



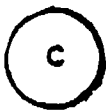
**GOVERNMENT OF INDIA
TARIFF COMMISSION**

REPORT
on
The Fair Ex-Works Retention Prices
of Steel for the Period 1st April 1960 to
31st March 1962

BOMBAY, 1962

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India, Tariff (——Commission)
Report on the Fair Ex-Works Retention
Prices of Steel for the Period 1st April
1960 to 31st March 1962.



सत्यमेव जयते

PERSONNEL OF THE COMMISSION

Shri K. R. P. AIYANGAR	.	.	.	<i>Chairman</i>
Shri J. N. DUTTA	.	.	.	<i>Member</i>
Shri J. N. SENGUPTA	.	.	.	<i>Member</i>
DR. R. BALAKRISHNA	.	.	.	<i>Member</i>

SECRETARY

SHRI PRAMOD SINGH



No. SC(C)-2(27)/62

GOVERNMENT OF INDIA

MINISTRY OF STEEL & HEAVY INDUSTRIES

(DEPARTMENT OF IRON & STEEL)

7th September, 1962.

RESOLUTION

Steel Retention Prices

The uniform retention prices for steel payable to the Tata Iron & Steel Co. Ltd. and the Indian Iron & Steel Co. Ltd. were enquired into by the Tariff Commission in 1955. In their Resolution No. SC(A)-2(149)/55 dated the 1st of February 1956, Government accepted the Tariff Commission's recommendation that the average retention price payable to the two major producers should be fixed at Rs. 393 per ton. Government also agreed to examine, on merits, claims for escalations in retention prices resulting from changes in railway freights, changes in statutory prices of coal and other fuel etc. As a result of the escalations allowed, the basic retention prices fixed in 1956 were increased under the Escalator Clause four times and the weighted average escalated retention price in force on the 31st of March 1960 was Rs. 474.59 per ton including excise duty. The prices then fixed were for a period of five years from 1955-56 to 1959-60.

2. A reference was made to the Tariff Commission by the Government on the 13th of March 1961 to enquire and recommend, having regard to the various agreements with the steel companies, (i) what the normal retention prices of steel should be for the period from the 1st of April 1960 to the 31st of March 1962; and (ii) the special element that should be allowed in the price in addition for payment by the Tata Iron & Steel Co. Ltd. and the Indian Iron & Steel Co. Ltd. of interest on and repayment of the special advances made to those companies by Government.

3. A similar reference regarding the fixation of pig iron prices for the period 1-4-60 to 31-3-62 was made on the 1st of August 1961. Meanwhile, after having a preliminary cost examination of the Tata Iron & Steel Co. Ltd. and the Indian Iron & Steel Co. Ltd. undertaken by the Cost Accounts Branch of the Ministry of Finance, Government decided to increase the retention prices of steel to an average of about Rs. 512 per tonne. This price was provisional and was subject to adjustments in the light of Government's decision on the recommendations of the Tariff Commission.

4. The Commission having conducted an enquiry submitted their report at the end of April 1962. The main recommendations of the Commission are as follows:—

- (i) The average fair retention price of saleable steel (inclusive of the special element for payment of interest on and repayment of special advances) for 1960-62 should be Rs. 550 per tonne.

This recommendation was based on an assessment of a fair or standard block on the basis of a comparative study of the capital blocks of the existing units. The Tariff Commission recommended that for the price period 1960-62, a capital block of Rs. 1300 per tonne of saleable steel should be reasonably representative;

- (ii) A return at 8% on the representative block of Rs. 1300 per tonne of saleable steel and interest on an estimated working capital at six months works cost equivalent at 5% should be allowed;
- (iii) Based on an equated payment spread over a period of 20 years, the special element allowed in the retention price for payment of interest on and repayment of the special advances should be Rs. 8 per tonne of saleable steel (this element is included in the price of Rs. 550 per tonne);
- (iv) The fair retention price of steel ingots for 1960-62 should be Rs. 344 per tonne, inclusive of the special element of Rs. 8 per tonne for payment of interest on and repayment of the special advances;
- (v) The price of pig iron recommended by the Commission means roughly an increase of Rs. 3 per tonne over the existing prices.

