

# ALUMINIUM INDUSTRY

## The Impact of Decontrol

D.K. MITTAL

17693

Indian aluminium industry has become truly global. With the coming on stream of the public sector National Aluminium Co. Ltd. (NALCO) in 1987-88, the entire aluminium scene —in terms of production, pricing and import/export —has undergone a total transformation. From the position of a regular importer, the country has turned into a net exporter of aluminium metal. NALCO, the largest producer of the metal in the country, is also the Asia's biggest and among the world's six largest aluminium producers. The company linked the domestic price of its products to the London Metal Exchange (LME) on November 25, 1994 and is sailing successfully in the turbulent international waters by achieving high levels of exports. NALCO alone exported 371000 tons of alumina and 61500 tons of aluminium during 1993-94 while the targeted exports by the company during 1994-95 are 400000 tons and 65000 tons respectively. In addition, the Hindustan Aluminium Co. (HINDALCO) and Indian Aluminium Co. (INDAL), both in the private sector, are also contributing to exports. The total export of aluminium during 1992-93 was 1.13 lakh tons, which came down to 81000 tons in 1993-94 and an estimated 66000 tons in 1994-95, mainly due to rising domestic consumption, including increased captive consumption by aluminium producers, particularly HINDALCO and INDAL.

### GROWTH HISTORY

The history of aluminum industry in India started in 1929 with the manufacture of aluminium utensils from imported aluminium sheets. Aluminium smelting commenced in 1943 with a small plant set up by INDAL at Alupuram in Kerala, producing only 1292 tons during the year of inception. By 1991-92, the production had gone upto 5.12 lakh tons, but declined to 1.65 lakh tons in 1993-94, mainly on account of recessionary conditions, not only in India, but world-wide. A view of aluminium production in India is given in Table 1.

Aluminium industry in India started growing rapidly only since 1960 with the setting up of the third smelter by INDAL and the commencement of commercial production by HINDALCO in 1962. At present, there are five primary aluminium producers in the country — Bharat Aluminium Co. (BALCO) and NALCO in the public sector, and HINDALCO, INDAL and Madras Aluminium Co. (MALCO) in the private sector. MALCO is sick for the

---

Dr. D.K. Mittal is Reader, Department of Commerce, Shri Ram College of Commerce, University of Delhi, Delhi.

last many years due to unviable plant size, high power tariff and a highly irregular and unadequate power supply. The combined capacity of these five companies is 6.10 lakh tons. JNDAL, HINDALCO and NALCO are contemplating further expansion. In addition, the first two are diversifying into secondary production with greater value additions.

Table 1 : Aluminium Production in India

Year	Production (tons)
1950-51	4045
1955-56	7450
1960-61	18317
1965-66	62058
1970-71	168784
1975-76	187276
1980-81	199034
1985-86	264827
1988-89	357000
1990-91	449328
1991-92	512332
1992-93	483399
1993-94	465500

All integrated aluminium plants in India acquired technologies from the then established international sources, e.g., INDAL from Alcan of Canada, HINDALCO from Kaiser of the U.S.A., MALCO from Montecatinni of Italy, BALCO from Chemokoplexo of Hungary and Tsvetmetpromexport of the U.S.S.R., and NALCO from Aluminium Pechiney of France. The aluminium industry is on the growth path and more smelters will have to be put up in future. This requires an intensive indigenous R & D and a judicious import of balancing state-of-art technology. Efforts on technological front need to be complemented by adequate infrastructural support, a regular adequate supply of power for this power intensive industry, and supportive economic policies including price, distribution and import/export policies. Till February 1989, the price and distribution controls were imposed to balance the requirements of the aluminium industry and the users, particularly the State Electricity Boards (SEBs) and the cable and conductor manufacturers.

### **PRICE AND DISTRIBUTION CONTROLS**

Distribution of aluminium was regulated in accordance with the Aluminium (Control) Order 1970 as amended from time to time till 1978 when a new Aluminium (control) Order 1978 was issued under which producers were required to produce 50 per cent of their total metal production in the form of electric grade (EC) metal for supplying to the SEBs, and cable and conductor manufacturers as per the guidelines and allotments determined by the government. However, with the substantial addition to total output by NALCO in 1988-89 (about 80000 tons) and that too of high grade aluminium

to meet entire demand from SEBs and cable and conductor producers, the allocation system for EC-grade metal had lost relevance. The stage had been reached when the producers of primary metal could be left alone to deal with the demand for EC-grade metal on the basis of market development. The government, therefore, took the right decision to lift all distributional controls on aluminium industry on February 28, 1989. This proved to be one of the first step in the direction of over-all deregulation and liberalisation of the economy in general.

