

CHAPTER VI

INCOME FROM MINING AND QUARRYING

In this chapter an attempt has been made to examine critically the available data for estimating the contribution of mining and quarrying sector to national income, to describe in detail the existing methodology as outlined in paragraph 2.125 to 2.129 of the Final Report of the NIC to indicate the improvements that can be effected in the methodology in view of the availability of fresh statistical material and to present the revised estimates for the years 1955-56 to 1959-60 on the basis of the improvements suggested.

2. Prior to the year 1955, data on quantity and value of minerals were being collected and published by the Geological Survey of India (GSI). From 1955 onwards, due to certain technical facilities, the Indian Bureau of Mines (IBM), which was previously collecting data on minerals from the GSI or Chief Inspector of Mines has been directly entrusted with the task of primary collection of data on mining under the Mineral Conservation and Development Rules, 1955. The data so collected are published regularly in 'Mineral Production in India' with mineral-wise and State-wise break-up of quantity and value of almost all the major minerals produced in India. The IBM, however, does not collect data on coal, salt, petroleum and 'minor minerals' such as bentonite, saltpetre, fuller's earth, building stone etc. and minerals prescribed under the Atomic Energy Act, 1948. In respect of manganese ore and mica, the available data on production and pit head value were defective till recently. The position regarding collection of data on these minerals is briefly mentioned in the next paragraph.

2.1. The Coal Controller and the chief Inspector of Mines collect data on coal which are published regularly in the 'Monthly Review of Coal Production and Distribution' and the 'Monthly Coal Bulletin' respectively; the IBM publishes data on coal without directly collecting the data. Data on salt are collected and compiled by the Salt Commissioner, Jaipur. In regard to petroleum, the data on production are collected on statutory basis since 1950 by the Petroleum Division of the Ministry of Steel, Mines and Fuel; these data are, however, not published. Data on value of minor minerals are collected by the IBM from the Departments of Mining and Geology in different States who collect these data on a statutory basis; the coverage is fairly satisfactory since 1957. In regard to minerals declared as prescribed substances under the Atomic Energy Act, the responsibility of collection of data is that of the Atomic Energy Commission, Bombay; such data are, however, not released and are not included in the estimates presented here.

2.2. The data on salt as published in 'Mineral Production in India' relate to rock salt and other salt. Other salt is mainly salt obtained from sea water which could be considered as product of the industry sector; however, the whole value of other salt is accounted for in the mining sector for the present.

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2.3. The data on mining as published previously by the GSI and by the IBM are on calendar year basis. The estimates of net output for this sector published so far in the annual 'Estimates of National Income', therefore, related to calendar years only although national income estimates in general are prepared on financial year basis. As the IBM is now collecting data on minerals on monthly/quarterly basis, it will be possible in future to compile estimates for the financial year. However, on the basis of certain unpublished quarterly estimates made available by the IBM estimates on financial year basis have been attempted and presented in this section for 1956-57 onwards. For the year 1955-56 also an attempt has been made to bring estimates to financial year basis by utilising monthly data in respect of coal, iron ore and certain other minerals which together account for more than one half of the total output of this sector. For remaining minerals, no such adjustment has been possible for the year 1955-56.

3. *Evaluation of output* : The basis of evaluation of output of different minerals is the pit head value per unit and the value figure published in 'Mineral Production in India' is arrived at by making use of pit head prices of the minerals in the stage in which it has been extracted from the earth; they may include the value added on account of some minor processing activity that is usually carried out at the mine site. There are certain departures from this general procedure and they are discussed below :

3.1. *Manganese ore* : Before the IBM took up the task of collecting mineral statistics, information on pit head value of output of manganese ore was not available and the output of this mineral was being evaluated at average export price per unit for purposes of estimating national income. This procedure naturally leads to over estimation.

3.2. *Mica* : The figures of output reported by the GSI for different years upto 1954 were believed to be considerable underestimates as the export figures were found to be invariably higher than the production figure (with little or no import of mica into the country). It is possible that due to decentralised nature of extraction of mica, some of the mines exploiting mica on a small scale were not reporting their production. Quantity of export of mica was, therefore, accepted as the minimum estimate of total production of mica and was evaluated at the price per unit of dressed mica as implicit from the quantity and value of production reported by the GSI. This procedure is defective in as much as no account is taken of the domestic consumption of mica (which may not be very significant) and since it led to some over-estimation in evaluation at too high a price. Export of mica consisted of (i) blocks and splittings and (ii) wastes and scraps. Wastes and scrap formed the major portion of exports and its export price per unit was considerably lower as compared to that of blocks and splittings or dressed mica. Evaluation of total quantity of exports (of which wastes and scrap form a substantial portion) at the price of dressed mica, obviously leads to considerable overestimation.