5. There are other recommendations of a general kind which the Commission have made with the object of improving the production of iron and steel in the country.

6. After carefully examining the recommendations of the Commission, the Government have come to the conclusion that for the period 1960-62 there is insufficient justification for accepting a block of Rs. 1300 per tonne. The Government have, therefore, decided to base the retention prices on a block of Rs. 1176 per tonne. This figure has been arrived at on the basis that the plants should have worked at 100% of capacity instead of 90% optimum mentioned by the Tariff Commission and after excluding from the capital block the special advances paid to the companies by Government. The Government also consider that the working capital provision allowed at six months of the works cost equivalent is rather high and feel that a provision on the basis of four months works cost should be adequate. Finally, in revision of their earlier decision taken in 1959, the Government now consider that it is not necessary to provide an element in the retention price for the payment of interest on and the repayment of the special advances. The agreements with the companies provide for an alternative method of repayment of a part of the special advances with interest, namely an issue of share capital by the companies, at such time or times as the Government of India, may in agreement with the companies, decide. This will be considered further by Government. Government have accordingly decided to exclude the element of Rs. 8 per tonne recommended by the Commission on this account

from the retention price to be fixed. As a result of these decisions the average retention price of steel produced by the main producers, whether in the private or in the public sector, will be fixed at a uniform rate of Rs. 522.50 per tonne for the period 1st of April 1960, to the 31st of March 1962, which means an increase of Rs. 10.50 per tonne over the provisional price fixed earlier, instead of the increase of Rs. 38 per tonne recommended by the Tariff Commission. The detailed retention prices recommended by the Commission for different categories of steel will be scaled down suitably in accordance with the above decision and will be announced shortly. Lest there should be any misunderstanding, Government would like to make it clear that the controlled price of various categories of steel for sale to the public will not be raised as a result of this decision to increase the retention price payable to the main producers.

7. As regards the retention price of steel ingots, for similar reasons Government propose to fix this price at Rs. 326 per tonne. Similarly for pig iron, after making a deduction on account of the reduced provision for working capital, Government propose to fix a retention price which is Re. 1 per tonne lower than the price recommended by the Commission.

8. The Government have also considered the other general recommendations of the Commission regarding regular supply of raw materials (particularly coal), improvement of sintering and ore handling facilities, more regular transport arrangements for both raw materials and finished products, adoption of latest technological advances etc. They have accepted these and will also commend them to the steel plants for implementation.

9. The recommendations of the Commission related only to the period 1st of April 1960 to 31st March 1962. A view has also to be taken of the prices to be fixed after the 1st of April 1962. Government have decided that the prices to be fixed for the period 1960-62 should also be applicable *provisionally* beyond the period 1st April 1962, subject to certain changes which are necessary on account of (a) the recent increase in the statutory price of coal and (b) the increase in the railway freight from July 1st, 1962. The effect of these changes will be announced shortly. The final prices to be fixed for the period after 1st April, 1962 will be decided after further consideration.

ORDER

ORDERED that a copy of this Resolution be communicated to all concerned and that it be published in the Gazette of India extraordinary.

N. N. WANCHOO,
Secretary to the Government of India.

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REPORT ON THE FAIR RETENTION PRICES OF STEEL

1.1. In their letter No. 63(1)-T.R./61, dated 13th March 1961 the **Reference to the Government of India, Ministry of Commerce and Commission.** Industry, have asked us to inquire and recommend—

- (i) what the normal retention prices of steel should be for the period from 1st April 1960 to 31st March 1962; and
- (ii) the special element that should be allowed in the price in addition for payment by the two companies, namely, Tata Iron and Steel Co. Ltd. and Indian Iron and Steel Co. Ltd. (hereinafter referred to as TISCO and IISCO respectively), of interest on and repayment of the special advances.