Formal price control on aluminium was also imposed under Aluminium (Control) Order 1970. The prices in 1970 were frozen at pre-budget level and a Working Group headed by the Chairman BICP was appointed to look into the pricing policy. In May, 1971 the Government accepted the Working Group's recommendation that a *uniform ex-factory price* be fixed for all producers and an *excise duty rebate* may be granted to two smaller producers, vis. MALCO and Aluminium Corporation of India (ALUCOIN) which had higher per unit cost of production. Selling prices were fixed more or less on the basis of costs incurred by INDAL which was the lowest cost unit. The control price was not accompanied by any retention price and the system operated adversely for ALUCOIN, HINDALCO and MALCO. The situation continued till 14.7.1975 with price revisions on 23.5.1974 and 11.3.1975.

All these four units were in the private sector and their cost of production differed substantially due to their size and operating efficiency and above all to variations in electricity rates chargeable to these units. Under the pressure of heavy losses, due to high cost and uniform retention price, ALUCOIN closed down in September 1973. Had differential retention prices based on cost norms as allowed later (in July 1975) been introduced earlier, the closure of this unit could have been avoided.

The entry to the industry of a high cost public sector unit Bharat Aluminium Corporation (BALCO) brought about a change in the pricing policy. From July 15, 1975 a system of 'pooled price' and 'differential retention price' was introduced whereby the consumers obtained aluminium at a uniform pooled price but the producers enjoyed differential retention prices depending on their respective cost structure. The excess of pool price over the retention price for the aluminium sold by low cost producers (i.e. INDAL and HINDALCO) was to be credited to the Aluminium Regulation Account (ARA) operated by the Government, while high cost producers (i.e. BALCO and MALCO) received the excess of retention price over pool price from this account.

The system of dual pricing was also introduced from July 1975. Under the scheme, on the one hand, power rates payable by aluminium producers to the State Electricity Boards (SEBs) were rationalised and raised with a *variable escalation clause*; on the other hand, electric grade (EC) aluminium was to be supplied at lower rate to SEBs. The aluminium producers both in the public and private sectors were required to supply 50 per cent of their output in the form of EC-grade aluminium at "Cash Cost", i.e., without

covering any charge for depreciation and interest on capital. This share of the total output of aluminium was called 'levy' metal and its price was controlled. Though the price payable to each producer was based on its actual cost, the final price to the user was pooled through Aluminium Regulation Account, which was designed to be operated on no-profit-no-loss basis. The balance of the output could be freely sold by the producers at the prevailing market price.

The price of 'levy' aluminium was required to be reviewed by Bureau of Industrial Costs and Prices (BICP), which in its report submitted in November 1976, recommended continuance of pooled price with necessary revisions in the retention prices payable to different producers. BICP suggested that the price of 'levy' aluminium (to the extent of 50 per cent of the output) could be based on the estimated post-tax return of 12 per cent on net worth. Since balance of the output was to be sold in the open market, there could be no guarantee regarding over-all return on total capital invested.

Price control on aluminium was amended in October 1978 by abolishing dual pricing. It was decided to have a uniform controlled consumer price of aluminium ingots (with a small differential between EC grade and CG grade). However different retention prices for different producers were allowed on the basis of a maximum of 12 per cent return on net worth. The cost norms and return on capital were to be calculated on the assumption of 85 per cent capacity utilisation.

The implications of the system were : (i) Administered prices would change with the changes in costs of production. (ii) Return to the producers would fluctuate with the changes in capacity utilisation which heavily depended on regular supply of adequate power — beyond the control of primary producers due to absence of sufficient captive power generation, a situation that prevailed till 1986-87. Thus profitability of primary producers could be adversely affected due to factors beyond their control. (iii) There was need for frequent revisions in the retention prices payable to the producers so as to grant them the intended return; and also a matching frequent revision in the administered price so as to avoid deficits in ARA.

