CHAPTER - V

FUNDAMENTAL COMPARISON OF PRICING AND MIS-PRICING

FUNDAMENTAL COMPARISON OF PRICING AND MIS-PRICING

The present Chapter is divided in to two sections. Section-I deals with overall financial status and derived values of selected financial variables of the PSUs, covering the span of the study. Section-II deals with derivation of share values according to different selected methods of pricing based on the threadbare discussions made in the yester chapters As mentioned in Chapter IV, out of 240 Central Government PSUs, in 39 PSUs, The Government of India has started the process of disinvestment as a part of implementation of privatization strategy, since 1991-92 To have a holistic view, all the 39 PSUs are covered in the study

SECTION – I

5.00 GLIMPSES OF FINANCIAL PERFORMANCES OF PSUs

Besides presenting the PSU-wise details about derived values of a share according to Selected Network of Pricing Methods, it is considered pre-requisite to give overall view about the health status of each the PSU, for which figures are derived from the published data used as a source. The details are computed regarding Profit After Tax (PAT), Cash Profit After Tax (CPAT), Net Operating Profit After Tax (NOPAT), Earning Per Share (EPS), Dividend Per Share (DPS), Cash flows (CF), and Return on Equity (ROE) While the PSU-wise computation of PAT, EPS, DPS and ROE (%) are self explanatory, the methodology of deriving of other financial variables including the above have already been discussed in detail in the Chapter IV, however, in brief, they are explained here CPAT is derived by adding non-cash charges to PAT NOPAT is derived by deducting depreciation and cash taxes from EBDIT. Net Operating Cash flow (CF) as defined in para 4.04 of the Chapter IV is considered as base Cash flow for discounting by Weighted Average Cost of Capital for deriving Cash flow to equity. From the derived discounted Net Operating Cash flow, all the

long term liabilities are deducted and market securities are added to derive Net Cash flows to equity holders.

5.01 SUMMARY OF PSUs WISE FINANCIAL DATA

The PSU-wise summary details of the derived financial parameters, as discussed hereinabove are presented in Table 5.01 for all the 39 PSUs. While detailed discussions, comments, findings, ological and objective conclusions for *disinvestment pricing and mispricing* are provided in the next Section, the brief observations on financial status of all the 39 PSUs are made hereunder.

From the analysis of health status of a portfolio of all the 39 PSUs for the period under reference, it has been observed that profitability of PSUs have had not shown consistence positive stable growth, notwithstanding their monopoly / near-monopoly industry status in India It remained oscillating during the period under reference Likewise the results of CPAT, NOPAT, CF, and the resultant EPS, ROE, etc. evinced the similar trend, albeit with some marginal deviations. As regards dividend, the PSUs have had not followed any consistent dividend policy to reward the Sovereign investor prior and upto respective disinvestment years. However, of late in the post disinvestment era, they realised the fact that it is desideratum to declare and pay dividend to the Sovereign investor. Most of the PSUs have had positive free net operating cash flows, however, the same turned out negative due to mammoth capital spending and investments, outstripping the internal cash accruals including depreciation. Since, the huge investment had been financed by relatively conservative capital structure of high equity and low debts, the benefits of leverage in the capital structure are not adequately found realised Many a times, the phenomena of diversion of short term funds for long term uses are also observed, in addition to the cross subsidization of financial and non financial sops amongst the PSUs *inter se.* The mis-match of the objectives with commercial expediency has further created imbalances in their financial structure as compared to the private sector. The culmination of all these idiosyncrasies of Indian PSUs have resulted into *not adding the desired value and not creating sufficient wealth, thus not imparting adequate total business returns to the Sovereign investor in India, as compared to the private sector.*

TABLE : 5.01

GLIMPSES OF PSU-WISE FINANCIAL DATA

(1) *M/S ANDREW YULE AND COMPANY LTD.* ***(RS. IN LACS)***

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	410	189	186	-2171	17	-2015	147
CPAT	976	730	733	-1687	699	-1238	972
CF	-167	119	262	-8224	-113	1694	-3999
NOPAT	1048	1008	1199	-918	1412	-210	1632
EPS	3 76	1 76	1 76	-20 54	0 16	-16 69	0.29
DPS	2 20	1 78	1.80	0	0	0	0
ROE(%)	9 40	4.54	4 63	-17 71	0 14	-18 87	1 00
MP	50 00	53 00	43 00	30 00	30 00	30 00	24 80

(2) *M/S BHARAT ELECTRONICS LTD.* ***(RS. IN LACS)***

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	3375	3093	3386	1579	2070	5119	5340
CPAT	7702	7331	7304	5553	6104	9365	10257
CF	7311	-20638	3650	27324	10144	-1450	16927
NOPAT	5807	6822	7902	4611	4423	8869	8656
EPS	9 63	9 16	9 13	6 94	7 63	11 71	12 82
DPS	1 60	1 60	1 60	1 60	1.60	2 20	2 20
ROE(%)	12 78	10 35	10.58	5 07	6.52	16.57	15 22
MP	n a	n a	150 00	150.00	152 50	124.00	28 00

(3) *M/S BHARAT EARTH MOVERS LTD.* ***(RS. IN LACS)***

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	3482	3644	3953	1050	1446	1816	1065
CPAT	6097	6596	6642	3562	3986	4593	3973
CF	-4978	-7050	-9308	-2047	1264	-910	4699
NOPAT	7442	8408	8823	5965	6978	8088	7613
EPS	11 61	12 15	13 18	2 85	3 92	4.93	2 89
DPS	1 35	1.50	1 50	0 44	0 38	0 45	0 78
ROE(%)	9 15	8 83	8 95	1 09	2 60	3 20	1 87
MP	n a	n a	175 00	57 50	13.50	7 00	12 85

(4) *M/S BHARAT HEAVY ELECTRICALS LTD.* ***(RS. IN LACS)***

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	15008	13316	13687	14093	35016	59821	86167
CPAT	24344	26871	27105	27325	48009	59821	86167
CF	-22109	1247	24926	46493	23004	26176	75693
NOPAT	21249	19330	189973	19704	41113	55390	75832
EPS	6 13	5 44	5 59	5 76	14 31	18 923	29 40
DPS	1 50	1 50	1.50	1 50	2 00	2 20	2 75
ROE(%)	20 58	15 28	13.55	12 21	23 52	24 06	28 89
MP	n a.	80 00	87 50	115 00	122.50	292 50	360 00

(5) *M/S BHARAT PETROLIUM CORPORATIONLTD.* ***(RS. IN LACS)***

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	14846	17007	21751	29218	38577	40760	52140
CPAT	25216	31320	35406	55248	60370	63341	90375
CF	97215	36545	32646	57075	32301	538	186714
NOPAT	16977	18855	24005	31579	40704	45437	59436
EPS	29 69	34 01	43 50	19 48	25 72	27 17	34 76
DPS	3 00	3 30	3.30	3 30	3.30	3 63	5 50
ROE(%)	18 62	17 88	18 88	20 94	22 28	19 55	20 17
MP	n a.	600 00	1375 00	290 00	290 00	362 50	367 50

(6) M/S BONGAINGOAN REFINERY & PETROCHEMICALS LTD. ***(RS. IN LACS)***

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	3598	2901	3791	8266	11474	5481	9254
CPAT	6758	5893	5790	8266	11474	5481	9254
CF	2759	7237	10746	6574	7786	6307	7244
NOPAT	3756	3180	4103	6584	9598	3539	7916
EPS	1.80	1 45	1 90	3 06	4 51	1 45	3 40
DPS	0 50	0 50	0 70	1 00	1 35	0.48	1 12
ROE(%)	9.95	7 60	9 43	13 74	17 74	5 50	11 84
MP	n a	35 00	45 00	33.75	19 75	12 25	12 90

(7) M/S C. M. C. LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	153	294	-955	747	1266	257	680
CPAT	641	823	-153	1440	1924	1107	1382
CF	722	1655	271	1919	1147	1110	684
NOPAT	569	712	-501	1136	1531	559	943
EPS	1 01	1 94	-6.30	4 93	8 36	1 70	4 50
DPS	0	0	0	0	0	0 80	1 00
ROE(%)	9 03	13 85	-66.00	38.17	38 76	7.55	17 69
MP	n.a	n a	n a	n a	n.a.	34 75	99 20

(8) M/S COCHIN REFINERIES LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	5604	8712	6825	10477	11108	9293	22041
CPAT	8249	11620	9052	13559	16088	13700	28616
CF	4072	12435	10882	4926	11546	14441	12688
NOPAT	6294	8798	7325	11706	13399	11152	24769
EPS	8 13	12.64	9 90	15 20	16 10	13 50	31 98
DPS	2 10	2 40	2 60	2 60	2 870	2 80	3 52
ROE(%)	19 10	23.94	16 47	20 91	18 73	13 94	25 55
MP	n a	157 50	261 25	232.50	172.00	100 25	234 00

(9) M/S CONTAINER CORPORATION OF INDIA LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	1321	1693	2102	2389	5222	9526	11580
CPAT	1328	1743	2477	3122	6117	10567	12736
CF	1504	2246	2113	3340	4016	1348	10154
NOPAT	1321	1753	2209	2484	5302	9605	11631
EPS	2 80	2 60	3 20	3 70	8 00	14.70	17 80
DPS	0 10	0 30	0 40	0 60	1 20	2.20	2 20
ROE(%)	20 20	17 20	18 00	17.40	28 80	36.30	31 80
MP	n.a	n a	n a	n a	140 00	430 00	457 00

(10) M/S DREDGING CORPORATION OF INDIALTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	1618	1488	1267	3023	3304	3338	4328
CPAT	4055	3893	4098	5816	5699	5660	6529
CF	2000	556	-1601	1019	4513	2499	5124
NOPAT	2056	1932	1584	3377	3689	3727	4710
EPS	5 78	5 30	4.53	10 80	11 80	11.92	15 46
DPS	1 00	1 10	1 20	1 40	2 10	2 50	3 65
ROE(%)	13 80	11 78	8.90	24 45	23 64	20 09	21 70
MP	n a	n a	n a	n a	n a.	n a	86 50

(11) M/S ENGINEERS INDIA LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	2592	2935	6031	5988	6830	7205	7325
CPAT	2930	3318	6470	6525	7426	7860	8003
CF	389	1004	5600	3454	-1623	1634	13516
NOPAT	2624	2949	6038	5993	6831	7205	7325
EPS	259 20	146.75	301 55	33 27	37.94	37 94	39 15
DPS	10 00	10 00	10 00	2 00	2 50	3 15	4 40
ROE(%)	22 62	20 73	30 17	23 37	21 34	18 61	16 20
MP	n.a	n a	n a	n a	n a	n a	563 75

(12) M/S THE FERTILISERS & CHEMICALS (TRAVENCORE) LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	2900	285	1241	7871	7676	6178	5394
CPAT	7659	5189	3962	10608	10418	9034	8541
CF	-401	-1764	6123	7245	3501	18320	1705
NOPAT	4139	2506	3021	8997	8991	6950	6387
EPS	0.85	0 08	0.36	2.20	2 15	1 75	1 50
DPS	0 00	0 00	0 00	0.00	0 50	0 55	0 00
ROE(%)	6 92	0 67	2 82	14 94	13 10	9 85	7 91
MP	n a	n a	55 00	55.00	55 00	55 00	55 00

(13) M/S GAS AUTHORITY OF INDIA LTD. *(RS IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	9355	21053	32054	36762	51552	61955	102031
CPAT	28881	44070	54881	60059	72357	85418	126876
CF	21783	22576	40401	57238	154527	164035	49930
NOPAT	14229	25913	36531	40999	54944	65447	106228
EPS	1.10	2.50	3.80	4 35	6 10	7 30	12 10
DPS	0 00	0.25	0 35	0 60	1 00	1.65	2 20
ROE(%)	10.90	20 05	24 05	22 20	24 70	24 10	29 95
MP	n a	n a	n.a	n a	n a	n.a.	61 70

(14) M/S HINDUSTAN CABBLES LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	-2451	1211	129	1209	-8433	-146913	-17394
CPAT	-893	2823	1750	2933	-7143	-12436	-17394
CF	6225	-8188	-157	-2746	-9383	5476	276
NOPAT	-633	3434	2409	4271	-4083	-8724	-10373
EPS	-5 35	1 50	0 16	1 20	-5 80	-9.08	-10 55
DPS	0.00	0 00	0 00	0 00	0 00	0 00	0 00
ROE(%)	-24 95	8 20	0 85	6 90	-61 25	-2890.00	79 30
MP	n a	23.00	23 00	23 00	23 00	23.00	23 00

(15) M/S HINDUSTAN COPPERS LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	5490	2639	-6955	7226	7584	-13062	-16972
CPAT	12839	9345	-1762	12964	13099	-6884	-9331
CF	12690	7533	10270	9218	-356	2680	3910
NOPAT	7732	4742	-5083	9225	9726	-10744	-13144
EPS	1 80	0 85	-2 30	2 20	2 25	-3 85	-4 95
DPS	0.00	0 00	0 00	0 00	0 14	0 00	0 00
ROE(%)	15.00	6 70	-22.20	17 40	15 30	-36.60	-102 10
MP	n a	n a	n a	n.a	165 00	148.50	99 00

(16) M/S HINDUSTAN PETR0LIUM CORPORATION LTD. *(RS IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	12976	22714	30697	39129	51424	61222	70116
CPAT	23036	34755	45397	60379	71507	90438	109053
CF	25373	24383	20300	57581	45807	-22962	274729
NOPAT	15976	25683	34278	43274	53919	66781	75640
EPS	20 33	35 58	48 10	19 65	24 85	29 35	31 65
DPS	3 00	4 00	5 00	1 95	3 40	4.40	5 40
ROE(%)	14 40	21 25	22 40	19.75	19 15	17 90	16 20
MP	n a	605 00	1525 00	315 00	330 00	376 50	452 00

(17) M/S HINDUSTAN PHOTOFILMS MFG. CO. LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	291	-11731	-6955	-5686	-6951	-9130	-17629
CPAT	812	-11340	-6299	-5230	-6578	-8688	-13814
CF	3243	-729	669	-3952	2336	1342	-24849
NOPAT	1919	-9809	-4929	-3404	-4077	-5346	-7423
EPS	0 20	-7 65	-4 55	-3.25	-3 65	-4.65	-8 99
DPS	0 00	0 00	0 00	0 00	0.00	0 00	0 00
ROE(%)	1 65	-188 20	-2838 8	132.15	74 50	49 95	45 85
MP	n a	n a	30 00	30 00	30 00	30 00	30 00

(18) M/S HINDUSTAN ORGENIC CHEMICALS LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	3274	2804	2167	2766	5813	1564	-82
CPAT	4891	4707	2951	3741	7110	3302	2358
CF	1436	4350	3141	-1923	9993	2666	2027
NOPAT	3513	3266	2564	3359	6155	2099	1791
EPS	6.65	5 68	4 39	4 12	8 65	2 33	-0 12
DPS	1 50	1 50	1.50	1.30	2.00	0 50	0 55
ROE(%)	16 70	12 95	9 40	8 10	15.05	4 10	- 025
MP	n a	110 00	75 50	47.50	33 25	28.00	14 00

(19) M/S HINDUSTAN ZINC LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	9336	6286	455	7643	4244	3022	7377
CPAT	16570	16267	6614	12827	9555	8452	13117
CF	16863	2620	4520	8101	4658	7038	29959
NOPAT	11139	9043	3544	10191	6623	5485	9115
EPS	2 30	1 50	0 11	1 80	1 00	0.72	1 75
DPS	1 00	0 63	0 00	0.00	0.15	1 06	0 39
ROE(%)	13 95	9 05	0 65	9 85	5 20	3 60	8 35
MP	n a	21 25	20 00	21 00	23 50	45.25	28 45