3.3. *Gold, Silver, Lead and Zinc* : For gold and silver the value figures supplied by the IBM relate to the metal output, the value figures for lead and

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zinc relate to concentrates. Concentrates and metals are processed products of ore and their values thus include value added on account of some processing activity. In the absence of any suitable basis, however, no adjustment has been made on this account. It may be added that among these minerals only gold is somewhat important in terms of value.

3.4. The gross value of output of minerals at current prices was so far being obtained by aggregating the value figures as published by the IBM or the GSI except that for manganese ore and mica and adding thereto the value figures for petroleum, manganese ore, and mica obtained in the manner described earlier. As the IBM is now making available the pit head value of manganese ore, this value has been accepted in place of the estimated value at export rates. The IBM has furnished similar data for the past years also and as such it has been possible to build up these alternative estimates from the year 1950 onwards. In respect of mica, since 1955, the figures of production collected by the IBM under the Mineral Conservation and Development Rules have, it is believed, improved considerably in their coverage. Unlike in the earlier years they are reported in terms of crude mica and the quantity produced exceeds the quantity of mica exported during the corresponding period. There is no justification in continuing the earlier practice and pit head value of crude mica as reported by the IBM has, therefore, been accepted from 1955 onwards in the present revised estimates without any adjustment. For earlier years the average value of production during the three years 1955, 1956 and 1957 has been projected backward on the basis of the trend exhibited by the figures of value of dressed mica as published by the GSI. In the case of 'minor minerals' the value figures for the years 1948-56 have been obtained on the basis of the average value during the years 1958 and 1959 and its proportion to the average value of all other minerals during these two years in order to ensure complete coverage.

4. *Estimation of net output* : To estimate the net output of the sector the deductions which were being made so far related to

- i) mining expenses,
- ii) coal consumed in collieries, and
- iii) depreciation.

Mining expenses, in the absence of any other reliable information, were being allowed for at the rate of 5 per cent of the gross output. The cost of coal consumed in coal mines was obtained from the publication 'Coal Statistics in India'. Allowance for depreciation was obtained from the results of the analysis of balance sheets of mining companies carried out by the RBI.

4.1. The RBI has recently analysed the balance sheets of a number of mining companies and has published the results in its monthly bulletins. This study covers 47 coal mining and 9 other mining companies in the sphere of public limited companies and 3 coal mining and 2 other mining companies in the sphere of private limited companies for the years 1955 to 1958. The entire mining expenses and a part of the item 'other expenses' of these mining companies have been considered

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as cost items. These expenses for coal mines and other mines were blown up (on the basis of paid-up capital) for all public limited and private limited companies separately and have been expressed as a percentage of the corresponding value of production estimated by adjusting the total sales for change in stocks. The results are given in Table 6.1.

TABLE 6.1: PERCENTAGE COST ON ACCOUNT OF MINING EXPENSES AND DEPRECIATION

(1)	1955		1956		1957		1958	
	mining expenses	depre- ciation	mining expenses	depre- ciation	mining expenses	depre- ciation	mining expenses	depre- ciation
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. coal mines								
a) public limited companies	35.2	4.6	33.9	4.3	33.0	3.7	31.5	3.0
b) private limited companies	39.6	15.8	36.1	12.6	37.4	14.0	—	—
combined	36.2	5.0	34.5	5.0	34.2	4.3	—	—
2. other mines								
a) public limited companies	44.2	2.1	42.4	2.4	43.4	2.9	42.6	3.0
b) private limited companies	65.0	2.5	64.3	3.6	50.0	—	—	—
combined	52.5	2.3	53.0	4.1	46.6	2.9	—	—

4.2. This would indicate that the deduction of 5 per cent on account of mining expenses and approximately another 5 per cent (of value of coal output only) on account of coal consumed in collieries, hitherto being made, is a considerable underestimate of the cost involved. However, it is suspected that the balance sheets analysed by the RBI will cover all the activities of these mining companies such as distribution and some processing and trade besides pure extraction of minerals from earth and thus may not relate entirely to mining activity. To this extent the percentage cost so worked out is likely to be misleading when attention is confined to mining activity alone and this may possibly account for the high percentage cost of mining indicated by company balance sheet analysis. Further, the mining expenses indicated in the balance sheet statements, it is feared, may possibly include the royalty paid and thus tend to overestimate the cost of mining.

4.3. The 'Report of the Coal Price Revision Committee on the Bengal-Bihar Coalfields and the Outlying Coalfields' issued by the Ministry of Steel, Mines and Fuel provides an analysis of the cost structure of coal production which is reproduced in Table 6.2.