For all primary producers, other than INDAL, retention prices were revised on 4.10.1979 based on raw material prices prevailing in early 1979. This revision had taken place after full one year as earlier revision had taken place on 18.10.1978. During 1979-80 there was a rapid increase in costs. Power, CPC and pitch alone contributed 60 per cent of the increase in cost of production. Consequently, in 1980 all manufacturers were incurring a loss on sales of metal : private sector primary producers (HINDALCO, INDAL and MALCO) were losing around Rs.2,000 per ton of metal while the public sector company BALCO, with its larger interest and depreciation overheads lost more than Rs. 10,000 per ton. Situation improved somewhat due to rapid revisions in the retention prices on 27.3.81, 6.8.81 and 3.12.81 to neutralise a substantial portion of cost increases.

The profitability position of primary producers worsened again due to

a failure to revise retention prices for a period of about two and a half years. Throughout 1982, 1983 and the first quarter of 1984, the costs had continuously escalated but there was no revision in retention prices which stagnated at the level earlier fixed on 3.12.81. This adversely affected not only primary producers but also downstream user industries. During 1983, the primary producers had to sell the aluminium metal at prices below their actual cost of production. Irregular power supplies aggravated their losses due to uncompensated increases in costs. Thus, the primary producers were losing both on input costs as well as higher per unit overhead costs resulting from low capacity utilisation. The revision in retention prices on 9.5.84, increasing them for INDAL, HINDALCO, MALCO and BALCO from Rs.14,485 to Rs.17,423 per ton, Rs.12,365 to Rs.16,923, Rs.15,472 to Rs.22,051 and from Rs.18,051 to Rs.21,689 per ton respectively, eased the position.

After 9.5.84 the next increase in retention prices and the selling prices of the metal was effected on December 20, 1985. This price hike took into account escalation in power cost that took place upto April 1985. As regards the increases in power cost since then and the increases in the cost of other inputs since February 1983, the government entrusted to the Bureau of Industrial Costs and Prices the task of detailed cost examination. The BICP submitted its findings and recommendations in April 1986, but the government took full one year to take decision on the recommendation. The government revised the prices on February 28, 1987 to be effective from 1.3.1987. The prices of commercial grade ingots were increased by 20.4 per cent, that of Electrical-conductor grade ingots by 22.4 per cent and of Electric-conductor grade wire-rods by 21.7 per cent. Retention prices were also accordingly revised.

The operation of above price controls on aluminium metal had created a lot of distress in the industry circles due to the following weaknesses in the *de facto* implementation of the system of retention prices :

- (i) Revision of retention prices generally took care of cost of production during the period prior to the one to which the revised prices related, thus leading to an unrealistic determination of cost.
- (ii) All costs were not taken into account as stated earlier.
- (iii) Price revisions many times intended to compensate the producers only for major cost hikes such as that of power.
- (iv) Increases in costs due to under utilisations due to uncontrollable factors like inadequate and irregular supply of power from SEBs were not compensated.
- (v) Aluminium companies were obliged to supply EC-grade aluminium to SEBs at controlled prices without any reciprocal obligation on SEBs either regarding power tariffs or regular supply of adequate power.
- (vi) Cost escalations were regular while the retention price revisions were always with a substantial time lag, sometimes as long as 2½

years, causing heavy losses to the primary producers during the intervening period.

- (vii) The system of varying retention prices meant a premium on inefficiency as high cost producers were paid higher retention prices out of Aluminium Regulation Account (ARA) to which contributions were made by low cost producers. Thus, low cost producers subsidised the operations of high cost producers.
- (viii) There was also a complaint that though there was a restriction on the prices chargeable by the primary producers, there was no restriction on the prices chargeable by the producers of downstream products using cheap controlled price aluminium. Thus the benefit of price control did not pass on to the ultimate consumers but was eaten away by producers of consumer goods and their distributors.

In addition to the above weaknesses in the actual operation of the system of retention prices the aluminium industry scenario had also undergone a total change by the end of 1988 rendering the system of controlled prices not only unsatisfactory but also irrelevant.

Emphasising upon the growing irrelevance of controls on aluminium prices, Aditya Birla, Chairman HINDALCO had pointed out that the aluminium price policy was formulated at a time of shortages but with the commissioning of the 2,18,000 tons capacity NALCO smelter in the public sector, the scenario had completely changed by 1988-89. With the emergence of surplus situation, the control pricing policy was considered as anachronistic and deregulation of prices was emphatically sought. It was also argued that since administered prices could not be revised frequently, and input prices kept on rising, the net effect had been a rising cost of production continuously eroding the margin that was initially envisaged in the administered price.