(20) M/S HINDUSTAN MACHINES TOOLS LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	2608	372	-11926	-7920	-5589	-1878	-2914
CPAT	5572	3817	-8710	-5156	-3673	350	-952
CF	2491	-10227	-8450	5599	-865	1606	492
NOPAT	5127	3505	-7941	-3765	-1302	2954	2376
EPS	2.97	0 42	-13 60	-9.05	-5.85	-1.85	-2 68
DPS	0.60	0 00	0.00	0.00	0.00	0 00	0 00
ROE(%)	9 45	1 50	-93 85	-139 45	-154 25	-75 45	-141 05
MP	n a	42 50	32 00	30 00	15 00	9 75	8.45

(21) M/S INDIAN OIL CORPORATION LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	78678	67699	77200	101886	124871	140822	170650
CPAT	96356	91664	109415	143558	175782	220218	274334
CF	209104	-215105	106549	323184	-20967	-229167	818490
NOPAT	109682	85642	95813	126062	155119	202141	243850
EPS	63 83	54 92	62.63	26.17	32 08	36 20	43 85
DPS	3 30	4 00	4 00	2 70	0 40	4 40	5 50
ROE(%)	18 20	13 70	13 60	15 40	18 85	15 45	16.10
MP	n a	n a.	n.a	n a.	750 00	625 00	598 00

(22) M/S INDIAN PETRO – CHEMICALS LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	5502	13177	8920	56231	60369	51020	24369
CPAT	22573	35764	20042	68347	72570	66087	49279
CF	2143	9301	-5599	45037	77840	-7671	29257
NOPAT	13469	23225	19396	65326	69168	62658	41242
EPS	2 96	6 75	4.40	22 60	24 25	20 55	9 80
DPS	1 50	1 90	2 00	2 80	4 00	4 40	4 440
ROE(%)	7 65	14 00	7 90	28 70	24 50	18.10	8 25
MP	n a	92 50	63.75	150.00	157.00	148.00	68 50

(23) M/S INDIAN RAILWAY CONSTRUCTION CO. LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	1197	1740	1695	2605	11268	2395	4261
CPAT	2080	3409	3298	4018	12351	3453	5322
CF	-3691	-2725	4480	33104	8988	109	1318
NOPAT	1804	2397	2244	3530	11586	2545	4320
EPS	24 20	35 15	34 25	52 60	227.64	48 40	86 10
DPS	1.00	1 00	1.25	2 50	4.00	4 40	19 25
ROE(%)	4 80	5 50	5 10	7 55	34 50	7 15	20 80
MP	n a	n a	n a	n a	305 00	305 00	305 00

(24) M/S INDIAN TELEPHONE INDUSTRIES LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	5723	8589	8435	-8191	-28396	-5098	1523
CPAT	12111	15488	14624	-3367	-23368	-1818	5261
CF	11344	-15321	-5934	-7216	2576	7998	12813
NOPAT	10294	13810	15209	-539	-20199	5543	11338
EPS	6 50	9 75	9 60	-9 30	-32 30	-5 80	1 75
DPS	1.20	1 60	2 00	0 00	0 00	0 00	0 00
ROE(%)	17.25	20 80	16 20	-17 75	-134 98	-29.84	16 02
MP	n a	n a	175 00	57 50	13 50	7 00	12 85

(25) M/S INDIAN TOURISM & DEVELOPMENT CORP. LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	286	1005	1221	2836	4775	5361	4340
CPAT	859	1941	2048	3458	5411	6176	4958
CF	206	1328	1039	2451	2059	4110	2773
NOPAT	493	1207	1369	2890	4850	5370	4345
EPS	0 45	1 55	1 80	4 20	7 10	7.95	5 80
DPS	0.00	0 22	0 30	0 85	1.40	2.15	2 00
ROE(%)	2 90	9 60	9 95	19 20	25 85	24 20	17 55
MP	n a	n a	n a.	n a	n a	n a.	68 00

(26) M/S KUDREMUKH IRON CO. LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	13781	9975	9391	6356	9546	7238	8182
CPAT	16349	12616	12076	9271	12824	11960	13480
CF	8727	8665	10688	12969	10312	6744	17412
NOPAT	13855	10129	9615	6479	9735	7477	8460
EPS	2 17	1 57	1 48	1 00	1.50	1 14	1 29
DPS	0 00	0 30	0 30	0 30	0.30	0 30	0 40
ROE(%)	23 63	15 00	12 70	8 10	11 10	7 95	8 45
MP	n a	n a.	n a	n a	10 00	10 00	10 00

(27) M/S MAHANAGAR TELEPHONE NIGAM LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	17123	20837	34416	57658	72959	93279	113013
CPAT	48213	58745	74808	100565	119507	144783	171575
CF	-38217	-30629	-21129	16776	88378	34753	166848
NOPAT	24240	28739	42169	66764	81756	101693	118643
EPS	2.85	3 47	5 75	9 60	12 16	15 55	17 95
DPS	0 00	0 00	0 00	0 00	0 00	0 00	0 00
ROE(%)	14 70	15 70	21 40	27 10	26.65	25 50	25 85
MP	n a	n a	195 00	172 50	178 00	241 00	262 80

(28) M/S THE MINERALS & METALS TRADING CO. LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	9168	9229	5189	6744	5016	2738	1735
CPAT	9348	9403	5373	6931	5265	3116	2551
CF	89199	-7296	19443	-20812	4686	10112	3234
NOPAT	12740	11329	5706	8646	4771	3164	3006
EPS	18 35	18 45	10 38	13 49	10.00	5 50	3 45
DPS	3 00	3 00	3.00	3 00	3.00	3 30	2 20
ROE(%)	21 48	18 31	9 60	11 37	8 00	4 30	2 95
MP	NL	NL	NL	NL	NL	NL	NL

(29) M/S MADRAS REFINERY LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	4537	7094	7939	9219	9411	10217	12927
CPAT	8019	11686	11222	14774	16600	18433	21375
CF	2859	72	1211	12308	16924	-10058	27435
NOPAT	5132	9023	10619	14548	14854	17724	22149
EPS	4.00	6 22	5 85	6 43	6.55	7.11	8 80
DPS	2 10	2 50	2 10	2.40	2 50	2.75	3 00
ROE(%)	16.00	21.85	14 40	13 85	12.95	12 85	14 20
MP	n.a	90 00	195 00	87 50	57 50	36.25	57 65

(30) M/S NATIONAL ALLUMINIUM CO. LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	5914	13488	15672	30017	61455	49176	54697
CPAT	29187	35440	38001	58030	89590	75805	81901
CF	23948	17803	39616	78633	88001	65086	31589
NOPAT	15103	18653	20511	35803	64956	50660	56879
EPS	0.46	1 05	1 22	2 33	4 77	3 82	4 24
DPS	0 00	0.123	0 20	0 50	0 35	0.88	1 10
ROE(%)	4 10	8 60	8 90	14 95	23.75	16 55	16 20
MP	n a.	20 22	31 00	23 00	23 50	45 25	28 45

(31) M/S NATIONAL FERTILIZERS LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	8361	11147	38911	12193	5406	7939	23113
CPAT	15573	18481	45545	20079	12385	7939	29113
CF	15022	19259	42688	26076	-2689	26124	8735
NOPAT	11331	13412	39831	12798	7395	4166	29184
EPS	1 70	2 27	7 93	2 50	1 10	0 25	3 85
DPS	0.44	0 50	1 00	1 00	0 00	0 00	1 15
ROE(%)	10.85	12 97	32 45	9 60	4 10	0.95	14 15
MP	n a	n a	n a	n a.	n a	13 00	26 85

(32) M/S NATIONAL MINERALS DEVELOPMENT CORP. LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	12021	8430	7074	7218	9553	13000	17501
CPAT	14021	10728	9851	10723	13474	16704	20774
CF	10276	11266	11465	9928	3107	10122	19657
NOPAT	12324	8748	7236	7304	9558	13002	17501
EPS	9 10	6 38	5 35	5 45	7 25	9.85	13 25
DPS	2 00	2 00	2 00	2 00	2 00	2.75	2 75
ROE(%)	44.45	26 50	19 65	17.80	19.90	22 55	24 55
MP	n.a.	n a	10 00	10 00	10.00	10 00	13 10

(33) NEYVELI LIGNITE CORPORATION LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	10169	8069	11377	17608	27258	28009	27108
CPAT	23637	29435	34694	43702	54387	63160	64282
CF	23515	14162	-32898	21146	41007	51954	89966
NOPAT	13358	14574	18167	25684	34640	34720	33233
EPS	0 65	0 50	0 65	1 00	1 50	1 55	1 50
DPS	0 00	0 00	0 00	0 00	0 00	0 00	0 00
ROE(%)	4 68	3 42	4 42	6 43	9.00	9 40	7 80
MP	n.a	n a	n a	n a.	47 50	43.00	23 00

(34) OIL & NATURAL GAS CORPORATION LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	40832	78820	200939	193107	194544	203365	267778
CPAT	260247	283216	389533	452652	550693	558154	680664
CF	134157	367596	403104	416523	513933	495366	869410
NOPAT	75158	112900	213893	246609	246682	252771	314437
EPS	11 90	23 00	58 60	55 80	13.65	14 25	18 80
DPS	1 00	1 00	1 00	1 00	0.95	0.95	0 95
ROE(%)	4.25	7 25	15 15	12 50	11 05	10 15	12 00
MP	n a	n a	n a	n a	212.00	206 25	278 3

(35) M/S RASHTRIYA CHEMICALS & FERTILIZERS LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	1878	-2658	-1208	16719	7433	7688	18937
CPAT	11764	7844	8172	19534	9814	10292	22128
CF	617	2437	2097	45682	4250	7843	7432
NOPAT	4088	-1018	1073	17942	7917	8802	21239
EPS	0 35	-0 48	-0 22	3 05	1.35	1 40	3 45
DPS	0.20	0.20	0 00	0 50	0 30	0.40	0 75
ROE(%)	2.35	-3.25	-1.44	17.12	7.20	7 06	15 33
MP	n a	20 00	22 50	21 00	10.25	7 00	7 80

(36) M/S STEEL AUTHORITY OF INDIA LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	36572	42340	54533	110858	131861	51517	13299
CPAT	107018	118565	109310	164399	190342	120587	96079
CF	97875	5043	-17043	224913	48431	-2777	49080
NOPAT	58917	73668	91433	149183	175513	118747	114293
EPS	0 92	1 06	1 37	2 78	3.20	1.25	0 30
DPS	0.250	0 20	0 40	0 60	0 65	0 30	0 10
ROE(%)	7 40	8 05	9 65	16 90	16 60	6.45	1 60
MP	n a.	18 00	50 00	34 00	27 50	19.25	10 00

(37) M/S STATE TRADING CORPORATION OF INDIA LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	2536	1854	2264	2210	2205	3772	257
CPAT	2670	1985	2397	2346	2345	3927	423
CF	11837	2587	5064	4284	-571	-67238	16655
NOPAT	4875	3716	3049	2864	3155	4784	871
EPS	8.45	6 20	7 55	7 35	7 35	12.55	0 85
DPS	3 00	3 00	3 00	3 00	3 00	3.00	3 30
ROE(%)	7 05	5 00	5 90	5.60	5 40	8.45	0 60
MP	n a.	n a	n a	n a	n a.	41 00	45 00

(38) M/S THE SHIPPING CORPORATION OF INDIA LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	10886	14318	16758	20139	32340	13327	24624
CPAT	25159	30366	32884	39672	55580	38395	51029
CF	21392	26951	28698	41635	25365	48447	43285
NOPAT	15078	18862	20798	27174	41080	24718	34260
EPS	3 85	5 10	5 95	7 10	11 45	4 75	8 75
DPS	0 60	1 00	1 50	1 50	2.00	2 20	2 20
ROE(%)	17 65	19 90	19 95	19 95	25.45	9 30	15 15
MP	n a	140 00	115 00	46 25	31 00	36.00	40 00

(39) M/S VIDESH SANCHAR NIGAM LTD. *(RS. IN LACS)*

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
PAT	10414	11237	17610	30307	40956	50474	96791
CPAT	14360	18177	21679	35271	46535	56237	103474
CF	12724	17636	-3427	39855	43194	-77260	325020
NOPAT	10477	11345	18557	32611	41315	50727	96871
EPS	13.00	14 05	22 00	37 90	51 20	54 76	101 90
DPS	3 00	3 00	3 00	3 50	4 50	3 35	1 55
ROE(%)	24 50	21 75	26 30	32 10	31 10	17 00	23 20
MP	n.a.	210 00	1250 00	710 00	1200 00	975.00	770 00

SECTION – II

5.02 DETERMINATION OF SHARE VALUE OF PSUs DISINVESTED

As discussed at the outset in the Chapter I in the objectives of the study, this is the main and staple objective of the study Based on, *a posteriori* discussions of methods for deriving share values based on the methods selected in the Chapter IV, this section intends to present the value of share derived according to different methods for each of the PSU. It is also found that in *20* PSUs, the disinvestment was carried out in more than one installment with different disinvestment prices in each of the eleven rounds. Therefore, under the circumstances, to have a precision, the share valuation according to different selected methods has been carried out as many times (yearwise) as the disinvestments were made

The methods selected for the purpose of the study are already mentioned and are discussed at length in Chapter IV In addition to the above, in the said Chapter, detailed discussions on the assumptions made, methodology used, and use of the latest scientific techniques for deriving other crucial financial variables such as, growth rates in cash flows, risk free rate, return on market, beta of the security, cost of capital, cost of debts, weighted average cost of capital based on CAPM, de-levering, un-levering and re-levering of betas to smooth out the effect of leverages in the capital structure, returns required by the investor, deriving of terminal value, economic profit, tax rates, market prices, etc. have also been discussed under the head of each of the method of valuation

Based on the above discussed methodology and procedure, the share values are derived for all the 39 PSUs. As the major disinvestments were carried out in four years viz., 1991-92, 1992-93, 1994-94 and 1995-96 as mentioned earlier, for all these years share values are derived for all the 39 PSUs As the disinvestment in the first year 1991-92 was carried out in bundles, the PSU-wise disinvestment price (DP) is adopted from the data furnished by CMIE and for rest of the disinvestment years,

the same is computed based on the data published in the annual Reports of Public Sector Enterprises[2] and by Simrit Kaur[3]. Table 5.02 through 5.05 exhibit PSU-wise and disinvestment yearwise derivation of share values according to Selected Network of Pricing Methods. Moreover, *a posteriori*, in this section, strategic, economic and statistical computation and objective analysis of Selected Network of Pricing Methods for disinvestment have also been made. While making these types of comparison, the following issues are objectively, ologically, plausibly and scientifically answered:

(a) Computation and analysis of equity share prices of 39 Indian PSUs based on Selected Network of Pricing Methods, which are practiced all over the globe by the acquirer and the divestor are conducted. These results have been exhibited in Tables 5.02 through 5.05.

(b) Whether, in a typical decision of year-wise disinvestment in general and in particular, for Indian disinvestments, different methods of pricing impart different values of an equity share? Since, the answer found is 'yes', whether the difference is statistically significant or not. To scientifically answer this question, statistical tests are conducted both for *intra-and inter-pricing methods* using the parametric (ANOVA) test. The results of the statistical tests, *a posteriori*, have rejected the "**null hypothesis**" that there is no difference in the means of Selected Network of Pricing Methods for disinvestment between and within the group of SNPM. Moreover, **descriptive statistics** such as, mean, median, standard deviation, kurtosis, skewness, range-minimum and maximum are also computed for the purpose of deriving ological, plausible and scientific conclusions.

(c) Thereafter, Disinvestment Price (DP) is computed with each selected methods of pricing and similar statistical tests are conducted. The statistical tests have also rejected the "null hypothesis" that there is no significant difference between the annual average disinvestment price vis-à-vis the grand mean of Selected Network of Pricing Methods for disinvestment. The quantification of year-wise **under-realisations** from major disinvestments in a decade is computed per an equity share of Rs.10/- alongwith the year-wise amount realised per equity share disinvested. Sensitivity analysis is also carried out for the purpose, under reference.