1.2. The grant of the advances referred to in (ii) above and the provision about their repayment are governed by the agreements dated 15th July 1953 and 21st July 1955 between Government and IISCO and the agreement dated 24th May 1954 between Government and TISCO. These have been printed as Appendices I, II and III to our Report (1959) on the Levy of interest on Special Advances to the Tata Iron and Steel Co. Ltd. and the Indian Iron and Steel Co. Ltd. Government had already accepted our recommendations that interest on these advances should be charged at the rate of 5 per cent as from 1st July 1958 and that the recovery should be postponed until a decision is taken regarding the common retention price to all the main producers of iron and steel both in the public and private sectors after 31st March 1960.

1.3. Besides the agreements referred to above, the Government of India entered into two more agreements one dated 23rd June 1955 with TISCO and the other dated 30th June 1956 with IISCO (Appendices IV & V to our 1959 Report). They are valid till 31st March 1962. By these agreements Government have declared that the retention prices for all categories of steel manufactured by the two companies and any other main producers of iron and steel either in the public or private sector shall be the same, and in respect of such categories solely manufactured by any of them the retention prices shall be fixed on a comparable basis. For this purpose Government have suggested that equality of prices should mean equality of prices of common categories and not equality of the weighted average price, and that the prices of categories produced by some steel works only would have to be fixed in relation to the prices of common categories on the basis of known or standard differentials.

1.4. As regards the other main producer of steel, namely, Hindustan Steel Ltd. (hereinafter referred to as HSL), Government have stated that as its three works (Bhilai, Rourkela and Durgapur) are not yet in full production, it might be difficult to cost them and we may therefore have to be largely guided by the experience of the established producers, namely, TISCO and IISCO in regard to works

cost. In respect of overheads like depreciation and return which are related to capital costs and which manifest considerable divergencies between different units *inter se*, the consideration of "standard costs" for fixing the relevant elements in the price has been suggested. Government also desire that the question of reimbursement of excise duties levied on ingots on the basis of actuals should be taken into account in fixing common retention prices.

1.5. In their letter No. D.O.SC(C)-2(88)/60, dated 22nd January 1962 the Government of India, Ministry of Steel, Mines & Fuel (Department of Iron & Steel) have also asked us to recommend along with other categories the retention price for steel ingots. ~~Texts~~ of Government references regarding fixation of common retention prices of steel and ingots are given in Appendix I to this Report.

2.1. On 13th July 1961, letters were issued to the three main producers of steel in the country, namely, TISCO, IISCO and HSL, asking them to furnish to us detailed memoranda **Method of inquiry** about their capacity, production, expansion programmes, capital outlay, etc. The Iron and Steel Controller, Calcutta, was requested to furnish data regarding (i) the final retention prices (average as well as category-wise) payable to the producers of steel from time to time for the period 1st April 1955 to 31st March 1960, (ii) the average and category-wise selling prices for the same period, (iii) the average and category-wise provisional retention prices to each of the main producers for the period 1st April 1960 to 31st March 1962 and (iv) details regarding the transactions effected through the Steel Equalisation Fund (now part of the Consolidated Fund of India) during each of the years from 1955-56. The Coal Controller, Calcutta was requested to furnish a comprehensive note on metallurgical coal in our country, and the requirements of and supply to each of the producers of iron and steel in the private and public sectors. The Director, Geological Survey of India, Calcutta, was addressed for a detailed note on the deposits of limestone and dolomite including their distribution to each of the producers of iron and steel in the private and public sectors. The Bisra Stone Lime Co. Ltd., Birmitrapur (Orissa State), a principal supplier of limestone to the steel plants, was requested to furnish details of the demand, supply, quality, prices, etc. of limestone supplied by it. The Railway Board, New Delhi was addressed to give the present position regarding the availability of wagons for movement of raw materials and finished products of the iron and steel industry. The Ministry of Agriculture was addressed for information regarding the prices paid by it from time to time since 1st April 1960 for the ammonium sulphate produced as by-product by the three producers of iron and steel. The Indian Embassies in U.S.A. and France and the Indian High Commission in the U.K. were requested to furnish information about the differentials for the various categories of steel in those countries.

2.2. Shri R. N. Dutt was appointed by Government as Technical Consultant to the Commission for this inquiry.

2.3. Particulars are given in Appendix II of the visits made by the Commission and its officers in connection with this inquiry.