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TABLE 6.2: COST OF PRODUCTION OF COAL

(Rs. per ton)

items	amount
(1)	(2)
1. wages	9.55
2. labour amenities etc.	1.10
3. salaries and administration	1.70
4. stores	1.75
5. power, royalty, cess, collieries' own consumption of coal and other miscellaneous items	1.85
6. depreciation	1.70
7. brokerage and commission	0.25
8. total	17.90

4.4. To the above estimate of average cost of production the Committee adds a profit margin of Rs. 1.75 per ton and recommends a price of Rs. 19.65 per ton of coal. Of this total price of Rs. 19.65 per ton the contribution to national income may be taken as Rs. 14.60 (constituting wages, labour amenities, 95 per cent of salaries and administration, royalty (Rs. 0.59) and profits) or about 74.4 per cent. The mining and other expenses form about 17.0 per cent (stores, power, collieries' own consumption of coal, cess, brokerage and commission and miscellaneous items) and depreciation about 8.6 per cent.

4.5. An estimate of the wage and salary bill of mining employees along with the income assessed for tax purposes in the group 'Mining and Quarrying' in the income tax statements has also been examined to indicate the approximate level of the income generated in the mining sector and this also supports the view that the percentage mining expenses indicated by the RBI balance sheet analysis is on the high side.

4.6. The paper 'Production, utilisation and cost structure of mining in India, 1954-55' by Messrs. Dey and Sanyal of the ISI contains some data on the cost of mining from which the percentage of mining expenses to total output was worked out at 15.7 per cent for coal mines and 13.7 per cent for other mines. Taking all the above results into consideration, the percentage of cost on account of mining expenses has been taken at 17 per cent both for coal and non-coal mines inclusive of the imputed deduction on account of banks and insurance services. Similarly a percentage allowance of 5 per cent for depreciation in coal mines and 3 per cent for other mines, have been adopted here. Further attempts to improve the basis of netting are being made in consultation with the IBM. However, this would take some more time as the necessary material will have to be collected and analysed by the IBM.

5. The present revised estimates of net output at constant prices have been compiled by evaluating the output of the current year at the base year average pit head price, the percentage deduction made on account of mining expenses and depreciation being the same as in the base year.

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5.1. The revised estimates incorporating the improvements discussed above, have been built up and presented in Table 6.3 whereas comparison of the same with the conventional estimates has been made in Table 6.4.

TABLE 6.3: NET VALUE OF MINERAL PRODUCTION IN INDIA

mineral	(at current prices)					(Rs. crores)
	1955-56	1956-57	1957-58	1958-59	1959-60	
(1)	(2)	(3)	(4)	(5)	(6)	
1. building materials	3.6	3.2	3.9	4.4	4.9	
2. coal	56.3	66.5	82.5	91.1	97.2	
3. copper ore and corundum	2.6	3.0	2.4	2.3	2.1	
4. gold	5.3	5.7	5.2	4.9	5.6	
5. iron ore	3.2	4.0	4.4	5.0	6.3	
6. manganese ore	10.8	13.4	13.7	10.7	9.3	
7. mica	3.0	2.2	2.4	2.5	2.4	
8. salt	4.8	5.5	8.0	7.6	5.9	
9. others	8.9	11.5	12.8	13.4	15.2	
10. total gross value	98.5	115.0	135.3	141.9	148.9	
11. deductions :—						
i) mining expenses at 17 per cent of gross value	16.7	19.5	23.0	24.1	25.3	
(ii) depreciation at the rate of						
a. 5 per cent for coal mines and	2.8	3.3	4.1	4.6	4.9	
b. 3 per cent for non-coal mines	1.3	1.5	1.6	1.5	1.5	
12. total net value	77.7	90.7	106.6	111.7	117.2	

TABLE 6.4: COMPARISON OF GROSS AND NET OUTPUT IN MINING SECTOR ACCORDING TO REVISED AND CONVENTIONAL METHODS

(Rs. crores)

year	gross output		net output	
	conventional estimates	revised estimates	conventional estimates	revised estimates
(1)	(2)	(3)	(4)	(5)
1955-56	109.8	98.5	96.7	77.7
1956-57	134.3	115.0	118.6	90.7
1957-58	154.5	135.3	137.3	106.6
1958-59	156.5	141.9	139.8	111.7
1959-60	158.8	148.9	141.6	117.2

- Notes :—1. Conventional estimates relate to calendar year whereas revised estimates essentially refer to financial year.
2. The difference between conventional and revised estimate is mainly due to (i) manganese ore, (ii) mica and (iii) revised netting procedure.