(d) The 'in extenso' study of economic and statistical analysis aforesaid have, *ipso facto* and unequivocally established on record that the phenomena of mis-pricing resulting in to astronomical amount of under pricing in the process of major disinvestment in India have had taken place. To test the mis-pricing scientifically, statistical tests are also conducted, *inter alia*, by comparing the year wise Mean Value of Disinvestment Price with.

- The grand mean value derived from the Selected Network of Pricing Methods christened as Fundamental comparison of disinvestment pricing and mispricing.
- The market price (Market Price Analysis) covering both

(i) the short-term mis-pricing of initial Disinvestment Price with varying time periods of 1st day, 15th day and 30th day listing/trading Market Price in India,

(ii) the long-term performance of Disinvestment Price with Market Price from the 1st year of listed Market Price following the year of disinvestment, through the Financial Year 1997-98. This scientific analysis is christened as Market comparison of disinvestment pricing and mispricing, *inter alia*, by computing raw returns known as UNADJUSTED RETURNS (UAR) and MARKET ADJUSTED RETURNS (MKAR) based on the model used by Dewenter and Malatesta (1996)[4].

(iii)Under-realisations are also evidenced from the observed results of computation of average modified Tobin's Q-Ratio for the PSUs disinvested

The detailed analysis of Market Price comparison is carried out in the Chapter – VI (*infra*).

5.03 COMPARISON OF EQUITY SHARE PRICES BASED ON SNPM

Based on the discussions made in the previous chapter with regard to methodology for computation of Selected Network of Pricing Methods and in view of the prevailing facts and circumstances existed at the time of disinvestment in India, equity share prices of 39 Indian PSUs have been computed. The following tables depict the year-wise disinvestments, PSUs –wise disinvestment, and comparative computation of equity share prices (Rs.10/- each) based on seven methods of pricing selected. They are collated and commented as under.

TABLE : 5.02
PSUs WISE COMPUTATION AND COMPARISON OF DERIVED EQUITY SHARE PRICES BASED ON SELECTED NETWORK OF PRICING METHODS FOR DISINVESTMENT YEAR 1991-92.

SELECTED NETWORK OF PRICING METHODS – 1991-92									
PSUs	***NAV***	***PECV***	***FV***	***NPV***	***SVA***	***PEM***	***#MVAA***	***AVG.***	***DP***
AYCL	38 35	25 80	32 05	-107 37	-19 85	78 90	146 60	*27 78*	*10 00*
BEL	31 95	23 80	27 90	79 45	76 15	190 30	134 70	*80 61*	*30 00*
BEML	116 55	101 40	109 00	-195 55	18 50	331 10	417 20	*128 31*	*148 05*
BHEL	34 20	22 10	28 15	461 35	582 05	112 00	100 75	*191 51*	*38 10*
BPCL	132 80	162 75	132 80	2497 00	1026 45	641 90	272 20	*695 13*	*243 90*
BRPL	16 80	12 55	16 80	32 80	18 80	36 50	20 70	*22 14*	*30 80*
CMCL	10 95	0 00	5 45	42 45	25 50	-28 30	53 35	*15 63*	*8 00*
CONCOR	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
CRL	36 65	37 80	37 15	127 30	124 10	182 45	207 95	*107 63*	*98 40*
DCIL	37 75	24 05	30 90	61 20	54 10	101 00	138 00	*63 86*	*10 00*
EIL	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
FACT	11 35	3 45	7 40	5 10	7 30	7 50	54 95	*13 86*	*10 10*
GAIL	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
H COP L	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
HCL	26 75	3 35	15 05	-87 50	-41 00	46 35	62 50	*3 64*	*25 20*
HMTL	31 20	44 10	37 65	-33 80	-6 30	24 35	107 70	*29 27*	*18 10*
HOCL	34 60	38 80	36 70	71 30	23 95	117 20	116 30	*62 69*	*56 90*
HPCL	122 40	100.00	111 20	1254 60	618 80	378 30	226 10	*401 63*	*242 70*
HPFMCL	11 80	3 10	7 45	-25 80	-20 65	13 20	70 00	*8 44*	*8 00*
HZL	15 20	11 65	13 40	14 80	8 50	40 70	38 40	*20 38*	*21 70*
IOCL	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
IPCL	37 20	23 75	30 50	84 50	111 55	90 00	262 40	*91 41*	*65 20*
IRCON	372 65	198 10	285 35	337 05	679 00	601 75	578 70	*436 09*	*225 20*
ITDCL	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
ITIL	31 10	24 55	27 80	510 10	23 65	77 50	161 75	*122 35*	*49 50*
KIOCL	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
MMTCL	70 00	77 30	73 65	318 70	278 75	268 40	105 40	*170 31*	*93 00*
MTNL	17 00	10 65	13 80	152 80	128 00	63 45	59 78	*63 64*	*46 30*
MRL	22 90	23.70	23 30	301 00	348 15	97 75	62 40	*125 60*	*39 60*
NACL	13 80	4 25	9 00	18 90	8 35	10 40	93 25	*22 56*	*11 50*
NFL	14 50	2 70	8 70	33 40	17 75	7 00	30 60	*16 38*	*8 50*
NLCL	11 00	3 70	7 35	145 00	61 60	14 15	39 20	*40 29*	*13 10*
NMDCL	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
ONGCL	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
RCFL	15 95	5 65	10 80	4 40	9 00	21 20	11 60	*11 23*	*9 90*
SAIL	11 75	2 85	7 30	-0 60	6 40	13 60	59 40	*14 39*	*13 20*
SCIL	21 55	13 50	17 50	776 70	184 55	113 75	207 35	*190 70*	*34 40*
STCIL	109 60	61 75	85 65	-10 20	146 20	196 00	167 90	*108 13*	*67 00*
VSNL	57 55	81 35	69 45	1308 05	665 90	256 90	115 00	*364 89*	*123 30*
AVG.	***50.53***	***38.28***	***43.97***	***272.57***	***172.18***	***136.84***	***137.40***	***121.68***	***34.85***

#The detailed computation of MVAA is presented in Chapter – VI (*infra*).

- Grand mean of SNPM **Rs.121.68** per equity share of Rs.10/- against grand mean value of Disinvestment Price of **Rs.34.85**.
- Under realisation of **Rs.86.83** per equity share of Rs.10/- (Rs.121.68 – Rs.34.85).

(A) PRICING OF EQUITY SHARES FOR DISINVESTMENT IN INDIA – 1991-92

As an aftermath of announcement of policy decision for disinvestment, the crewise of selection of PSUs for the purpose of disinvestment, methodology of valuation, *modus operandi* of disinvestment, etc. began. It was necessary to lay a sound foundation for the disinvestment process on three main components of strategy, as the first phase of disinvestment process needed to be smooth, non-controversial and also commercially fair to the exchequer and also to the investor. The need to lay a sound foundation for the captioned process impinged upon three major components of the strategy.

(a) The selection of companies to be offered for disinvestment.

(b) The pricing of the equity, and

(c) The logistics of the disinvestment mechanism.

However, in actual practice, the list of companies offered in the first phase of disinvestment had to be limited to choose companies which were, *prima-facie*, such that the investment market could appreciate *sans* much difficulty and price reasonably. Accordingly the final list of 30 companies offered for disinvestment in December 1991 and February 1992 was decided based on various considerations.

The list[5] consists of a mix of 8 very good (Cat. A), 12 good (Cat. B) and 10 not so good (Cat. C) . This was in keeping with Government's decision not to offer only the best but also some not so good but with good track records in a portfolio form The categorization into 'A', 'B' and 'C' categories was purely based on NAV. Those, whose Net Asset Value of Rs.10/- share was above Rs.50/- was rated as 'A', between Rs.20/- and Rs.50/- as 'B' and below Rs.20/- as 'C'. Thereafter, in the crewise of determining logistics of disinvestment, a direct offer of shares to the public was

stated to be not feasible because even with the most sophisticated valuation skill, a fair issue price on company by company basis was impossible to determine, *inter alia*, due to unknown character of PSUs to the market. The risk of over-pricing or under-pricing on a company specific basis was real but reported as clearly unaffordable. Therefore, the Government took a fundamental view of reality and decided to offer randomly structured portfolios of shares, each with a notional reserve price based on an average of NAV and PECV @ 10% capitalization rate and decided to off load the shares to institutional investors as a buffer betwixt the Government and the stock market.

This procedure took cognizance of the reality that the institutional investor, unlike the individual investor, viewed the risk of his investment in a portfolio context. The government took the view again realistic, that the institutional investor would be able to handle this risk much more effectively than individual investors because of their ability to invest substantial amount of money and buy and hold a large number of public sector shares.

Keeping in view the above the Government decided to disinvest shares upto 20% of the share capital held by the government The pricing formula[6] adopted for the referral price was average of NAV and PECV at 10% industry capitalization rate This was stated to be in accordance with the guidelines of CCI, which organisation was in existence at that time.

Disinvestment was done accordingly in this year and the level of disinvestment varied from 5% to 20% keeping in view the share holding of different companies and ensuring that it would not fall below 51% in each case. Shares of 30 PSUs as mentioned in the Table 5.02 where offered in the form of '***bundles***' consisting of 30 PSUs. These bundles were generated in computer and they were offered for bidding to short-listed Financial Institutions and Mutual Funds.

During the first phase of disinvestment, bids were received from 9 parties for a total value of Rs.1,722/- crores These were evaluated against the referral price of each bundle worked out on the basis of each PSU share price as per average of NAV and PECV at 10% capitalization rate. Total number of shares sold during the first phase were 51.62 crores which is only 4.7% of the total government share holdings in 30

PSUs. The average realization per share of Rs 10/- was Rs 27.65 (*supra*, Table 3.10) The second phase of partial disinvestment was undertaken in February 1992. Bids were received from 19 parties for a total value of Rs.1611/- crores against the total reserve price of Rs 1,209/- crores, thus giving a premium about 33.2% of the total government share holdings in 30 PSUs. The average realization per Rs.10/- face value of a share is Rs.45.25 (*supra*, Table 3.10). The total share disinvested during 1991-92 consist only 8% of the total government share holding in 30 PSUs and the bundle realised Rs.3,038/- crores

The average annual realizations from disinvestment during the F.Y. 1991-92 was abysmally low of Rs.34 85 (*ibid*), as against the derived average value of Rs.121.68 i.e. grand mean value of seven methods selected for the purpose of this study, which is exhibited in the Table5.02, hereinabove. Thus, for the first year of disinvestment of portfolio of equity shares of the sovereign investor of India, the under realization based on the above mentioned comparative data computed to ***Rs.86.85 per equity share of Rs.10/-***, thereby the total loss to the Indian Government amounted to Rs.7572/- crores. However, the quantum of mis pricing would be different if the disinvestment price is compared with the individual methods of pricing, *mutatis mutandis*. The difference is also significant and is self-evident from the ANOVA analysis carried out (*infra*), *inter alia*, deriving F–value of 3.5694, thereby rejecting the null hypothesis In other words, *a posteriori*, there are objective and purposive motivations for using the different methods of pricing as practiced and used, all over the globe by the acquirer and the divestor

TABLE : 5.03

PSUs WISE COMPUTATION AND COMPARISON OF DERIVED EQUITY SHARE PRICES BASED ON SELECTED NETWORK OF PRICING METHODS FOR DISINVESTMENT YEAR 1992-93.

SELECTED NETWORK OF PRICING METHODS – 1992-93									
PSUs	***NAV***	***PECV***	***FV***	***NPV***	***SVA***	***PEM***	***MVAA***	***AVG.***	***DP***
AYCL	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
BEL	n.a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
BEML	n a.	n a	n a	n a	n a	n a	n a	*n a*	*n a*
BHEL	29 80	26 20	28 00	1517 00	244 10	108 90	157 50	*301 64*	*73 50*
BPCL	159 50	183 00	171 25	2810 00	648 55	452 00	554 05	*711 19*	*662 35*
BRPL	19 10	10 85	15 00	33 75	20 55	46 80	19 40	*23 64*	*42 10*
CMCL	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
CONCOR	n a.	n a	n a	n a	n a	n a	n a	*n a*	*n a*

SELECTED NETWORK OF PRICING METHODS – 1992-93									
PSUs	*NAV*	*PECV*	*FV*	*NPV*	*SVA*	*PEM*	*MVAA*	*AVG.*	*DP*
CRL	n.a	n a	n a	n.a	n a	n a	n a.	*n a*	*n a*
DCIL	n a	n a	n a	n a	n a	n a	n.a.	*n a*	*n a*
EIL	n.a.	n a	n a	n a	n a	n a.	n.a.	*n a*	*n a*
FACT	12 25	4 45	8 35	3 60	4 75	14 10	56 40	*14 84*	*26 00*
GAIL	n a.	n.a	n a	n a	n a	n a	n a.	*n a*	*n a*
H COP L	12 00	10.95	11 50	-1 20	22 80	26 15	23.00	*15 03*	*23 65*
HCL	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
HMTL	31 50	14 10	22 80	-54 80	-18 00	10 92	220.95	*32 50*	*107 40*
HOCL	n a	n a	n a	n a	n a.	n a	n.a	*n a*	*n a*
HPCL	141 20	135 50	138 35	1280 00	481 50	400 00	426.80	*429 05*	*519 80*
HPFMCL	n a	n a	n a	n a	n a.	n a.	n a	*n a*	*n a*
HZL	16 53	13 65	15 10	165 60	22 95	36 15	26 20	*42 31*	*39 00*
IOCL	n.a.	n a	n a	n a	n a	n a	n a	*n a*	*n a*
IPCL	n a	n a	n a	n a	n a	n a.	n a	*n a*	*n a*
IRCON	n a.	n a	n a	n a	n a	n a	n a	*n a*	*n a*
ITDCL	n a	n.a	n a	n a	n a	n a	n a.	*n a*	*n a*
ITI L	37 70	34.50	36 10	109.30	-12 65	120.80	30.47	*50 89*	*91 95*
KIOCL	n.a	n.a	n a	n.a	n a	n a	n a	*n a*	*n a*
MMTCL	n a	n a.	n a	n a	n a	n a.	n a.	*n a*	*n a*
MTNL	n.a.	n a	n a	n a	n a	n a	n.a	*n a*	*n a*
MRL	n a	n a	n a	n a	n a	n.a.	n a	*n a*	*n a*
NACL	11.20	10 00	10 60	38 30	29 05	12 20	50 55	*23 13*	*18 80*
NFL	15 74	7.30	11 50	21 00	17 80	22 10	43 75	*19 88*	*24 00*
NLCL	13.90	3 85	8.90	37 00	7 25	10 90	104 90	*26 67*	*21 60*
NMDCL	20.50	41 20	30.80	65.30	47 80	84 00	80 50	*52 87*	*83 55*
ONGCL	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
RCFL	14 40	2.25	8 35	14 05	11 05	17 00	13 10	*11 46*	*29 65*
SAIL	12.40	4 95	8.70	-7 90	5 50	16 00	80 70	*17 19*	*31 85*
SCIL	n a	n a	n a	n a	n a	n a	n a	*n a*	*n a*
STCIL	119.95	61.35	90 65	-25 80	93 90	220 70	191.50	*107 46*	*75 00*
VSNL	n.a	n.a.	n a	n a	n a.	n a	n a	*n a*	*n a*
AVG.	***41.73***	***35.26***	***38.50***	***375.33***	***101.68***	***99.92***	***129.99***	***117.48***	***42.87***

#The detailed computation of MVAA is presented in Chapter – VI (*infra*)

- Grand mean of SNPM **Rs.117.48** per equity share of Rs.10/- against grand mean value of Disinvestment Price of **Rs.42.87**.
- Under realisation of **Rs.74.61** per equity share of Rs 10/- (Rs.117.41 – Rs.42.87).