Due to the problems in the implementation of retention prices, clamouring by the industry for deregulation and the end to the scenario of shortages on account of flowering of NALCO which led to a sharp increase in the country's production of aluminium metal to 3,56,652 tons in 1989 with public sector production of 1,82,073 tons accounting for 50 per cent share in total production, the government lifted all controls on pricing and distribution of aluminium on 28th February 1989 effective from 1st March 1989. The decontrol meant that neither the low cost producers were to contribute any amount to Aluminium Regulation Account (ARA) nor the high cost producers could receive any contribution from ARA. Producers were also made free to determine their production-mix in view of market demand and supply and product profitability. All primary producers of aluminium believed that decontrol would increase their output and profitability.

## Aluminium Industry

### IMPACT OF DEREGULATION ON PRODUCTION AND CAPACITY UTILISATION

Deregulation of prices and production-mix had a salutary effect, both on total output as well as capacity utilisation. While during five years before deregulation, the capacity utilisation hovered around 70 per cent (Table 2), after deregulation the utilisation level was around 80 per cent during the early nineties (Table 3). Total output from HINDALCO and INDAL improved significantly during 1989-90, 1990-91 and 1991-92, though major portion of output additions came from newly established NALCO (Table 3). Total output and capacity utilisation could have improved further, but for the recessionary situation during these years, both nationally as well as internationally.

Table 2: Aluminium Production and Capacity Utilisation by the Industry and Four Major Producers *before* Deregulation

YEAR	PRODUCTION IN TONS				INDUSTRY UTILISATION TOTAL (%)
	HINDALCO	INDAL	BALCO	NALCO	
1980-81	75438	72400	28777	--	199161 62
1985-86	122059	37455	89453	--	259980 73
1986-87	122306	28079	96523	--	257000 71
1987-88	122770	30211	91111	25335	278000 77
1988-89	124880	49487	93351	80000	357600 61

TABLE 3: Aluminium Production and Capacity Utilisation by the Industry and Four Major Producers *after* Deregulation

YEAR	PRODUCTION IN LAKH TONS				INDUSTRY UTILISATION TOTAL (%)
	HINDALCO	INDAL	BALCO	NALCO	
1989-90	1.31	0.66	0.91	1.35	4.27 70
1990-91	1.40	0.65	0.92	1.51	4.49 74
1991-92	1.66	0.62	0.92	1.92	5.12 84
1992-93	1.62	0.39	0.91	1.91	4.83 80
1993-94	1.54	0.30	0.92	1.94	4.65 76

### DEREGULATION AND IMPORT/EXPORT OF ALUMINIUM

Till 1989, India was a big importer of aluminium metal (Table 4). Imports had peaked 117617 tons of metal in 1980-81. After decontrol the country is able to expand exports of aluminium metal and value added products in a highly competitive international market (Table 5). It is estimated that the exports will rise to 112 thousand tons by 1996-97 and to 118 thousand tons by the year 2000-01.

Table 4: Aluminium Import *before* Deregulation (in tons)

Year	Import (tons)
1985	31070
1986	64177
1987	78146
1988	7303
1989	38995

TABLE 5: Aluminium Exports *after* Deregulation

Year	Export (000 tons)	Value of Export (Rs. Crore)
1990-91	36	120.91
1991-92	72	263.18
1992-93	113	443.93
1993-94	81	327.53

### IMPACT OF DEREGULATION ON THE PRICES OF ALUMINIUM METAL

After deregulation the prices of aluminium metal rose disproportionately despite a situation of abundant supplies, mounting stocks with the primary producers and an overall recession in the economy, particularly in the automobile industry which is a major consumer of aluminium. The appropriateness of price hikes can be examined in relation to cost increases and also by relating them to international prices. Rate of profit improvement much ahead of improvement in sales also points towards exploitative price adjustments.

Table 6: Cost Changes in Aluminium Industry 1988-89 to 1992-93 (Rs. Crore)  
Total for HINDALCO, INDAL, BALCO and NALCO.

