the cost of the capital and, consequently can maximize the shareholder value creation. Similarly the dividend decision is also a crucial decision to make. It ultimately affects the value of the firm and cost of capital. The major focus of the study is on Dividend and Capital structure because the shareholders are always interested in dividend and company is always interested in its optimum capital structure.

H_0 : There is no significant impact of dividend and capital structure on Shareholder Value Creation.

Sample size

The sample size consists of 30 SENSEX (See Annexure-1) companies. Listing on an exchange is a stipulation since stock price information is required for calculating the cost of equity. The study used the data for a period of five years from 2009-2013.

Data analysis technique

The study was based on secondary data. The data was collected from capitaline and money control website. The Risk Free interest rate was collected from Reserve Bank of India web site. In this study, the data collected is time series as well as cross section. Data is pooled using software E-views 7. In order to scrutinize the explanatory power of independent variables (DIV and D/E ratio) on dependent variable (SVC), we applied panel data techniques to analyze the data of 30 companies for the period of 200-2013. Indian companies considered for this study were listed on BSE (Bombay Stock Exchange) as on 31st March 2014.

Scope of the study

The scope of study is limited to Shareholder Value Creation as measured by PFM. This method was chosen after extensive literature review. There are number of ways to measure shareholder's value but the most popular and widely used method is EVA. The major drawback with EVA method is that it only considers historical data and as per literature review there is low correlation between EVA and Market value added. Consequently, a new approach is introduced by Pablo Fernandez. As per this new approach shareholder's value is measured after considering present value of return. The present study endeavors to explore and study the shareholder's value creation (SVC) in Indian companies as measured by PFM. This model is believed to be the superior model than the traditional measures (ROE, ROI, EPS, EP etc.) to analyze Shareholder Value Creation.

Limitation of the study

There are number of determinants of Shareholder Value Creation but the present study only analyzed the impact of two major determinants (Dividend and Capital

structure) on Shareholder Value Creation because ultimately the shareholders are always interested in dividend and companies are always interested in its optimum capital structure. The study is also restricted to some selected Indian companies from selected Industries like Aluminum, Automobiles, Banking, Cigarettes, Computers – Software, Electrical Equipment, Engineering, Finance – Housing, Gas, Mining, Oil Exploration/Production, Personal Care, Pharmaceuticals, Power, Refineries, Steel And Steel Products, Telecommunication.

DATA AND MEASURES

Determination of SVC using Pablo Fernandez Model of Selected Companies (2009-2013)

Shareholder Value Creation means the residual income for shareholders. It can be measured by PFM method. The following equation is used for determining SVC:

$$\text{SVC} = \text{SVA} - (\text{Equity market value} \times K_e)$$

- SVC = Shareholder Value Creation
- SVA = Shareholder Value Added

SVA = Increase of equity market value ("E) + Dividends + NPS (Net payment to shareholders)

Following is table of SVC of 30 companies:

Table 1
SVC of BSE SENSEX Companies using PFM model from 2009-2013(In Million)

<i>Companies</i>	<i>2013</i>	<i>2012</i>	<i>2011</i>	<i>2010</i>	<i>2009</i>	<i>Average</i>
Hindalco Industries Ltd.	-9043.98	48360.88	179325.3	151110.7	111579.6	96266.50
Bajaj Auto	-11387.2	-5869.75	9851.031	-97582.8	-131494	-47296.48
Hero Honda Motors Ltd.	-57088.2	-46561.9	-151209	-121757	-96555.2	-94634.26
Mahindra & Mahindra Ltd.	-21792.4	33956.74	36874.65	36864.73	-37625	9655.74
Maruti Suzuki India Ltd.	-59935.8	-35404.7	-57261.5	-97224.5	-11878.1	-52340.89
Tata Motors Ltd.	-313.582	22678.97	96878.6	203934.9	208029.1	106241.60
Axis Bank	73874.52	173487.5	336527.2	419555.8	489718.7	298632.76
HDFC Bank Ltd.	-384.542	-1568.43	14420.19	228493.4	30340.5	54260.22
ICICI Bank Ltd.	110651.5	209770.6	489500.1	2607969	5849893	1853556.83
State Bank of India	10001.47	33593.87	43732.66	50941.6	82330.1	44119.94
I T C Ltd.	76376.89	336119.5	421116.9	137269.4	225006.2	239177.77
Infosys Technologies Ltd.	-81905.8	-35820.2	-24313.2	-12291.1	-61145.4	-43095.15
Tata Consultancy Services Ltd.	65369.12	524064	216560.2	317164.9	-295599	165511.91
Wipro Ltd.	-16951.7	51093.6	87147.07	-126746	-196019	-40295.14
Bharat Heavy Electricals Ltd.	-27920.9	-5962.02	-22679.3	150169.8	-45321.2	9657.28