(B) PRICING OF EQUITY SHARES FOR DISINVESTMENT IN INDIA 1992-93

The debut of disinvestment in 1991-92 followed for the year 1992-93 as well As per the announcements made in the budget speech for 1992-93, Rs.3500/- crores were required to be raised by disinvestment of shares in PSUs and out of this Rs.1000/- crores were meant for National Renewal Fund. In accordance with the decision of the Government, advertisement was released in October 1992 inviting tenders for purchase of shares of 8 PSUs. A total of 286 bids were received from eligible bidders including financial institutional, mutual funds and individuals. The representatives of DPE, DEA and ICICI opened these bids. Out of total number of 286 bids 30 were found invalid. A minimum reserve price on the basis recommendations of 3 merchant bankers' viz. ICICI, IDBI, SBI Capital Market was fixed (unreported till date)

The average of the price recommended by the 3 merchant bankers was decided as the upset price by the government Having this criterion, the bids eligible for acceptance amounted to a total sale value of Rs 681.95 crores for 12.87 crores shares in the 8 PSUs. Total numbers of shares offered were 3929 lacs. The valid bids were received for 5641 lac shares. The bid amount was Rs 2100.82 crores comprising 26 parties.[7]

In November 1992 again for purchase of 46 27 crores of shares of 14 PSUs, government invited tender through release of notice inviting bids in the newspapers. A total of 225 bids were received before the stipulated time. A minimum price was fixed on the basis of recommendations of 3 merchant bankers (*supra*) and the average of the prices recommended by them was again decided as upset price by the core group consisting of Finance Secretary, the secretaries of Administrative Ministries and CMD's of the concerned PSUs. The criterion was the same as was adopted during the first tranche of disinvestment of 1992-93. As per this criterion, bids were accepted for sale amounting to Rs 1183.83 crores for 31.06 crores shares in 12 companies. The third phase of disinvestment was affected in March 1993 and shares of 15 companies were offered through auction. 192 bids were received within the stipulated time and 57 bids emerged successful on the basis of reserve prices fixed by the core group based on the recommendation of the merchant bankers. A total amount of Rs.46.64 crores was realised by sale of 100.86 lacs shares in 9 PSUs.

The average annual realizations from disinvestment during the F.Y. 1992-93 was abysmally low of Rs.42.87 (supra, Table 3 10), as against the derived value of Rs.117.48 i e grand mean value of seven methods selected for the purpose of this study, which is exhibited in the Table 5 03, hereinabove. Thus, for the second year of disinvestment also, of portfolio of equity shares of the sovereign investor of India, the under-realization based on the above-mentioned comparative data computed to ***Rs.74.61 per equity share of Rs.10/***, thereby the total loss to the Indian Government amounted to Rs.3327/- crores However, the quantum of mis pricing would be different if the disinvestment price is compared with the individual methods of pricing, *mutatis mutandis*.

TABLE : 5.04

PSUs WISE COMPUTATION AND COMPARISON OF DERIVED EQUITY SHARE PRICES BASED ON SELECTED NETWORK OF PRICING METHODS FOR DISINVESTMENT YEAR 1994-95.

SELECTED NETWORK OF PRICING METHODS – 1994-95									
PSUs	*NAV*	*PECV*	*FV*	*NPV*	*SVA*	*PEM*	*# MVAA*	*AVG.*	*DP*
AYCL	n.a.	n.a.	n.a.	n.a	n a.	n.a.	n.a.	*n a*	*n a*
BEL	40 00	26 15	33 10	107 25	63 80	327 60	229 85	*118 25*	*142 50*
BEML	147 70	68 30	108 00	-140 30	-3 36	433 40	471 25	*155 00*	*321 80*
BHEL	41 30	37 50	39 40	1944 55	1874 30	201 35	152 25	*612 95*	*111 90*
BPCL	n a.	n.a.	n.a.	n a	n a.	n.a.	n a.	*n a*	*n a*
BRPL	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
CMCL	n.a.	n.a.	n a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
CONCOR	18 00	18 80	18 40	219 10	251 45	101 00	40 52	*95 32*	*76 70*
CRL	n.a.	n.a.	n.a.	n a.	n.a	n.a.	n a.	*n a*	*n a*
DCIL	n.a.	n a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
EIL	142 35	163 90	153 10	205 30	244 40	830 15	380 70	*302 84*	*626 35*
FACT	n.a.	n.a.	n.a	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
GAIL	15 80	19 40	17 80	1082 40	402 10	73 55	78 70	*241 39*	*68 00*
H COP L	n a.	n.a.	n a	n.a.	n.a.	n.a.	n a.	*n a*	*n a*
HCL	n.a	n a.	n a	n a.	n.a	n.a.	n.a.	*n a*	*n a*
HMTL	n.a.	n.a.	n.a.	n.a.	n a.	n.a	n.a.	*n a*	*n a*
HOCL	n.a	n.a.	n.a	n.a.	n a.	n.a.	n.a.	*n a*	*n a*
HPCL	214 55	261 95	237 25	536 30	242 90	1036 00	293 20	*403 16*	*1260 00*
HPFMCL	n.a.	n.a.	n a	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
HZL	n.a.	n.a.	n a.	n.a	n.a.	n.a.	n.a.	*n a*	*n a*
IOCL	170 00	127 20	148 60	1382 05	738 30	1807 75	497 40	*695 90*	*712 50*
IPCL	n a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
IRCON	n a.	n.a	n.a.	n.a.	n.a.	n.a.	n.a	*n a*	*n a*
ITDCL	18 10	9 80	13 95	24 65	13 20	59 30	64 10	*29 01*	*77 00*

SELECTED NETWORK OF PRICING METHODS – 1994-95									
PSUs	*NAV*	*PECV*	*FV*	*NPV*	*SVA*	*PEM*	*# MVAA*	*AVG.*	*DP*
ITIL	n a.	n a.	n.a.	n.a.	n.a.	n a.	n.a.	*n a*	*n a*
KIOCL	11 70	9 85	10 80	32 10	7 20	61 20	12 55	*20 77*	*18 50*
MMTCL	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
MTNL	26 80	30 00	28 40	172 45	178 10	191 50	142 60	*109 98*	*171 80*
MRL	n.a.	n.a.	n.a.	n a.	n.a.	n.a.	n.a.	*n a*	*n a*
NACL	13 70	6 90	10 30	35 30	34 20	32 05	74 35	*29 54*	*32 00*
NFL	24 45	33 45	28 95	18 05	19 40	139 60	65 25	*47 02*	*37 00*
NLCL	n.a.	n.a.	n a.	n.a.	n.a.	n.a.	n a.	*n a*	*n a*
NMDCL	n.a.	n.a	n.a.	n a.	n.a	n a.	n.a.	*n a*	*n a*
ONGCL	383 10	257 40	320 25	5646 00	542 20	932 00	1876 50	*1422 49*	*1533 50*
RCFL	n a.	n.a.	n.a.	n a.	n.a.	n a.	n a.	*n a*	*n a*
SAIL	14 20	7 95	11 05	-3 85	13 70	39 00	133 25	*30 76*	*60 90*
SCIL	29 80	35 40	32 60	98 60	41 65	174 00	400 85	*116 13*	*72 65*
STCIL	n a.	n.a.	n.a	n.a.	n.a.	n a.	n.a.	*n a*	*n a*
VSNL	n.a.	n.a	n.a.	n a.	n.a.	n.a.	n a.	*n a*	*n a*
AVG.	***81.97***	***69.62***	***75.75***	***710.00***	***291.47***	***402.47***	***307.08***	***276.91***	***244.96***

#The detailed computation of MVAA is presented in Chapter – VI (*infra*).

- Grand mean of SNPM **Rs.276.91** per equity share of Rs.10/- against grand mean value of Disinvestment Price of **Rs.244.96.**
- Under realisation of **Rs.31.95** per equity share of Rs 10/- (Rs.276.91 – Rs 244 96).

TABLE NO. : 5.05

PSUs WISE COMPUTATION AND COMPARISON OF DERIVED EQUITY SHARE PRICES BASED ON SELECTED NETWORK OF PRICING METHODS FOR DISINVESTMENT YEAR 1995-96.

SELECTED NETWORK OF PRICING METHODS – 1995-96									
PSUs	*NAV*	*PECV*	*FV*	*NPV*	*SVA*	*PEM*	*#MVAA*	*AVG.*	*DP*
AYCL	n a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
BEL	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
BEML	n.a.	n.a.	n.a.	n.a.	n.a.	n a.	n.a.	*n a*	*n a*
BHEL	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
BPCL	n a.	n a.	n.a	n.a	n a.	n.a.	n.a.	*n a*	*n a*
BRPL	n.a.	n.a.	n a	n.a.	n a.	n.a.	n.a.	*n a*	*n a*
CMCL	n.a.	n.a	n.a.	n.a	n.a.	n.a.	n.a.	*n a*	*n a*
CONCOR	27 90	33 05	30 50	261 35	308 75	188 50	337 50	*169 65*	*71 15*
CRL	n.a.	n a.	n.a	n a.	n a.	n.a	n.a.	*n a*	*n a*
DCIL	n a.	n.a.	n.a	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
EIL	n.a.	n.a.	n a.	n a	n.a	n.a.	n.a	*n a*	*n a*
FACT	n.a.	n.a.	n.a	n a	n.a.	n.a.	n.a	*n a*	*n a*
GAIL	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*

SELECTED NETWORK OF PRICING METHODS – 1995-96									
PSUs	*NAV*	*PECV*	*FV*	*NPV*	*SVA*	*PEM*	*MVAA*	*AVG.*	*DP*
H COP L	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
HCL	n a.	n.a.	n.a	n.a.	n a.	n.a.	n.a.	*n a*	*n a*
HMTL	n.a.	n.a.	n a.	n.a.	n a.	n.a.	n.a.	*n a*	*n a*
HOCL	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
HPCL	n.a.	n a.	n.a	n a.	n.a.	n.a.	n.a.	*n a*	*n a*
HPFMCL	n.a.	n.a.	n.a	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
HZL	n.a.	n.a.	n.a.	n a.	n a.	n.a.	n.a.	*n a*	*n a*
IOCL	n.a.	n.a.	n a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
IPCL	n.a.	n.a.	n.a.	n a.	n.a.	n.a.	n.a.	*n a*	*n a*
IRCON	n.a.	n a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n.a*	*n a*
ITDCL	n.a.	n.a.	n a.	n.a.	n a.	n.a.	n.a.	*n a*	*n a*
ITIL	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
KIOCL	n a.	n.a.	n.a	n.a.	n a.	n.a.	n a.	*n a*	*n a*
MMTCL	n.a	n.a	n.a.	n.a.	n a.	n.a.	n.a.	*n a*	*n a*
MTNL	45 60	58 50	52 00	171 60	192 10	286 50	187 00	*141 90*	*156 35*
MRL	n a.	n.a.	n.a.	n.a.	n.a.	n.a.	n a.	*n a*	*n a*
NACL	n.a.	n a.	n.a	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
NFL	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
NLCL	n.a.	n.a	n a.	n.a.	n.a.	n.a.	n a.	*n a*	*n a*
NMDCL	n.a.	n.a.	n.a.	n.a.	n.a	n.a.	n.a.	*n a*	*n a*
ONGCL	123 45	78 00	100 75	462 75	160 25	309 55	607 70	*263 21*	*267 40*
RCFL	n.a	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
SAIL	19 20	7 15	13 15	-24 60	9 60	75 15	164 90	*37 79*	*30 05*
SCIL	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
STCIL	n a.	n.a.	n.a	n a.	n a.	n.a.	n.a.	*n.a*	*n a*
VSNL	n.a.	n.a	n a.	n.a.	n.a.	n.a.	n.a.	*n a*	*n a*
AVG.	***54.04***	***44.18***	***49.10***	***217.78***	***167.68***	***214.93***	***324.28***	***153.14***	***110.15***

#The detailed computation of MVAA is presented in Chapter – VI (*infra*)

- Grand mean of SNPM **Rs.153.15** per equity share of Rs.10/- against grand mean value of Disinvestment Price of **Rs.110.15**.
- Under realisation of **Rs.43/- per** equity share of Rs.10/- (Rs.153.15 – Rs.110.15)

(C) PRICING OF EQUITY SHARES FOR DISINVESTMENT YEAR 1994-95 and 1995-96

Due to unfavourable stock market conditions through out 1993-94, the government could not go in for further sale of share of PSUs. In the mean time in April '93, the report of Rangrajan committee (*supra*), on disinvestment of shares in public sector enterprises was submitted to the government, *inter alia*, making recommendations for

criteria for valuation for shares. Surprisingly this committee also remained silent on the latest "***Arc of Network of Methods of Valuation***" such as ***SVA, MVAA***, etc., which are widely practiced all over the globe since 1980s. After considering the recommendations, the government decided to reduce the maximum bid amount to Rs.25,000/- as against Rs.1.00 lac and invited tenders from any individual and legal entity, including FII, who are permitted to buy, hold and sell shares in the country. After considering stock market conditions, the government again decided to off load shares in respect of 7 companies, the proceeds of which realised in April 1994. A total of 1400 bids were received. A minimum price was again fixed on the recommendations of 2 merchant bankers viz. ICICI and IDBI, who agreed not to participate in bidding. The government at this juncture also used its own pre-determined formula and the average of the price recommended by 2 merchant bankers to arrive at the base prices in respect of shares of each PSUs. As per the criteria, bids were accepted for sale amounting around Rs.2291/- crores for 11.37 crores shares in 6 companies.[8] No share of BRPL could be sold as no bid was received quoting at or above the reserve price fixed by the government.

Based on the above discussed methods of pricing, the Government of India has pursued its disinvestment program (not strategy) for the year 1994-95 and 1995-96 respectively.

The average annual realizations from disinvestment during the F.Y. 1994-95 and 1995-96 were abysmally low of Rs.244.96 and Rs.110.15 (*supra*, Table 3.10), as against the derived value of Rs.276.91 and 153.15 respectively i.e. grand mean value of seven methods selected for the purpose of this study, which is exhibited in the Table 5.04 and 5.05, hereinabove. For the third and forth year of disinvestment of portfolio of equity shares of the sovereign investor of India as well, the under realization based on the above mentioned comparative data computed to Rs.31.95 and Rs.43.00 respectively per equity share of Rs.10/-, thereby the total loss to the Indian Government amounted to Rs 631.67 crores and Rs. 65.76 crores respectively.

5.04 ONE WAY ANALYSIS OF VARIANCE (ANOVA) OF SELECTED NETWORK OF PRICING METHODS

With a view to test whether, the different methods of pricing of a share of Indian PSUs for disinvestment in India, do matters and if yes, whether any statistical evidence existed for significant difference between the methods of pricing and within the group of methods of pricing. The appropriate procedure to test the null hypothesis is to the development of tests for equality of several population means. However, in this procedure the critical factor is the variability involved in the data and its measurement. *Ceteris Paribus*, if the variability around the sample means is small compared with the variability among the sample means, it would be inclined to doubt the null hypothesis that the population means are equal. Correspondingly, if the variability around the sample means is large compared with the variability among them, the evidence against this null hypothesis rather flimsy. Therefore, the appropriate test will be based on estimates of variance and the technique used is ANOVA.

- The frame work for computing One Way Analysis of Variances is as under:

  The null hypothesis H_0 : $U_1 = U_2 = \ldots U_k$

  Where, U = Population mean,

Here, The researcher has developed a test of null hypothesis that the K Population means of Selected Network of Pricing Methods are equal.