	1988-89	1991-92	1992-93
Raw Materials	385.79	705.2	811.26
Energy	474.22	656.3	695.95
Other Mfg. Exp.	33.78	24.57	21.20
Wages & Salaries	118.56	173.47	199.35
Other Expenses	85.45	114.01	139.45
Total Cost	1097.80	1673.55	1867.21
Total Output (in tons)	345000	512000	483000
Approximate Cost per ton (Rs.)	32000	32700	38500

The increase in per ton cost of aluminium metal during 1988-89 to 1992-93 is approximately 20 per cent (Table 6) while the increase in prices have been disproportionately high. The average retention price to major producers at the time of decontrol was approximately Rs.23000 per ton. Immediately after the decontrol the primary producers had frozen the supplies for



about a week after which they raised the prices by Rs.2000 to Rs.2500 per ton with effect from March 1, 1989. In April 1990, the producers again raised the prices of CG grade ingot by Rs.2000 per ton, i.e. from Rs.31750 per ton to Rs.33750 per ton. Thus producers had increased their prices by about 15 per cent in just one year after decontrol. However, during the same period open market prices registered a decline. From April 1989 to March 1990 the Bombay monthly average price fell from Rs.45280 per ton to Rs.44420, in Calcutta from Rs.46000 to Rs.43750, and in Delhi from Rs.45750 to Rs.44250, mainly due to mounting stocks with the producers.

Aluminium producers again hiked the prices in November 1990 and August 1991 — the first round of Rs. 2000 to Rs. 2100 per ton in the case of ingot and rod prices and the second one of the order of Rs.3600 to Rs.3750 per ton. As a result of these hikes the market price of ingot moved upto around Rs.53000 in March 1992. Including all the duties, the end price to the user worked out to around Rs.60000 per ton in October 1992. Thus during the first three years after decontrol, though the cost of production had gone up by about 3 per cent (Table 6), the producers had hiked their prices by more than 30 per cent. No wonder, while at the time of decontrol the average market price of aluminium during 1988-89 was only 7 per cent higher than the London Metal Exchange (LME) prices, these were on the average 60 per cent higher during 1989-90, 64 per cent higher in 1990-91 and 78 per cent higher during September 1991.

Even now the price hikes in India are maintaining faster pace than the increase in LME prices of aluminium metal. During August 1994 when international price trends were turning bullish at \$1425-1430 per ton, NALCO increased its ex-factory metal price from Rs.44400 to Rs.48000 per ton, about 7 per cent over international prices. Again after 25 days the price was raised to Rs.55000 per ton. In tune with the rise in LME price to a four year high of \$2010 per ton, NALCO raised the metal price further by Rs.6500 per ton on Nov. 25, 1994 so as to peg it at Rs.61500 per ton. The pace of price increase continues. During the last week of January 1995 NALCO further raised the price of aluminium in the domestic market by Rs. 3300 to Rs. 64800 per ton to match the rise on LME.

The extent of price hikes and profiteering by major producers can also be gauged from the study of increase in profits vis-a-vis increase in sales, though part of the increase in profits is due to product diversification and export efforts. However, the fact should not be lost sight of that disproportionate profits accrued which could not be fully explained by improvement in capacity utilisation.

In case of HINDALCO, during 1988-89 (15 months) sales amounted to Rs.563.55 crore and the net profit was Rs.28.17 crore. For 1993-94, these figures were Rs.924 crore and Rs.157.9 crore respectively. Thus, against 64 per cent increase in sales, the net profit increased by 460 per cent (Table 7).

Table 7 : Increase in Sales and Profits (Rs. Crore)

	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94
<b>HINDALCO</b>						
Gross Sales	563.55	608.00	671.63	855.90	975.60	924.00
Net Profit	28.17	64.41	64.82	88.04	107.40	157.90
<b>INDAL</b>						
Gross Sales	446.00	536.40	564.20	672.80	778.5	859.00
Net Profit	27.70	58.50	51.70	34.27	42.9	51.08
<b>BALCO</b>						
Gross Sales	367.68	422.21	467.15	518.59	513.00	627.98
Net Profit	5.22	1.10	0.19	0.19	1.86	15.00
<b>NALCO</b>						
Gross Sales	492.24	871.97	905.00	993.63	1169.00	1196.00
Net Profit	12.96	156.87	71.94	59.14	135.90	157.7

In case of INDAL, during 1988-89 to 1993-94, sales increased by 93 per cent while net profit increased by 94 per cent (Table 7). Nearly equal increase because INDAL was not a big beneficiary of decontrol and also suffered most due to power shortages. HINDALCO had enjoyed the maximum benefit from deregulation.