contd. table 1

<i>Companies</i>	<i>2013</i>	<i>2012</i>	<i>2011</i>	<i>2010</i>	<i>2009</i>	<i>Average</i>
Larsen & Toubro Ltd.	38035.87	137690	103150.8	141137.4	286281.5	141259.12
HDFC	10646.55	26934.03	243724.9	24754.76	60974.31	73406.91
GAIL India	-29537.4	-58880.4	-150475	-229429	-102063	-114076.97
Coal India	430830.8	-1699169	-919598	-652084	-631992	-694402.54
Sesa Goa	26898.59	42897.15	77873.59	72582.98	81037.66	60258.00
Oil & Natural Gas Corporation Ltd.	-54881.2	9954.4	372535.1	-741247	96863.14	-63355.10
Hindustan Unilever Ltd.	-512.191	-124346	-41477.1	-126060	1389.172	-58201.32
Cipla Ltd.	-59528.9	-52631.1	-101290	-113371	-78803.3	-81124.88
Dr. Reddy's Lab.	-43578.9	-24681.3	-75168.7	-114641	-173184	-86250.95
Sun Pharma	-1935.99	-582.526	77293.9	30628.44	6884.89	22457.74
NTPC Ltd.	-404825	-403617	-406247	-323074	-363366	-380225.73
Tata Power Co. Ltd.	-840.155	1482.134	-5981.44	70613.89	49206.98	22896.28
Reliance Industries Ltd.	38853.11	491635.4	98311.24	559334.8	-52682.7	227090.37
Tata Steel Ltd.	-360659	-65055	-426819	-491368	-367590	-342298.18
Bharti Airtel Ltd.	81055.79	290657.6	2784344	1599345	427945.6	1036669.47

Source: Computed

Interpretation

The above table shows the result of shareholder value creation (SVC) of SENSEX companies in India from 2009-2013. The positive data of SVC presents that the companies are generating value and negative data shows that the companies are destroying value for the investors. If a company is creating shareholder value then it can be inferred that the company is efficient in managing its resources. The above table showed the result that 12 companies out of 30 companies destroyed shareholders' value as measured by PFM. The highest value destroyer is Coal India and highest value creator is ICICI bank.

Impact of Dividend and Capital Structure on Shareholder Value Creation

The hypothesis of the study is to examine the impact of dividend (DIV) and capital structure (Debt equity ratio) on the shareholder value creation (SVC), panel data techniques have been applied. Based on the hypothesis posed, the estimated model is as follows:

$$SVC = f(\text{Dividend, Debt equity ratio})$$

The variation of the data is removed by taking natural logarithm of the data and the above equation can be changed into mathematical form using log-linear model:

$$LSVC_{it} = \alpha + \beta_1 LDIV_{it} + \beta_2 LD/E_{it} + e_{it}$$

Where, $LSVC_{it}$ = logarithm of shareholder value creation $_{it}$ company related to $_{th}$ term, $LDIV_{it}$ = logarithm of dividend $_{it}$ company related to $_{th}$ term, LD/E_{it} =

logarithm of Debt equity ratio $_{it}$ company related to $_{it}$ term, α is constant and e it is error term.

Panel Unit Root Test

In case of panel data, firstly, the panel unit root test must be performed in order to determine whether the variables are stationary or not. If the relevant variables are non-stationary, then the regression model for estimating the effect of independent variable on dependent variable may give misleading result causing the problem of spurious regression and co-integration amongst variables. Consequently, Panel unit root test is applied on the series. In order to apply the panel unit root test, one must select the appropriate equation amongst three equations (Individual intercept, no trend no intercept and Individual intercept as well as trend). In the present study, line graph has been drawn for the selection of appropriate equation. For Dividend and debt equity ratio individual intercept option is selected while performing panel unit root tests.