- The test of equality of means of population is based on two types of variability exhibited by the data computed hereinabove The first is variability about the individual method of pricing means within the K group of observations, known as within group variability. Second, variability among the K group means is calculated and compared, known as between group variability. Therefore, the following definitions of sums of squares have been considered :

$$\text{WITHIN – GROUPS} \quad \mathbf{SSW} = \sum_{I=1}^{k} \sum_{j=1}^{n_I} (x_{Ij} - \bar{x})^2$$

$$\text{BETWEEN – GROUPS} \quad \mathbf{SSG} = \sum_{i=1}^{k} n_i (\overline{x_i} - \overline{x})^2$$

$$\text{TOTAL} \quad \mathbf{SST} = \text{SSW} + \text{SSG}.$$

- ANOVA is commonly employed tool in statistical analysis, particularly in the field of design of experiments.[9] Therefore, as such, the same is applied by the researcher for comparing different methods of pricing of an equity share, under reference.

- The test of null hypothesis (H_0) is based on the ratio of mean squares which is defined as :

$$\mathbf{F = MSG/MSW}$$

If, this ratio were quite close to 1, there would be little cause to doubt the null hypothesis of equality of population means However, if the variability between group is large compared to the variability within groups, it would be reasonable to suspect the null hypothesis to be false. Therefore, the following decision rule[10] is followed

(a) The null hypothesis to be tested is that K (population means) means of Selected Network of Pricing Methods are equal, i.e.

$$H_0 : \quad U_1 = U_2 = \ldots = U_K$$

(b) Reject H_0 if MSG/MSW is $> F_{K-1, n-K, a}$

- Based on the above discussions, in the general format of ANOVA statistics are computed, each year-wise of disinvestment and each method-wise and Disinvestment Price within each pricing method-wise, as under:

SOURCE OF VARIATION	SUMS OF SQUARES	DEGREE OF FREEDOM	MEAN SQUARES	F RATIO
Between Groups	SSG	K – 1	MSG = SSG/K-1	MSG/MS
Within Groups	SSW	n - K	MSW = SSW/n-K	
TOTAL	*SST*	*n – 1*		

5.05 ANALYSIS OF DISINVESTMENT YEAR-WISE ANOVA FOR *INTER-SE* COMPARISON OF SELECTED NETWORK OF PRICING METHODS and WITH DISINVESTMENT PRICE

Based on the discussions in the foregoing para, the ANOVA is applied to the share values determined in the Table 5 02 through 5 05. The results of ANOVA are presented in Tables 5.06 through 5.09. In each of the table 1st result indicates the result of ANOVA taking all methods together. From 2nd to 22nd item, it indicates the difference between two methods at a time and from 23rd through 29th item, it indicates the result of ANOVA for price according to particular method at a time and Disinvestment Price. Table 5 06 exhibits the summary of ANOVA statistics for the 1st year of disinvestment viz. 1991-92. In the said table ANOVA statistics are presented for all the seven methods of Selected Network of Pricing Methods viz. NAV, PECV, FV, NPV, SVA, PEM and MVAA and each method with another method *inter-se*. Moreover, disinvestment price is also compared with each methods of pricing, *mutatis-mutandis*. For the source of variation of all the methods of pricing the derived figure of F-Ratio is 3.5693 against, the F-Table value of 2.1434 at 0 05 significance level. Similar strong evidence of statistical significance has also been found for the disinvestment years 1992-93, 1994-95 and 1995-96 respectively.

Therefore, aplombically the null hypothesis that the means of all the economic prices derived from Selected Network of Pricing Methods are equal is rejected Ex-post facto, the larger value of F-Ratio than the F-table value strongly support the findings that there is significant difference in the values derived by employing different methods of pricing under reference *A fortiori,* ***therefore, strategically, economically and statistically, it is desideratum for the acquirer and the divestor to employ different techniques of valuation for determination of range of values to negotiate a better and optimal deal in a due diligence process.***

Between the *inter-se* comparison of pricing methods, as well, the deviation between the observed value of F-Ratio and the table value are also found. Strong evidence of statistical significant difference is also found as the value of (F-Ratio) is larger than the F-Table value of 4 0068 between NAV and NPV (4 7853), NAV and SVA (5.7202), NAV and PEM (6.8546), NAV and MVAA (11 3636), PECV and NPV (5.3728), PECV and SVA (7.1700), PECV and PEM (9.7119), PECV and MVAA (17.0127), FV and NPV (5 0999), FV and SVA (6.4945), FV and PEM (8.3683) and FV and MVAA (14.3591). The observed statistical significant difference between the aforementioned methods of pricing is, *inter alia*, due to the in-built weaknesses / limitations and strengths / forte of each methods discussed at length in the Chapter-IV (*supra*). However, no statistically significant difference has been found NPV and SVA, NPV and PEM, NPV and MVAA, SVA and PEM, SVA and MVAA, PEM and MVAA, NAV and PECV, NAV and FV, PECV and FV, though non-significant difference was found due to different underlying assumptions and component principles require for the said methods.

Mean Value of yearwise Disinvestment Price is also compared against each methods of pricing. Strong evidence as to existence of statistical significant difference have also been found (as the F-Ratio is larger than F-Table value) between DP and NPV (4.3875), DP and SVA (4 8699), DP and PEM (5.4462) and DP and MVAA (9.0540) methods of pricing. Though the difference between DP and NAV, DP and PECV, DP and FV have been found but no statistical significant difference is found, *inter alia*, due to fact that the DP was determined on historical and orthodox methods of pricing viz by taking average of NAV and PECV @10% capitalisation rate.

These ological and statistical significant differences have also, *ipse facto* strongly evidenced under-realisations of disinvestment proceeds to the sovereign divestor in India. A posteriori, from the above analysis and existence of strong evidence of statistical significant difference among different method of pricing, it is desideratum especially for the divestor to determine range of disinvestment values, *inter alia,* to develop sagacious negotiating capabilities in due diligence process, to fetch better values for India and Indians, etc. Therefore, in nutshell the study of the Selected Network of Pricing Methods do matter much in the holistic process of disinvestment, not only in India but outside India, as well.

Table 5.07 and 5.08 exhibit the similar analysis of different pricing method for the disinvestment years 1992-93 and 1994-95 in India. The F-Ratio derived from all the methods for the year 1992-93 is 2.1941 and for the year 1994-95 is 2.1897 as against the table value of 2.1861. Thus, similar strong evidences of statistical significant differences are, also found for the disinvestment year 1992-93 and 1994-95 respectively. Moreover, strong evidence of statistically significant difference has also been found for the disinvestment year 1992-93 between PECV and MVAA (5.3366), FV and MVAA (5.0086) and in the disinvestment year 1994-95 between NAV and PEM (6.1329), PECV and PEM (6.7076), PECV and MVAA (4.3362), FV and PEM (6.4287), DP and NAV (4 4042), DP and PECV (4.9232) and DP and FV (4.6698). Table 5.09 exhibits the similar statistics of ANOVA for the disinvestment year 1995-96. Strong evidence of statistical significant difference is also been found from the source of variation of all methods of pricing for the disinvestment year 1995-96, as the observed F-Ratio of 2.8715 is larger than F-Table value of 2.5715. Likewise, similar results have been observed for the rest of the comparison in keeping with the results observed for the disinvested year 1991-92. The detailed statistics of disinvestment year-wise ANOVA is exhibited hereunder :

TABLE : 5.06

ANOVA - FOR DP AND *INTER-SE* CAPARISON OF PRICING METHODS FOR DISINVESTMENT YEAR 1991-92

Sr. No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
1	***ALL THE METHODS***				
	* BETWEEN GROUP	1315527 30	6	219254 50	**# 3.5693**
	* WITH IN GROUP	12469800 60	203	61427 59	
	* TOTAL	13785327 90	209		
2	**NAV AND PECV**				
	* BETWEEN GROUP	2249 1	1	2219 1	0 6167
	* WITH IN GROUP	211518 2	58	3646.86	
	* TOTAL	213767 3	59		
3	**NAV AND FV**				
	* BETWEEN GROUP	644 52	1	644 5204	0 1570
	* WITH IN GROUP	237990	58	4103 275	
	* TOTAL	238634 5	59		
4	**NAV AND NPV**				
	* BETWEEN GROUP	739544.2	1	739544 2	**# 4.7853**
	* WITH IN GROUP	8963530 0	58	154543 6	
	* TOTAL	9703075	59		
5	**NAV AND SVA**				
	* BETWEEN GROUP	221968 7	1	221968 7	**# 5.7202**
	* WITH IN GROUP	2250636	58	38804 07	
	* TOTAL	2472605	59		
6	**NAV AND PEM**				
	* BETWEEN GROUP	111754 2	1	111754.2	**# 6.8546**
	* WITH IN GROUP	945593 8	58	16303.34	
	* TOTAL	1057348	59		
7	**NAV AND MVAA**				
	* BETWEEN GROUP	113211.6	1	113211.6	**# 11.3636**
	* WITH IN GROUP	577833	58	9962.637	
	* TOTAL	691044 6	59		
8	**PECV AND FV**				
	* BETWEEN GROUP	485 6415	1	485 6415	0 1732
	* WITH IN GROUP	162587.8	58	2803.239	
	* TOTAL	163073 4415	59		
9	**PECV AND NPV**				
	* BETWEEN GROUP	823360 7	1	823360 7	**# 5.3728**
	* WITH IN GROUP	8888128	58	153243 6	
	* TOTAL	9711488 7	59		
10	**PECV AND SVA**				
	* BETWEEN GROUP	268904 7	1	268904 7	**# 7.1700**
	* WITH IN GROUP	2175234	58	37504.03	
	* TOTAL	2444138 7	59		

Sr. No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
11	**PECV AND PEM**				
	* BETWEEN GROUP	145711 1	1	145711 1	**# 9.7119**
	* WITH IN GROUP	870191 6	58	15003 3	
	* TOTAL	1015902 7	59		
12	**PECV AND MVAA**				
	* BETWEEN GROUP	147374 6	1	147374 6	**# 17.012**
	* WITH IN GROUP	502430 8	58	8662 601	
	* TOTAL	649805 4	59		
13	**FV AND NPV**				
	* BETWEEN GROUP	783853 4	1	783853 4	**# 5.0998**
	* WITH IN GROUP	8914600	58	153700	
	* TOTAL	9698453 4	59		
14	**FV AND SVA**				
	* BETWEEN GROUP	246535	1	246535	**# 6.4945**
	* WITH IN GROUP	2201706	58	37960 44	
	* TOTAL	2448241	59		
15	**FV AND PEM**				
	* BETWEEN GROUP	129372 6	1	129372 6	**# 8.3683**
	* WITH IN GROUP	896663 4	58	15459 71	
	* TOTAL	1026036	59		
16	**FV AND MVAA**				
	* BETWEEN GROUP	130940 3	1	130940 3	**# 14.359**
	* WITH IN GROUP	528902 6	58	9119 01	
	* TOTAL	659842 9	59		
17	**NPV AND SVA**				
	* BETWEEN GROUP	151190 4	1	151190 4	0 8024
	* WITH IN GROUP	10927246	58	188400 8	
	* TOTAL	11078436 4	59		
18	**NPV AND PEM**				
	* BETWEEN GROUP	276330	1	276330	1 6656
	* WITH IN GROUP	9622204	58	165900 1	
	* TOTAL	9898534	59		
19	**NPV AND MVAA**				
	* BETWEEN GROUP	274050 4	1	274050 4	1 7175
	* WITH IN GROUP	9254443	58	159559 4	
	* TOTAL	9528493 4	59		
20	**SVA AND PEM**				
	* BETWEEN GROUP	18724 9	1	18724 9	0 3733
	* WITH IN GROUP	2909310	58	50160 51	
	* TOTAL	2928034 9	59		
21	**SVA AND MVAA**				
	* BETWEEN GROUP	18134 99	1	18134 99	0 41385
	* WITH IN GROUP	2541549	568	43819 81	
	* TOTAL	2559683 99	59		

Sr. No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
22	**PEM AND MVAA**				
	* BETWEEN GROUP	4 720815	1	4 720815	0 00022
	* WITH IN GROUP	1236506	58	21319 08	
	* TOTAL	1236510 721	59		
23	**DP AND NAV**				
	* BETWEEN GROUP	1339 349	1	1339 439	0 27243
	* WITH IN GROUP	285136 7	58	4916 149	
	* TOTAL	286476 049	59		
24	**DP AND PECV**				
	* BETWEEN GROUP	7059 661	1	7059 661	1 95227
	* WITH IN GROUP	209734 5	58	3616 113	
	* TOTAL	216794 161	59		
25	**DP AND FV**				
	* BETWEEN GROUP	3842 08	1	3842 08	0 94341
	* WITH IN GROUP	236206 3	58	4072.522	
	* TOTAL	240048.3	59		
26	**DP AND NPV**				
	* BETWEEN GROUP	677938 9	1	677938.9	**# 4.3875**
	* WITH IN GROUP	8961747	58	154512 9	
	* TOTAL	9639685 9	59		
27	**DP AND SVA**				
	* BETWEEN GROUP	188823 6	1	188823 6	**# 4.8699**
	* WITH IN GROUP	2248852	58	38773 32	
	* TOTAL	2437675 6	59		
28	**DP AND PEM**				
	* BETWEEN GROUP	88624 96	1	88624.96	**# 5.4462**
	* WITH IN GROUP	943810	58	16272.59	
	* TOTAL	1032434 96	59		
29	**DP AND MVAA**				
	* BETWEEN GROUP	89923 33	1	89923 33	**# 9.0540**
	* WITH IN GROUP	576049 3	58	9931.884	
	* TOTAL	665972 63	59		
# indicates statistically significant difference at 5% level.					

TABLE : 5.07

ANOVA - FOR DP AND *INTER-SE* CAPARISON OF PRICING METHODS FOR DISINVESTMENT YEAR 1992-93

Sr.No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
1	***ALL THE METHODS***				
	* BETWEEN GROUP	13744969 99	6	229161 70	**# 2.1941**
	* WITH IN GROUP	10966221.71	105	104440.20	
	* TOTAL	12341191 71	111		

Sr. No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
2	**NAV AND PECV**				
	* BETWEEN GROUP	335 21	1	335.21	0 1295
	* WITH IN GROUP	77625 09	30	2587.50	
	* TOTAL	77960 30	31		
3	**NAV AND FV**				
	* BETWEEN GROUP	83 59	1	83 59	0.0333
	* WITH IN GROUP	75138 16	30	2504 61	
	* TOTAL	75221.76	31		
4	**NAV AND NPV**				
	* BETWEEN GROUP	850706 85	1	850707.00	2 6955
	* WITH IN GROUP	9467743.80	30	315591 00	
	* TOTAL	10318450 65	31		
5	**NAV AND SVA**				
	* BETWEEN GROUP	28753.82	1	28753.80	1 4411
	* WITH IN GROUP	598547 78	30	19951.60	
	* TOTAL	627301.60	31		
6	**NAV AND PEM**				
	* BETWEEN GROUP	27089 19	1	27089.20	2 4621
	* WITH IN GROUP	330061 94	30	11002.10	
	* TOTAL	357151 13	31		
7	**NAV AND MVAA**				
	* BETWEEN GROUP	62313 33	1	62313 30	**# 4.6628**
	* WITH IN GROUP	400911.45	30	13363 70	
	* TOTAL	463224 78	31		
8	**PECV AND FV**				
	* BETWEEN GROUP	84 01	1	84 01	0.0324
	* WITH IN GROUP	77791.85	30	2593 06	
	* TOTAL	77875 86	31		
9	**PECV AND NPV**				
	* BETWEEN GROUP	884815 79	1	884816 00	2 8028
	* WITH IN GROUP	9470397 50	30	315680 00	
	* TOTAL	10355213.29	31		
10	**PECV AND SVA**				
	* BETWEEN GROUP	35298 25	1	35298.20	1 7613
	* WITH IN GROUP	601201 46	30	20040 00	
	* TOTAL	636499 71	31		
11	**PECV AND PEM**				
	* BETWEEN GROUP	33451 21	1	33451 20	3 0162
	* WITH IN GROUP	332715 63	30	11090 50	
	* TOTAL	366166.84	31		
12	**PECV AND MVAA**				
	* BETWEEN GROUP	71789 24	1	71789.20	**# 5.3366**
	* WITH IN GROUP	403565 14	30	13452 20	
	* TOTAL	475354 38	31		