During the same period BALCO's sales increased by 70 per cent while net profit increased by about 200 per cent. NALCO was undergoing capacity expansion during 1988-89 and hence sales and profits for 1989-90 give better picture. During 1989-90 to 1993-94 though sales increased by 37 per cent, there was no increase in profits (Table 7).

Thus, the over-all picture is that the profits have increased at much higher pace than the increase in sales, though in between the years, the situation varied substantially. This tendency is seen maximum during 1993-94 and also during 1994-95, though complete results of the year are awaited.

To sum up, after decontrol aluminium industry has gained significantly in terms of output, sales, exports and profits though the price of the metal has increased disproportionately when measured against cost increases as well as international prices of aluminium. Any scheme of liberalisation should, therefore, devise in-built systems to ward against the exploitation of the vulnerable sections of the economy due to free play of market forces. The government must understand that a free economy can survive only if it is also a fair economy.

#### NOTES AND REFERENCES

1. 'Aluminium costlier', *The Economic Times*, 31-1-1995, p. 1.
2. Basu, Basistha, 'Fears of aluminium shortage, high prices put manufacturers in a bind', *The Economic Times*, 21-7-1994, p. 23.

3. Das, Ajoy K., 'Global boom may fuel fresh aluminium price hike', *The Economic Times*, 28-10-1994, p. 1
4. Das, Ajoy K., 'Nalco links domestic price to LME', *The Economic Times*, 25-11-1994, p. 9
5. Dubey, Rajeev and Shukla, Satyendra, 'With an eye on the long shot', *The Economic Times*, 9-12-1994, p. 1
6. Gomphe, Neeta, 'Aluminium units hit by power shortages, tariff imbalances' (Second of three), *The Economic Times*, 22-12-1978
7. Goyal, Arun, 'Aluminium duty cut will fail to check price', *The Economic Times*, 24-10-1994.
8. Gupta, Nandini Sen, 'A programme to prove its mettle', *The Economic Times*, 29-7-1994, p.111
9. 'INDAL meets global dip with exports', *The Times of India*, 13-11-1994, p. 13
10. 'INDAL net profit climbs to Rs.51 crore', *The Economic Times*, 15-6-1994, p. 11
11. Jain, Amit, 'Bharat Aluminium — Slipping into a new mould', *The Economic Times*, 11-3-1994, p. 7
12. Kapoor, Pragati, 'Balco to propose equity restructuring', *The Economic Times*, 16-11-1994, p. 24
13. Kasbekar, S.R. and Piriera, Joseph, 'Aluminium Cos : on the bounce', *The Economic Times*, 12-5-1994, p. 9 and 10
14. Mishra, Vijay N., 'Aluminium — the Silver Streak', *The Economic Times*, 1-11-1994, p. 10
15. Mittal, D.K., *Price Policy for Public Enterprises* (Anmol, New Delhi 1988), Chap. 5.
16. Mittal, D.K., *Price Control — Policy, Theory and Practice* (Anmol, New Delhi, 1991), Chap: 8.
17. 'NALCO plans equity slash, capacity rise', *The Times of India*, 10-11-1994, p. 18
18. Panchal Saliil, 'Nalco may fail to cash in on rising prices', *Business Standard*, 3-11-1994, p.5
19. Patnaik, Nageshwar, 'Nalco declares 2% dividend, reports Rs.156-crore profit', *The Economic Times*, 3-10-94, p. 13
20. Rai, Pushpa, 'Hindalco industries — Proving its mettle', *The Economic Times* 14-3-1994, p. 1
21. *Report of the Committee on Controls and Subsidies* (May 1979), para 20.2.4.1
22. 'Rising prices may see Indal resuming work at Belgaum', *The Economic Times*, 11-11-1994, p. 12
23. Roy, Subrata, 'Indian Aluminium — Teaching the leviathan to walk', *The Economic Times*, 26-11-1993, p. 7
24. Sahitya Srichand, 'Hoping for demand revival', *The Economic Times*, 12-5-1994, p.9
25. Sahitya Srichand, 'Boom time for aluminium Companies', *The Economic Times*, 3-8-1994, p.11
26. Shobhana Chandra, 'Exporting for better growth', *The Economic Times*, 12-5-1994, p.10
27. Venkatesh, Latha and Andrews Salim, 'Happier days' at Hindalco', *The Economic Times*, 18-7-1994, p. 1