Further panel unit root tests are applied to check stationary of data. There are two types of panel unit root tests. When the persistent parameters are common

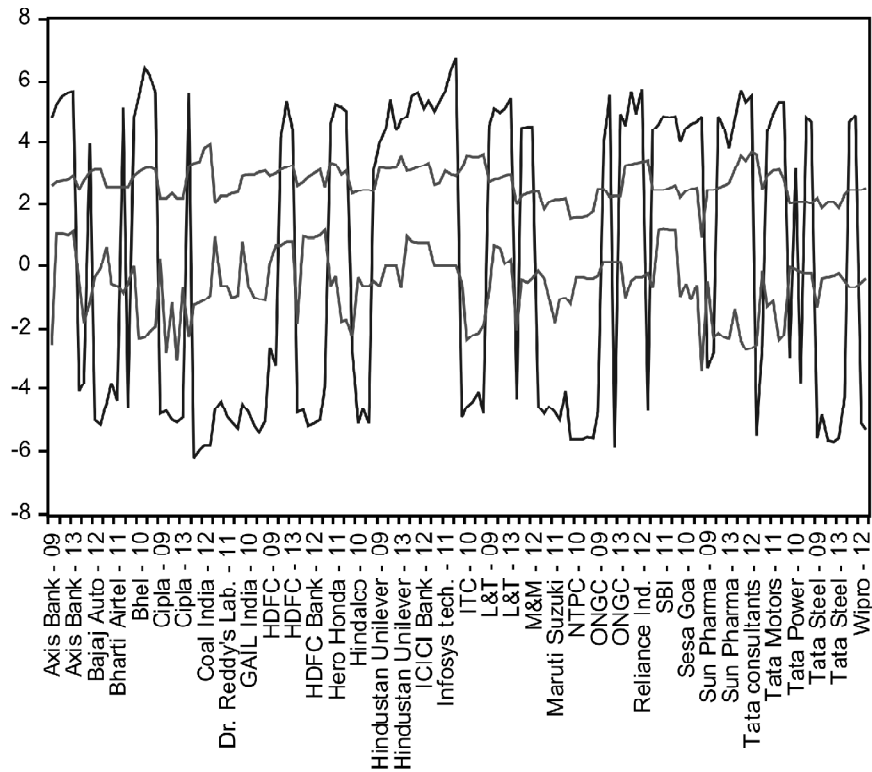


Figure 1: Line graph of LDIV, LOGSVC, LD/E

across cross-section, this type of process is called a common unit root test. Levin, Lin and Chu (LLC) (2002) develop a common unit root process by using this assumption. Otherwise, when the persistent parameters freely move across cross section then this type of unit root process is called an individual unit root process. The Im, Pesaran and Shin (IPS) (2003), Fisher-ADF and Fisher-PP test are based on this form. The common and individual unit root test's results are reported in Table 2.

Table 2
Results of Panel unit root test

Variables	Individual Unit Root test				Common Unit root test	
	Augmented Dicky Fuller Fisher** Chi square		PP Fisher** Chi square		Levin Lin & Chu	
	Statistics	p-value	Statistics	p-value	Statistics	p-value
LSVC	63.9516	0.3396	65.4228	0.2941	2.29339	0.9891
LDIV	137.908	0.0000*	160.029	0.0000*	-25.3856	0.0000*
LD/E	303.986	0.0000*	333.688	0.0000*	-78.6568	0.0000*
1 st Difference						
LSVC	194.595	0.0000*	96.7896	0.0018*	-104.916	0.0000*
LDIV	146.054	0.0000*	163.636	0.0000*	-26.6760	0.0000*
LD/E	338.082	0.0000*	376.688	0.0000*	-53.5608	0.0000*

*Null Hypothesis: Unit Root, * Test values are significant at 0.01 level, ** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. Source: Computed*

The above table shows the result that LDIV and LD/E is stationary in level form. It means that the null hypothesis is rejected at 0.01 significance level for variables LDIV and LD/E. The other series LSVC is non-stationary in level form but when first-order differencing is performed it turns out into stationary. Thus, it can be concluded that each series is stationary at 1st difference.