Sr. No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
13	**FV AND NPV**				
	* BETWEEN GROUP	867656 11	1	867656 00	2 7492
	* WITH IN GROUP	9467910 60	30	315597 00	
	* TOTAL	10335566 71	31		
14	**FV AND SVA**				
	* BETWEEN GROUP	31938 12	1	31938 10	1 6003
	* WITH IN GROUP	598714 54	30	19957.20	
	* TOTAL	630652.66	31		
15	**FV AND PEM**				
	* BETWEEN GROUP	30182 40	1	30182 40	2 7419
	* WITH IN GROUP	330228 70	30	11007 60	
	* TOTAL	360411 10	31		
16	**FV AND MVAA**				
	* BETWEEN GROUP	66961 53	1	66961.50	**# 5.0086**
	* WITH IN GROUP	401078.21	30	13369 30	
	* TOTAL	468039.74	31		
17	**NPV AND SVA**				
	* BETWEEN GROUP	566659.97	1	566660 00	1 7014
	* WITH IN GROUP	9991320.20	30	333044 00	
	* TOTAL	10557980.17	31		
18	**NPV AND PEM**				
	* BETWEEN GROUP	574184 71	1	574185.00	1 7716
	* WITH IN GROUP	9722834 30	30	324094 00	
	* TOTAL	10297019 01	31		
19	**NPV AND MVAA**				
	* BETWEEN GROUP	452540 55	1	452541.00	1 3862
	* WITH IN GROUP	9793683.80	30	326456 00	
	* TOTAL	10246224 35	31		
20	**SVA AND PEM**				
	* BETWEEN GROUP	24 82	1	24 82	0 0008
	* WITH IN GROUP	853638.31	30	24454 60	
	* TOTAL	853663 13	31		
21	**SVA AND MVAA**				
	* BETWEEN GROUP	6409 10	1	6409.10	0 0208
	* WITH IN GROUP	924487 82	30	30816.30	
	* TOTAL	930896 92	31		
22	**PEM AND MVAA**				
	* BETWEEN GROUP	7231 52	1	7231 53	0 3307
	* WITH IN GROUP	656001 99	30	21866 70	
	* TOTAL	663233 51	31		
23	**DP AND NAV**				
	* BETWEEN GROUP	45190 00	1	45190.00	2.3635
	* WITH IN GROUP	573598.00	30	19119.90	
	* TOTAL	618788 00	31		

Sr. No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
24	**DP AND PECV**				
	* BETWEEN GROUP	53309 30	1	53309 30	2 7753
	* WITH IN GROUP	576252 00	30	19208 40	
	* TOTAL	629561 30	31		
25	**DP AND FV**				
	* BETWEEN GROUP	49160 72	1	49160 70	2 5704
	* WITH IN GROUP	573764 71	30	19125 50	
	* TOTAL	622925 43	31		
26	**DP AND NPV**				
	* BETWEEN GROUP	503757 03	1	503757 00	1 5163
	* WITH IN GROUP	9966370 30	30	332212 00	
	* TOTAL	10470127 33	31		
27	**DP AND SVA**				
	* BETWEEN GROUP	1849 84	1	1849 84	0 0505
	* WITH IN GROUP	1097174 30	30	36572 50	
	* TOTAL	1099024 14	31		
28	**DP AND PEM**				
	* BETWEEN GROUP	2303 17	1	2,303 17	0 0833
	* WITH IN GROUP	828688 49	30	27,622 90	
	* TOTAL	830991 66	31		
29	**DP AND MVAA**				
	* BETWEEN GROUP	1372 49	1	1372 49	0 0457
	* WITH IN GROUP	899538 00	30	29984 60	
	* TOTAL	900910 49	31		
# indicates statistically significant difference at 5% level					

TABLE 5.08

ANOVA - FOR DP AND *INTER-SE* CAPARISON OF PRICING METHODS –FOR DISINVESTMENT YEAR 1994-95

Sr.No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
1	***ALL THE METHODS***				
	* BETWEEN GROUP	5214187 30	6	869031 22	**# 2.1897**
	* WITH IN GROUP	41672120 00	105	396877 33	
	* TOTAL	46886307 00	111		
2	**NAV AND PECV**				
	* BETWEEN GROUP	1220 18	1	1220 18	0 1332
	* WITH IN GROUP	274624 18	30	9154 14	
	* TOTAL	275844 36	31		
3	**NAV AND FV**				
	* BETWEEN GROUP	310 01	1	310 01	0 0316
	* WITH IN GROUP	293985 15	30	9799 51	
	* TOTAL	294295 16	31		

Sr.No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
4	**NAV AND NPV**				
	* BETWEEN GROUP	3155323 20	1	3155323 21	3 0252
	* WITH IN GROUP	31289560 00	30	1042985 33	
	* TOTAL	34444883 20	31		
5	**NAV AND SVA**				
	* BETWEEN GROUP	351119 91	1	351119 90	2 9763
	* WITH IN GROUP	3539122 70	30	117970 75	
	* TOTAL	3890242 61	31		
6	**NAV AND PEM**				
	* BETWEEN GROUP	805783.39	1	805783 39	**# 6.1329**
	* WITH IN GROUP	3941571 60	30	131385 72	
	* TOTAL	4747354 99	31		
7	**NAV AND MVAA**				
	* BETWEEN GROUP	405398.35	1	405398 35	3 8332
	* WITH IN GROUP	3172712 40	30	105757.08	
	* TOTAL	3578110 75	31		
8	**PECV AND FV**				
	* BETWEEN GROUP	300 13	1	300 13	0 0371
	* WITH IN GROUP	242203 02	30	8073 43	
	* TOTAL	242503 15	31		
9	**PECV AND NPV**				
	* BETWEEN GROUP	3280641 10	1	3280641 10	3 1506
	* WITH IN GROUP	31237778 00	30	1041259 30	
	* TOTAL	34518419 10	31		
10	**PECV AND SVA**				
	* BETWEEN GROUP	393737 16	1	393737.16	3 38714
	* WITH IN GROUP	3487340 50	30	116244.68	
	* TOTAL	3881077 66	31		
11	**PECV AND PEM**				
	* BETWEEN GROUP	869715 63	1	869715 63	**# 6.7076**
	* WITH IN GROUP	3889789.40	30	129659.65	
	* TOTAL	4759505.03	31		
12	**PECV AND MVAA**				
	* BETWEEN GROUP	451100 39	1	451100.39	**# 4.3362**
	* WITH IN GROUP	3120930 20	30	104031.01	
	* TOTAL	3572030 59	31		
13	**FV AND NPV**				
	* BETWEEN GROUP	3218184 50	1	3218184 50	3 0887
	* WITH IN GROUP	31257139 00	30	1041904.60	
	* TOTAL	34475323 50	31		
14	**FV AND SVA**				
	* BETWEEN GROUP	372296 05	1	372296 05	3 1850
	* WITH IN GROUP	3506701 50	30	116890 05	
	* TOTAL	3878997 55	31		

Sr.No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
15	**FV AND PEM**				
	* BETWEEN GROUP	837703 32	1	837703 32	**# 6.4287**
	* WITH IN GROUP	3909150 40	30	130305 01	
	* TOTAL	4746853 72	31		
16	**FV AND MVAA**				
	* BETWEEN GROUP	428129 37	1	428129 37	**# 4.0900**
	* WITH IN GROUP	3140291 20	30	104676 37	
	* TOTAL	3568420 57	31		
17	**NPV AND SVA**				
	* BETWEEN GROUP	1401309 60	1	1401309 60	1 2184
	* WITH IN GROUP	34502276 00	30	1150075.90	
	* TOTAL	35903585 60	31		
18	**NPV AND PEM**				
	* BETWEEN GROUP	772058 45	1	772058 45	0 6635
	* WITH IN GROUP	34904725 00	30	1163490 80	
	* TOTAL	35676783.45	31		
19	**NPV AND MVAA**				
	* BETWEEN GROUP	1298729 90	1	1298719 90	1 1413
	* WITH IN GROUP	34135866.00	30	1137862 20	
	* TOTAL	35434595 90	31		
20	**SVA AND PEM**				
	* BETWEEN GROUP	93086 42	1	93086 42	0 3903
	* WITH IN GROUP	7154287 90	30	238476.26	
	* TOTAL	7247374 32	31		
21	**SVA AND MVAA**				
	* BETWEEN GROUP	1949 69	1	1949 69	0 0091
	* WITH IN GROUP	6385428 70	30	212847 62	
	* TOTAL	6387378.39	31		
22	**PEM AND MVAA**				
	* BETWEEN GROUP	68092 49	1	68092 49	0 3009
	* WITH IN GROUP	6787877 60	30	226262 59	
	* TOTAL	6855970 09	31		
23	**DP AND NAV**				
	* BETWEEN GROUP	502891 67	1	502891 67	**# 4.4042**
	* WITH IN GROUP	3425490.20	30	114183 01	
	* TOTAL	3928381 87	31		
24	**DP AND PECV**				
	* BETWEEN GROUP	553654.49	1	553654 49	**# 4.9232**
	* WITH IN GROUP	3373708 10	30	112456 94	
	* TOTAL	3927362 59	31		
25	**DP AND FV**				
	* BETWEEN GROUP	528173 57	1	528173 57	**# 4.6698**
	* WITH IN GROUP	3393069 00	30	113102 30	
	* TOTAL	3921242 57	31		

Sr. No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
26	**DP AND NPV**				
	* BETWEEN GROUP	1138861 20	1	1138861.20	0 9935
	* WITH IN GROUP	34388644 00	30	1146288 10	
	* TOTAL	35527505 20	31		
27	**DP AND SVA**				
	* BETWEEN GROUP	13594 36	1	13594 36	0 0614
	* WITH IN GROUP	6638206 50	30	221273 55	
	* TOTAL	6651800 86	31		
28	**DP AND PEM**				
	* BETWEEN GROUP	35534 44	1	35534 45	0 1514
	* WITH IN GROUP	7040655 50	30	234688 52	
	* TOTAL	7076189 94	31		
29	**DP AND MVAA**				
	* BETWEEN GROUP	5247 49	1	5247 49	0 0251
	* WITH IN GROUP	6271796 20	30	209059 87	
	* TOTAL	6277043 69	31		
# indicates statistically significant difference at 5% level.					

TABLE : 5.09

ANOVA - FOR DP AND *INTER-SE* CAPARISON OF PRICING METHODS – FOR DISINVESTMENT YEAR 1995-96

Sr.No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
1	***ALL THE METHODS***				
	* BETWEEN GROUP	280050 10	6	46675 01	**# 2.8715**
	* WITH IN GROUP	341337 00	21	16254 15	
	* TOTAL	621387 10	27		
2	**NAV AND PECV**				
	* BETWEEN GROUP	194 54	1	194 54	0 1212
	* WITH IN GROUP	9630 06	6	1605 01	
	* TOTAL	9824 60	7		
3	**NAV AND FV**				
	* BETWEEN GROUP	48 76	1	48 76	0 0263
	* WITH IN GROUP	11100 60	6	1850 10	
	* TOTAL	11149 36	7		
4	**NAV AND NPV**				
	* BETWEEN GROUP	67024 92	1	67024 92	**# 4.1381**
	* WITH IN GROUP	129575 40	6	16196 93	
	* TOTAL	196600 32	7		
5	**NAV AND SVA**				
	* BETWEEN GROUP	25826 96	1	25826 96	2 9613
	* WITH IN GROUP	52327 68	6	8721 28	
	* TOTAL	78154 64	7		

Sr. No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
6	**NAV AND PEM**				
	* BETWEEN GROUP	51769 58	1	51769 58	# 7.5579
	* WITH IN GROUP	41098 31	6	6849.72	
	* TOTAL	92867 89	7		
7	**NAV AND MVAA**				
	* BETWEEN GROUP	146056 60	1	146056 60	# 6.6623
	* WITH IN GROUP	131535 60	6	21922 59	
	* TOTAL	277592 20	7		
8	**PECV AND FV**				
	* BETWEEN GROUP	48 51	1	48 51	0.0406
	* WITH IN GROUP	7158 45	6	1193 08	
	* TOTAL	7206 96	7		
9	**PECV AND NPV**				
	* BETWEEN GROUP	60273 92	1	60273.92	2 8785
	* WITH IN GROUP	125633.30	6	20938 88	
	* TOTAL	185907 22	7		
10	**PECV AND SVA**				
	* BETWEEN GROUP	30504 50	1	30504 50	3 7826
	* WITH IN GROUP	48385 53	6	8064 25	
	* TOTAL	78890 03	7		
11	**PECV AND PEM**				
	* BETWEEN GROUP	58311 13	1	58311 13	# 9.4161
	* WITH IN GROUP	37156 16	6	6192.69	
	* TOTAL	95467 29	7		
12	**PECV AND MVAA**				
	* BETWEEN GROUP	156912 00	1	156912 00	# 7.3786
	* WITH IN GROUP	127593 40	6	21265 57	
	* TOTAL	284505 40	7		
13	**FV AND NPV**				
	* BETWEEN GROUP	56902.51	1	56902 51	2 6861
	* WITH IN GROUP	127103 80	6	21183 97	
	* TOTAL	184006 31	7		
14	**FV AND SVA**				
	* BETWEEN GROUP	28120.06	1	28120.06	3 3841
	* WITH IN GROUP	49856 07	6	8309 35	
	* TOTAL	77976 13	7		
15	**FV AND PEM**				
	* BETWEEN GROUP	54995 86	1	54995.86	# 8.5426
	* WITH IN GROUP	38626 70	6	6437 78	
	* TOTAL	93622 56	7		
16	**FV AND MVAA**				
	* BETWEEN GROUP	151442 60	1	151442.60	# 7.0403
	* WITH IN GROUP	129063 90	6	21510 66	
	* TOTAL	280506 50	7		

Sr. No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
17	**NPV AND SVA**				
	* BETWEEN GROUP	5020 02	1	5020.02	0 1789
	* WITH IN GROUP	168330 90	6	28055.15	
	* TOTAL	173350 92	7		
18	**NPV AND PEM**				
	* BETWEEN GROUP	16 25	1	16 25	0 0006
	* WITH IN GROUP	157101 50	6	26183.58	
	* TOTAL	157117 75	7		
19	**NPV AND MVAA**				
	* BETWEEN GROUP	22684 50	1	22684 50	0 5498
	* WITH IN GROUP	247538 80	6	41256 46	
	* TOTAL	270223 30	7		
20	**SVA AND PEM**				
	* BETWEEN GROUP	4465 13	1	4465 13	0 3355
	* WITH IN GROUP	79853 78	6	13308 96	
	* TOTAL	84318 91	7		
21	**SVA AND MVAA**				
	* BETWEEN GROUP	49047 12	1	49047 12	1 7281
	* WITH IN GROUP	170291 00	6	28381 84	
	* TOTAL	219338 12	7		
22	**PEM AND MVAA**				
	* BETWEEN GROUP	23914.84	1	23914 84	0 9021
	* WITH IN GROUP	159061 70	6	26510.28	
	* TOTAL	182976 54	7		
23	**DP AND NAV**				
	* BETWEEN GROUP	13316 11	1	13316 11	2 6524
	* WITH IN GROUP	40162 13	6	5020.27	
	* TOTAL	53478 24	7		
24	**DP AND PECV**				
	* BETWEEN GROUP	15159 76	1	15159 76	2 5361
	* WITH IN GROUP	35864 23	6	5977 37	
	* TOTAL	51023 99	7		
25	**DP AND FV**				
	* BETWEEN GROUP	13493 14	1	13493 14	2 1684
	* WITH IN GROUP	37334.78	6	6222.46	
	* TOTAL	50827 92	7		
26	**DP AND NPV**				
	* BETWEEN GROUP	14977 48	1	14977 48	0 5767
	* WITH IN GROUP	155809 60	6	25968 26	
	* TOTAL	170787 08	7		
27	**DP AND SVA**				
	* BETWEEN GROUP	2655 38	1	2655.38	0 2022
	* WITH IN GROUP	78561 85	6	13093 64	
	* TOTAL	81217 23	7		

Sr. No.	*SOURCE OF VARIATION*	*SS*	*DOF*	*MS*	*F-RATIO*
28	**DP AND PEM**				
	* BETWEEN GROUP	14007 20	1	14007 20	1 2481
	* WITH IN GROUP	67332 48	6	11222 08	
	* TOTAL	81339 68	7		
29	**DP AND MVAA**				
	* BETWEEN GROUP	74526 95	1	74526 95	2 8342
	* WITH IN GROUP	157769 70	6	26294 95	
	* TOTAL	232296 65	7		
# indicates statistically significant difference at 5% level.					

5.06 ANALYSIS OF DESCRIPTIVE STATISTICS OF SELECTED NETWORK OF PRICING METHODS

Since, the observed results of the study of different methods of pricing evidenced the fact, that the derived quantum of valuation / pricing are different with respect to each esoteric method of pricing, it is necessary to determine the extent of GAP available in terms of range of values determined by employing each selected method of pricing. Therefore, in order to draw objective and plausible conclusions, Descriptive Statistics such as Mean value, Median value, Standard deviation, Kurtosis, Skewness and Rang of values – depicting a minimum value to a maximum value are computed and exhibited in the tabular form as discussed hereinbelow :

Table 5.10 exhibits the descriptive statistics for the disinvestment year 1991-92. Likewise, Table 5.11, 5.12, and 5 13 exhibit descriptive statistics for the disinvestment year 1992-93, 1994-95 and 1995-96 respectively From the analysis of values exhibited in Table 5 10 for the disinvestment year 1991-92, it is observed that the Grand mean value from Selected Network of Pricing Methods is Rs.121.68 per Equity Share of Rs 10/- each with a median value of Rs.75/- as against the Mean Value Disinvestment Price (MVDP) of Rs 34 85 The dispersion from the mean value is observed in the value of standard deviation ranging from a low of 5.84 in the case of RCFL to a high of 861 59 in the case of BPCL The existence of standard deviation itself buttresses the fact that **an astronomical range of values** as per different methods of pricing exists The Grand mean value of range of Rs.351.56 with a minimum of Rs.11 15 to a maximum mean value of Rs.363.69 per share, *ipso facto*,

evidences the availability of the scale and scope of pricing range for negotiations which ologically help convince all the stake-holders The Grand mean value of minimum and maximum value of range is computed at Rs.187.42 per share (Table 5.10).

Kurtosis measures the degree of peakedness of the distribution of Selected Network of Pricing Methods From the analysis of descriptive statistic of kurtosis it has been found that notwithstanding the same central location mean and median of Selected Network of Pricing Method and dispersion of standard deviation, the value derived from all methods of pricing are not symmetrical. This is so in view of the fact that they have different degrees of kurtosis. This is further buttressed by the observed research results that the value of kurtosis ranges from a platokurtic value of –2.47 and a laptokurtic value of 6.60 accompanied by numerous mesokurtic values in between them. As, the selected methods of pricing methods have different degree of kurtosis this findings, *a posteriori*, helps privatization officials as a powerful tool to objectively negotiate the pricing aspects ologically and plausibly to fetch optimum realisations from disinvestment.

Ceteris Paribus, the value of skewness explains the existence of fact about the extent to which the distribution of data point is concentrated at one or the other. Since, the value of mean and standard deviation contained no information about skewness of distribution of SNPM, the analysis of property of skewness is of a **holy grail** for drawing observations. Skewness imparts the analyst the tool to measure dynamics of direction and extent of skewness of different prices that can be charged / negotiated The positive value of skewness evidencing that the mean value of methods of pricing exceeds there median value This is mostly true for 25 PSUs in which positive value of skewness is observed, barring five PSUs in which marginal amount of negative values have been observed

A posteriori, the positive value of skewness statistically establishes that the new methods of pricing such as NPV, SVA, MVAA, etc. do matter much, which were never tried by the sovereign investor for marketing the product and strategy of

disinvestment, though tried by the private acquirer. This has resulted into drain of wealth from sovereign divestor to private acquirer may it be Indian or non-Indian.

Table 5.11 exhibits value of descriptive statistics for the disinvestment year 1992-93 the Grand mean value derived is Rs.117.48 with a median value of Rs.75.34 as against Mean Disinvestment Price of Rs.42.87 per equity share. The value of kurtosis ranges from a platokurtic value of Rs.-1.60 to a laptokurtic value of Rs.6.54 having numerous mesokurtic values in between them. Out of 16 PSUs under reference, in 13 PSUs positive value of skewness have been observed, barring 3 PSUs in which a marginal negative value of skewness have been observed.

The observed value of standard deviation is in keeping with the results observed for the disinvestment year 1991-92. The observed Grand mean value of range is Rs.402.34 with a minimum value of Rs.18 18 to a maximum value of Rs.555.85. The average of a minimum and a maximum ranges Rs.270/- per equity share. Table 5.12 and 5.13 exhibit descriptive statistics for the disinvestment years 1994-95 and 1995-96 respectively. Similar results like in the disinvestment years 1991-92 and 1992-93 have been observed with some improvement in the value of range of prices. For the year 1994-95 the derived Grand mean value is Rs.276.91 with a median value of Rs.139.54 as against Mean Disinvestment Price of Rs.244.96 per share. The standard deviation ranges from a low of 19.64 in the case of KIOCL and a maximum of 1945.60 in the case of ONGC. Observed value of Kurtosis evidences a platokurtic value of –2.59 and a laptokurtic value of 5.36 with a numerous mesokurtic value in between them. Out of 16 PSUs, in the cases of 15 PSUs positive value of skewness have been observed. The observed value of grand mean of a range is Rs.853.45 with a minimum and a maximum limit of Rs.49.58 to Rs.801.79 per share. The mean value of mini-max range is Rs.476.30 per equity per share.

For the disinvestment year 1995-96, the Grand mean value observed is Rs.153.15 with a median of Rs.140.94 as against the Mean Disinvestment Price of Rs.110.15 per share. The observed value of standard deviation varies from a low of 58.71 in the case of SAIL to a maximum of 189.53 in case of ONGCL. Kurtosis value observed a platokurtic value of –1.86 to a laptokurtic value of 3.18 with two negative mesokurtic

values. In all the four cases positive skewness have been observed. The observed value of Grand mean of range is Rs.317.43 with a mini-max limit of Rs.31.70 and Rs.349.15 per share respectively. The computed value of average of mini-max range is Rs.190.42 per share.

While the detailed year-wise descriptive statistics are exhibited in Tables 5.10 through 5.13, at the end the summary of descriptive statistics of all the disinvestment years in a tabular form is also presented in Table 5.14.

TABLE : 5.10

DESCRIPTIVE STATISTICS OF SELECTED NETWORK OF PRICING METHODS FOR DISINVESTMENT YEAR 1991-92

PSUs	MEAN	MEDIAN	S.D.	KURTOSIS	SKEWNESS	RANGE	MINIMUM	MAXIMUM
AYCL	27.78	32 05	78 95	1 14	-0 36	253.97	-107.37	146 60
BEL	80 60	76 15	62 38	0 06	0 99	166.50	23.80	190 30
BEML	128.31	109 00	201 14	0.24	-0 08	612 75	-195 55	417 20
BHEL	191 51	100 75	230 94	-0 34	1 23	559.95	22 10	582 05
BPCL	695 12	272 20	861.59	3 80	1 93	2364.20	132.80	2497 00
BRPL	22 14	18 80	8 96	-0 65	0 95	23 95	12 55	36 50
CMCL	15.63	10.95	27 50	-0.22	-0 17	81 65	-28.30	53 35
CRL	107.62	124 10	72 11	-1 83	0 24	171 30	36 65	207 95
DCIL	63 85	54 10	41 49	0 31	1 11	113.95	24.05	138 00
FACT	13 88	7 40	18.28	6 60	2.54	51.50	3.45	54 95
HCL	3 64	15 05	52 04	0.23	-0 91	150.00	-87 50	62 50
HMTL	29.27	31 20	44 18	1 37	0 51	141 50	-33 80	107 70
HOCL	62.69	38.80	39 69	-1.50	0 76	93 25	23.95	117 20
HPCL	401 62	226 10	420 19	2 89	1 73	1154 60	100 00	1254 60
HPFMCL	8 45	7 45	31 28	2 61	1 28	95.80	-25 80	70 00
HZL	20 38	14 80	13 30	-0 84	1 11	32 20	8 50	40 70
IPCL	91.41	84 50	82 58	3 61	1 78	238 65	23.75	292 40
IRCON	436.08	372 65	182 56	-1 83	0.13	480.90	198 10	679 00
ITIL	122 35	31 10	178 17	5.22	2 25	486 46	23 65	510 10
MMTCL	170 31	105 40	112 30	-2 47	0 41	248 70	70 00	318 70
MTNL	63.64	59 78	57 11	-1 06	0 75	142.15	10 65	152 80
MRL	125 60	62 40	139 31	-0 76	1 11	325 25	22 90	348 15
NACL	22 56	10 40	31 50	6 52	2 53	89 00	4 25	93 25
NFL	16 37	14 50	11 77	-1.24	0 56	30 70	2 70	33 40
NLCL	40 28	14 15	50 63	3 44	1 85	141.30	3 70	145 00
RCFL	11 22	10 80	5 84	0 03	0 69	16 80	4 40	21 20
SAIL	14 38	7.30	20 43	5 79	2 33	60 00	-0 06	59 40
SCIL	190.70	113 75	270 69	5 08	2 17	763.20	13 50	776 70
STCIL	108 13	109 60	70 00	-0 04	-0 55	206 20	-10.20	196 00
VSNL	364 88	115 00	468 40	2 61	1 75	1250 50	57 55	1308 05
AVG.	***121.68***	***75.01***	*N.A*	*N.A*	*N.A*	***351.56***	***11.15***	***363.69***

TABLE : 5.11

DESCRIPTIVE STATISTICS OF SELECTED NETWORK OF PRICING METHODS FOR DISINVESTMENT YEAR 1992-93

PSUs	MEAN	MEDIAN	S D.	KURTOSIS	SKEWNESS	RANGE	MINIMUM	MAXIMUM
BHEL	301 65	36 10	47 28	6 49	2 52	1490 80	26 20	1517 00
BPCL	711 20	452 00	946 54	6 03	2 40	2650 50	159 50	4978 35
BRPL	23 64	19 40	12 41	1 10	1 28	38 95	10 85	46 80
FACT	14 85	8 35	18 76	5 97	2 39	52 80	3 60	56 40
H COP L	15 03	12 00	9 56	-0 22	-0 54	27 35	-1 20	26 15
HMTL	32 50	14 10	88 11	4 86	2 00	275 75	-54 80	220 95
HPCL	429 05	400 00	362 71	3 49	1 74	1024 50	135 50	1160 00
HZL	42 31	22 95	54 92	6 54	2 53	151 95	13 65	165 60
ITI L	50 88	36 10	47 28	-0 53	0 58	133.45	-12 65	120 80
NACL	23 12	12 20	16 37	-0 79	0 90	40 55	10 00	50 55
NFL	19 88	17 80	11 73	3 33	1 58	36 45	7 30	43 75
NLCL	26 68	10 90	36 17	4 97	2 21	101 05	3 85	104 90
NMDCL	52 88	47 80	24 43	-1 60	0.10	63 50	20 50	84 00
RCFL	11 45	13 10	4 88	1 42	-1 18	14 75	2 25	17 00
SAIL	17 20	8 70	28 99	5 62	2 25	88 60	-7.90	80 70
STCIL	107 46	93 90	82 05	0 10	-0 17	246 50	-25 80	220 70
AVG.	**117. 48**	**75.34**	**N.A**	**N.A**	**N.A**	**402.34**	**18.18**	**555.85**

TABLE : 5.12

DESCRIPTIVE STATISTICS OF SELECTED NETWORK OF PRICING METHODS FOR DISINVESTMENT YEAR 1994-95

PSUs	MEAN	MEDIAN	S.D.	KURTOSIS	SKEWNESS	RANGE	MINIMUM	MAXIMUM
B .EL	118 25	63 80	116 34	0 32	1 26	301 45	26 15	327 60
BEML	154 99	108 00	223 45	-0 85	0 47	611 56	-140 30	471 25
BHEL	612 96	152.25	888 13	-0 84	1 21	1907 05	37 50	1944 55
CONCOR	95 32	40 52	100 40	-1 06	0 96	233 45	18 00	251 45
EIL	302 84	205 30	246 48	4 68	2 11	687 80	142 35	830 15
GAIL	241 40	73 55	395 37	4 33	2 10	1066 60	15 80	1082 40
HPCL	403 16	261 95	299 73	4 07	2 04	821 45	214 55	1036 00
IOCL	695 90	497 40	664 29	-0 55	0 95	1680 55	127 20	187 75
ITDCL	29 01	18 10	22 84	-0 91	1 07	54 30	9 80	64 10
KIOCL	20 77	11 70	19 64	3 23	1 89	54 00	7 20	61 20
MTNL	109 98	141 50	70 98	-2 59	-0 23	151 30	26 80	178 10
NACL	29 55	32 05	23 10	1 96	1 27	67 45	6 90	74 35
NFL	47 02	28 95	43 82	4 11	2 03	121 56	18 05	139 60
ONGCL	1422 50	542 20	1945 60	5 13	2 23	5388 60	257 40	5646 00
SAIL	30 75	13 70	46 98	5 36	2 26	137 10	-3 85	133 25
SCIL	118 13	41 65	136 14	3 78	1 95	371 05	29 80	400 85
AVG.	**276.91**	**139.54**	**N.A**	**N.A**	**N.A**	**853.45**	**49.58**	**801.79**

TABLE : 5.13

DESCRIPTIVE STATISTICS OF SELECTED NETWORK OF PRICING METHODS FOR DISINVESTMENT YEAR 1995-96

PSUs	MEAN	MEDIAN	ST.DEV.	KURTOSIS	SKEWNESS	RANGE	MINIMUM	MAXIMUM
CONCOR	169 65	179 08	127 84	-1 86	0 01	309 60	27 60	337 50
MTNL	141 90	156 75	85 06	-0 65	0 33	240 90	45 80	286 50
ONGCL	263 21	211 73	189 53	-0 10	0 96	529.70	78 00	607 70
SAIL	37 80	16 18	58 71	3 18	1 68	189 50	-24 60	164 90
AVG.	**153.14**	**140.94**	**N.A**	**N.A**	**N.A**	**317.43**	**31.70**	**349.15**

TABLE : 5.14

SUMMARY OF DESCRIPTIVE STATISTICS OF ALL YEARS OF DISINVESTMENT

PARTICULARS	1991-92	1992-93	1994-95	1995-96
Grand Mean Value	121.68	117 48	276 91	153.14
Median	75.01	75 34	139.54	140.94
Grand Average of Range	351 56	402.34	853.45	317 43
Grand Average of a Minimum of Range	11 15	18.18	49.58	31.70
Grand Average of a Maximum of Range	363.69	555.85	801.79	349.15
Platokurtic	-2.47	-1.60	-2.59	-1 86
Laptokurtic	6.60	6.54	5.36	3 18

5.07 DETERMINATION OF MISPRICING – UNDER REALISATIONS

In the previous para extensive analysis of derived value of disinvested equity share computed based on Selected Network of Pricing Methods by applying statistical techniques of ANOVA and descriptive statistics have been conducted and commented upon. The ological analysis have established the existence of the fact that different ranges of values of an equity share can be derived by applying Selected Network of Pricing Methods both by the divestor and the acquirer.