As the pooled data is time series data, therefore, there can be problem of auto correlation. In the present study there is no auto correlation as Durbon Watson value is near to 2 (value=1.63 see table 4). The panel data is analyzed using Random effect model. Firstly the Hausman test is applied to select appropriate model amongst fixed effect and Random effect model. Following are the assumption of Hausman test:

H₀: Random effect model is appropriate.

H₁: Fixed effect model is appropriate.

Table 3
Correlated Random Effects - Hausman Test

<i>Test Summary</i>	<i>Chi-Sq. Statistic</i>	<i>Chi-Sq. d.f.</i>	<i>Prob.</i>
Cross-section random	4.232207	2	0.1205

<i>Cross-section random effects test comparisons</i>				
<i>Variable</i>	<i>Fixed</i>	<i>Random</i>	<i>Var(Diff.)</i>	<i>Prob.</i>
LDIV	1.842719	2.207300	0.929288	0.7053
LD_E	-0.678495	-0.424586	0.019486	0.0689

Cross-section random effects test equation:

Dependent Variable: LOGSVC

Source: Computed

The above table shows the result that the Random effect model is appropriate as null hypothesis is accepted because p-value is more than 0.05 level. Consequently, the Random effect model is further applied to examine the effect of LDIV and LD/E on dependent variable LSVC.

Table 4
Result of Random effect model

Dependent Variable: LOGSVC				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
C	-5.987630	2.827238	-2.117838	0.0359
LDIV	2.207300	1.001012	2.205067	0.0290*
LD_E	-0.424586	0.333575	-1.272838	0.2051

Effects Specification				
			<i>S.D.</i>	<i>Rho</i>
Cross-section random			3.664728	0.5941
Idiosyncratic random			3.028862	0.4059

Weighted Statistics				
R-squared	0.040041	Mean dependent var		0.091375
Adjusted R-squared	0.026980	S.D. dependent var		3.093793
S.E. of regression	3.051772	Sum squared resid		1369.057
F-statistic	3.065735	Durbin-Watson stat		1.630138
Prob(F-statistic)	0.049612			

* Values are significant at 0.05 level

Source: Computed

In table 4, the result inferred that only dividend has influence on the Shareholder Value Creation. As the significant value is less than 0.05, therefore our null hypothesis is rejected that there is no significant effect of dividend on the Shareholder Value Creation. But the null hypothesis for Capital structure is accepted as p-value is more than 0.05. It is because the dividend directly impacts the cost of capital, earning per share and market price.

CONCLUSION

The present study is conducted to examine the effect of determinants on SVC. Random model is applied to examine the effect of determinants on SVC. It is further examined that only dividend is having effect on SVC. It implied that if there is increase in the value of dividend then SVC also increases and vice-versa. It is because dividend is the important constituent of SVC. It directly affects the cost of capital. Shareholders while making investment decisions consider only the return. Further, this study may help the investors in taking crucial decision of investment as shareholder value creation using PFM is calculated after considering the market values of shares. The investors can invest into these companies to get the highest return in terms of shareholder value.

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Annexure -1
List of 30 Companies of BSE-SENSEX as on 31st March 2014

<i>Industry</i>	<i>Companies</i>
Aluminium	Hindalco Industries Ltd.
Automobiles - 2 and 3 wheelers	Bajaj Auto Hero Honda Motors Ltd. Mahindra & Mahindra Ltd. Maruti Suzuki India Ltd. Tata Motors Ltd.
Banking	Axis Bank HDFC Bank Ltd. ICICI Bank Ltd. State Bank of India
Cigarettes	I T C Ltd.
Computers - software	Infosys Technologies Ltd. Tata Consultancy Services Ltd. Wipro Ltd.
Electrical equipment	Bharat Heavy Electricals Ltd.
Engineering	Larsen & Toubro Ltd.
Finance - housing	Housing Development Finance Corporation Ltd.
Gas	GAIL India
Mining	Coal India Sesa Goa
Oil exploration/production	Oil & Natural Gas Corporation Ltd.
Personal care	Hindustan Unilever Ltd.
Pharmaceuticals	Cipla Ltd. Dr. Reddy's Lab. Sun Pharma
Power	NTPC Ltd. Tata Power Co. Ltd.
Refineries	Reliance Industries Ltd.
Steel and steel products	Tata Steel Ltd.
Telecommunication - services	Bharti Airtel Ltd.