A posteriori, the strong and statistically significant evidences have been observed that establishes the need to further examine the economic impact and strategic significance of mis-pricing in the disinvestment decision in India. In order to determine the existence of fact of mis-pricing, fundamental comparison of mis-pricing in addition to market comparison of mispricing is *sine qua non* in view of the following reasons.

- Most of the empirical studies evidence the fact of existence of mis-pricing of IPOs by comparing the initial price with the market price. In this process no objective and economic analysis of several methods of pricing for acquisitions and divestments practiced all over the globe vis-à-vis initial price have been carried out and reported. In nutshell, comparison of mis-pricing of IPOs or Disinvestment Price with Market Price has its own limitations such as,

  (a) Market Price and Returns are not a complete measure of mis-pricing, *inter alia*, due to the existence of information asymmetry, thin trading, stags and speculators in the markets and above all, evaluation of new methods of price discovery.

  (b) Strong Economic and Statistical evidences of existence of the fact of mis-pricing require study of both Market Prices and Economic (Fundamental) Prices. They are not mutually exclusive.

  (c) Especially in India, Capital Markets were not broader, wider, deeper, liquid and large in a volume during the period of study under reference for disinvestment.

  (d) No independent and truly traded Market Prices of Indian PSUs complying the evidence of market efficiency were available on Indian bourses, during the period under reference.

- Keeping in view the above and in-built limitations of market base comparison approach, Fundamental comparison of disinvestment price vis-à-vis derived value from Selected Network of Pricing Methods under reference, with sensitivity analysis are also conducted, in addition to market base comparison hereinbelow.

FUNDAMENTAL COMPARISON OF MIS-PRICING

In the last decade, the Government of India has implemented the strategy of disinvestment, *inter alia*, by divesting some of the equity shares from its portfolio of equity shares. From the in-depth analysis of disinvestment decision in general and in particular, the aspects of valuation and pricing of disinvestment, it has been found that

(a) the sovereign divestor had not considered for the reasons best known to the government, the ***Arc of Network of Pricing Methods*** practiced all over the globe as a better marketing tool, *inter alia*, with an avowed objective of ***adding value and creating wealth and welfare*** for its own portfolio of equity shares divested and for its citizens/tax-payers

(b) notwithstanding the fact, that the crewise of valuation of shares is not unbounded horizon, for the reasons best known to the Government, the sovereign portfolio investor had followed 'Reductionist Approach', as against 'Holistic Approach', especially for marketing of disinvestment of equity shares in India. As a result the so-called envisaged **synergies** of the disinvestment strategy have resulted into **anergies**, *inter alia,* ascribing loss to India and Indians. Repertoire of New economic principles for valuation of shares and Network of Pricing Methods as discussed in detailed Chapter-IV have, some how seem, not been considered as a tool for marketing the strategy of disinvestment in India. It is needless to reiterate that the art of valuation must be based on scientific tenets and new economic principles and not on the adhoc and unscientific approach of average of bids for pricing of disinvestment, as such adopted by the government.

(c) In nutshell it seems that the Government of India was not advised properly with the 'Potent Recipe' of the arc of Network of Methods of Pricing. NAV, PECV, FV and other orthodox method of pricing which are rated as 'Raunchy Methods' in the global environment by the acquirer and the divestor were applied for Valuation and Pricing strategy. The 'Potent Recipe' of network of new methods of pricing viz. NPV, SVA, MVAA etc. were not seem to have been considered for disinvestment pricing.

In view of the above mentioned reasons, the researcher has tried to determine **the economic significance of mis-pricing** both in terms of absolute Rupee per share as also in terms of percentage returns.

Ceteris Paribus, the following Table 5.15 exhibits the quantum of under realisations from disinvestments by carving out the difference between Mean value of Disinvestmment Price (MVDP) realised vis-à-vis Mean Value of Derived Economic Prices (MVDEP) from Selected Network of Pricing Methods. By comparing the MVDP of disinvested portfolio of Government of India (Both in Bundles and Case by Case) with MVDEP from Selected Network of Pricing Methods, the highest under- realisation per equity share (of Rs.10/-) of Rs.86.83 is observed for the disinvestment year 1991-92, followed by Rs.74.61 for 1992-93, Rs.31.95 for 1994-95 and Rs.43.00 for the year 1995-96 respectively. The absolute quantum of under-realisation is more than what was realised by the government from the disinvestment decision. *A posteriori,* these results, are, *inter alia* **due to the fact of not marketing its disinvestment strategy based on this study made by the researcher for the crucial aspects of strategy of valuation and pricing for disinvestment**. The table 5.15 summarizes the under-realisations as discussed hereinabove.

TABLE : 5.15

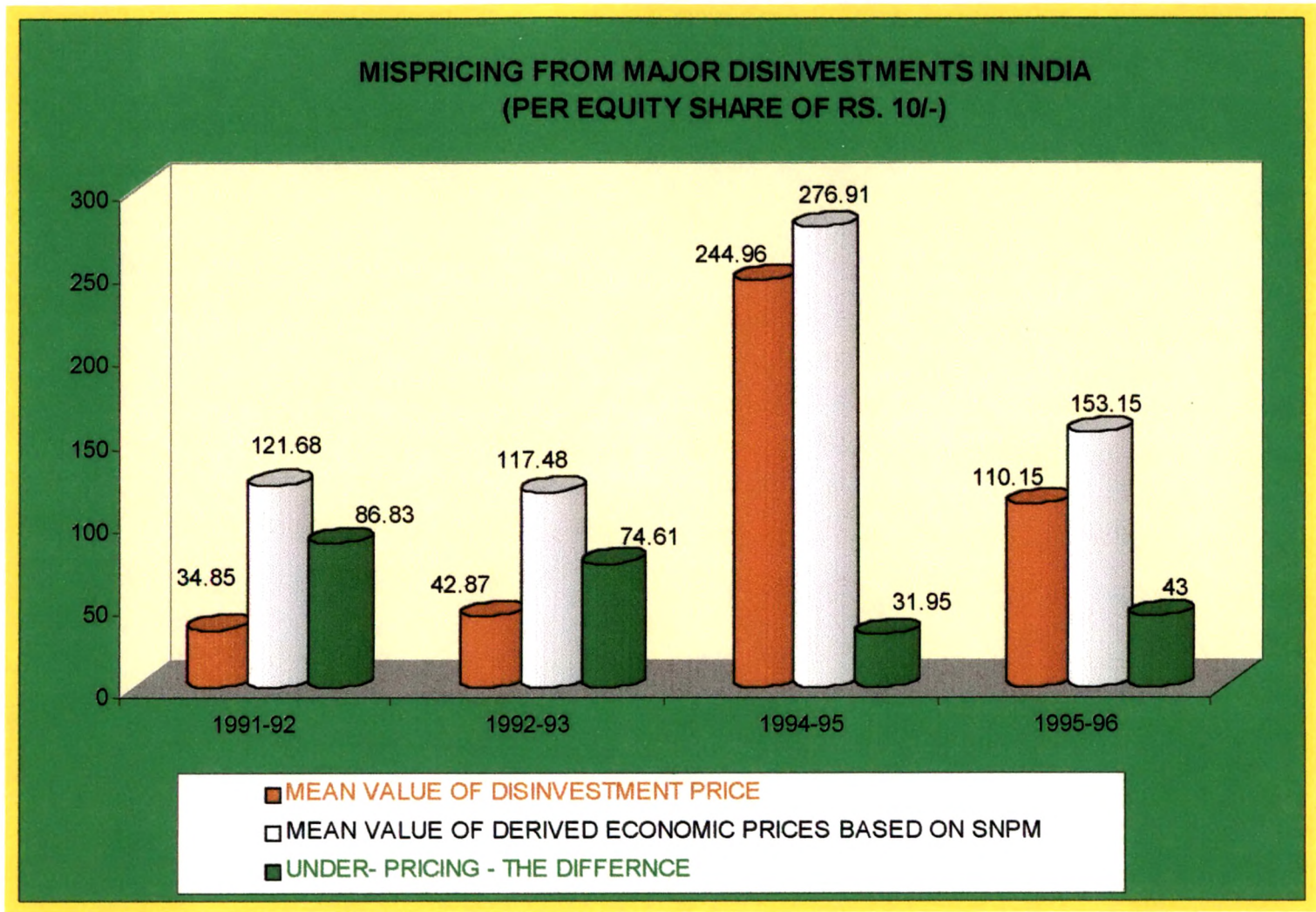
DISINVESTMENT YEAR-WISE COMPUTATION AND COMPARISON OF UNDER REALISATIONS FROM MAJOR DISINVESTMENT IN INDIA.

YEAR	*MVDP (Rs.)*	*MVDEP (Rs.)*	*UNDER REALIZATIONS PER SHARE OF Rs.10/- (Rs.)*	*UNDER REALIZATION IN Rs. IN CRORES*
1991-92	34.85	121.68	**(-)86.83**	7572.00
1992-93	42.87	117.48	**(-)74.61**	3327.00
1994-95	244.96	276 91	**(-)31.95**	631 67
1995-96	110.15	153.15	**(-)43.00**	65.76
AVG /*TOTAL	108.25	167.30	**(-)59.05**	*11596.43

From the analysis of data and its descriptive statistics presented in the above table, it has been observed that the Government of India has on an average realised mean value of Rs.108.25 per share and a median value of Rs.76.50 per equity share from the major disinvestments of its portfolio. The mean of economic value of all the Selected Network of Pricing Methods is computed at Rs.167.30 with a median value of Rs.137.42 per equity share. Thus, the Government of India could have realised more by upto Rs.59.05 per equity shares (upto Rs.11596 crores), if the valuation and pricing aspects of disinvestment have been marketed based on range of economic values derived from Selected Network of Methods Pricing, prominently practiced by the acquirer and the divestor, all over the globe. The observed quantum of average under-realisation per equity share based on median value of Rs.58.26 per equity share is also nearer to the mean value of Rs.59.05 per share. However, it is also observed that in the gradual time phase the mean values of DP realised have improved upon, may it be due to experience amelioration.

In order to have an explicit pictorial view of derived values presented in Table 5.15, the Chart : 5.0A showing scientific comparison of Mean Value of Disinvestment Prices (MVDP) with Grand Mean of Value of Derived Economic Prices (MVDEP) of shares determined by applying the Selected Network of Pricing Methods and the resultant under realisations per an equity share of Rs. 10 /- is presented in the diagram form as under:

CHART : 5.0A


MISPRICING FROM MAJOR DISINVESTMENTS IN INDIA
(PER EQUITY SHARE OF RS. 10/-)
300
250
200
150
100
50
0
34.85
121.68
86.83
42.87
117.48
74.61
244.96
276.91
31.95
110.15
153.15
43
1991-92
1992-93
1994-95
1995-96
MEAN VALUE OF DISINVESTMENT PRICE
MEAN VALUE OF DERIVED ECONOMIC PRICES BASED ON SNPM
UNDER- PRICING - THE DIFFERNCE

5.08 SENSITIVITY ANALYSIS

With a view to find out, the strategic impact of **windows of opportunity** available in the form of range of economic prices derived under reference, a sensitivity analysis at varying economic values derived at different percentages level viz. at 100%, 90%, 80% and at 70% of Mean Economic Value of Selected Network of Pricing Methods are computed in the following Table 5 16 From the sensitivity analysis of different mean economic value of Selected Network of Pricing Methods, it is found that during the first two years of disinvestment, even at 70% level (i.e. with 30% discount) of the derived value, there is still under-realizations. In the year 1994-95 the under-realisations existed at 90% level and not at 80% and 70% level. This was, *inter alia*, due to realisation of the fact of under-realizations in previous years and criticisms from oppositions. However, in this year as well, valuations were made based on adhoc approaches and not the pricing methods practiced by the acquirer and the divestor all over the globe For the year 1995-96 even at 80% level the fact of under-realisations is found from the study Therefore, on an average even if discount of upto 35% to the value to the economic value is allowed, the probability of under-realisations can not be ruled out

TABLE : 5.16

SENSITIVITY ANALYSIS OF UNDER REALISATIONS FROM DISINVESTMENT DECISION

(Rupees)

PARTICULARS	*1991-92*	*1992-93*	*1994-95*	*1995-96*
MVDP	34 85	42 47	244 96	110 15
Grand Mean of Economic Value of SNPM				
***100%**	121 68	117 48	276 91	153 15
*** 90%**	109 51	105 73	249 21	137 83
***80%**	97 35	93 98	221 52	122 52
***70%**	85 18	82 24	193 83	107 20
Under Realisations				
***100%**	*(-) 86 83*	*(-) 74 61*	*(-) 31 95*	*(-) 43 00*
*** 90%**	*(-) 22 68*	*(-) 62 86*	*(-) 04 25*	*(-) 27 68*
***80%**	*(-) 62 50*	*(-) 51 11*	*(+) 23 44*	*(-) 12 37*
***70%**	*(-) 50 33*	*(-) 39 37*	*(+) 51 13*	*(+) 2 95*

ALTERNATIVE SENSITIVITY ANALYSIS OF UNDER REALISATIONS

Under realisations are also computed by comparing the mean value of DP against mean value of a minimum range and a maximum range value of descriptive statistic. The result of said analysis is exhibited in the Table 5 17. Based on this analysis, the quantum of under-realizations per equity share of Rs.10/- is more than the mean value observed in Table 5 16 (*supra*). Accordingly the per equity share under-realisation works out to Rs.152.57 (1991-92), Rs 244.13 (1992-93), Rs.231.34 (1994-95) and Rs.80.27 (1995-96) respectively. The sensitivity of varying discount is also computed and compared and the results suggest that in the year 1991-92 even at 20% level i.e upto 80% of discount to the derived value results into under-realisations. Likewise, discount of upto 85% in the disinvestment year 1992-93, upto 49% in the disinvestment year 1994-95 and upto 42% in the disinvestment year 1995-96 also observed the under-realisations

TABLE : 5.17

UNDER REALISATION BASED ON MEAN OF MINI-MAX RANGE VALUE OF DISINVESTED PORTFOLIO

YEAR	*MVDP (Rs.)*	*MEAN OF MINI-MAX RANGE (Rs.)*	*UNDER REALISATI-ONS (Rs.)*	*ABSOLUTE UNDER-REALISATION (Rs. in Crores)*
1991-92	34 85	187 42	(-) 152 57	13304
1992-93	42 87	287.00	(-) 244.13	10886
1994-95	244 96	476 30	(-) 231.34	4574
1995-96	110 15	190.42	(-) 80.27	123
AVERAGE	108 20	285.28	(-) 177.07	28887

Keeping in view the above mentioned strategic, economic, fundamental and statistical analysis of Selected Network of Pricing Methods, *a posteriori*, strong, statistically significant and economically significant evidences are found **to summarily reject the null hypothesis** under reference. This ological result buttressed the need and motivations for not only the divestor but also for the acquirer/investor to strategically

use the Selected Network of Pricing Methods for optimal determination of valuation and pricing of a disinvestment project. The range of economic values derived from Selected Network of Pricing Methods helps convince all the stake holders delightedly and above all, afford the innovative capabilities for negotiating a better deal in a form of ***windows of opportunity*** in the process of due diligence and of price discovery To wit, the analysis of research results observed from the study under reference, *a posteriori*, it is summarised as under :

(a) Strong and Strategically, Economically and Statistically significant evidences have been found to reject the "null hypothesis" that all the means of economic values of a share derived from Selected Network of Pricing Methods for disinvestment are equal. Therefore, in a typical decision of management and implementation of strategy of acquisitions and divestments bailiwick, the scientific and ological study of repertoire of methods of pricing for determination of a range of optimal economic values and prices do matter much strategically and economically, *inter alia*, to add value and to create wealth for all the stake-holders and India.

(b) Strong, Statistically and Economically significant evidences of under-pricing/realisations from disinvestment proceeds have been found from the *fundamental comparison* of economic prices derived from Selected Network of Pricing Method practiced by the bailiwick of acquirers and divestor with Disinvestment Prices, all over the globe

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