2.4. The cost investigation of TISCO and IISCO was done at our request by a Cost Accounts Officer of the Office of the Chief Cost Accounts Officer, Ministry of Finance. The cost investigation of the units of HSL was undertaken by a Cost Accounts Officer of the Commission.

2.5. Discussions with the representatives of the steel companies, the Coal Controller and the Iron & Steel Controller were held in camera at the Commission's office in Bombay from 23rd February to 1st March 1962. Particulars of dates of meetings and persons who attended the discussions are given in Appendix III. Having regard to the limited nature of the terms of reference it was not considered necessary to hold any general discussions in public. Nevertheless, the views of persons and associations who had sent us written memoranda were duly considered, whether or not they sought an opportunity for discussion at an open meeting.

3. A brief account of the evolution of price control may be useful in appreciating the policies of Government. A reference to **Policy of price control.** Appendix IV of the Report may be made for the purpose. Price control was initiated during the war period to ensure defence supplies and was thereafter continued in a situation of shortage for civilian requirements as well. An arrangement for price equalisation was started mainly to subsidise imports. It is now continued to equalise the selling prices to the consumer on ex-rail head basis. The initial rehabilitation of their works by the two producers, which was started after World War II, was later enlarged into wider schemes of expansion and modernisation. For achieving this objective this essential industry was encouraged by Government in various ways through grant of loans and special advances, by guaranteeing the I. B. R. D. Loans and allowing elements in the price through *ad hoc* depreciation allowance and a 'development' element to meet a part of the cost of expansion. Price fixation had therefore to take note of these developmental aspects to stimulate the growth of the industry.

4.1. The previous pattern of uniform retention prices payable to TISCO and IISCO was based on the recommendations contained in **Scope of the inquiry and our approach.** our Report of 30th November 1955. We were guided by the directives of the Government of India to the effect that the main producers of steel should be paid uniform retention price (taking note of higher costs of IISCO) which should include an element to enable the financing of the approved expansion schemes of TISCO and IISCO and that the extra profits resulting from this element should be earmarked specifically for development and expansion (*vide*, Government of India, Ministry of Commerce and Industry Resolution No. SC(A)/2(141)/53, dated 16th May 1955 contained in Appendix I to our 1955 Report). Government's directive in this behalf has been incorporated in their agreements of 23rd June 1955 and 30th June 1956 with the two companies referred to in paragraph 1.3. The average

retention price of Rs. 393 per ton recommended by us took into account the costs of IISCO which were higher and provided for escalation with reference to the 1954-55 retention prices of the two companies. In terms of the agreements the companies are required to fund separately, solely for implementing their approved expansion programmes, the excess of the effective retention price, duly escalated from time to time for changes in railway freight, changes in statutory prices of coal, other fuel, raw materials, stores or machinery and changes in labour costs caused by labour legislation or adjudication or conciliation awards, over the 1954-55 retention price similarly adjusted from time to time. The retention prices recommended by us were for a period of five years from 1st April 1955 notwithstanding the fact that the agreements with the companies just referred to were for seven years ending 31st March 1962 and both the companies were planning to complete their expansion programmes within a shorter period of three years. The bulk of the expansion which received assistance was completed during the price period. On the basis of escalation, prices have been revised since then four times; twice in 1957 and 1958 on our recommendations and twice subsequently on the recommendations of the Cost Accounts Branch of the Ministry of Finance. On the basis of a preliminary cost investigation of TISCO and IISCO by the Cost Accounts Branch of the Ministry of Finance, Government decided to increase the retention price to an average of Rs. 520 per ton or Rs. 512 per tonne subject to such adjustments as may be found necessary in the light of their decisions on the recommendations we may make for the price period from 1st April 1960 to 31st March 1962. The element for financing the expansion plans allowed in the Five year period 1955-56 to 1959-60 has not been included in the provisional prices which have been approved by Government.

4.2. We have been asked to inquire and recommend what the 'normal' retention prices of steel should be for the period from 1st April 1960 to 31st March 1962. Simultaneously, as the questions of application of standard costs and payment of interest on and repayment of the special advances have also to be taken into account, we may have to consider a basis which would also apply to future prices.

4.3. Government have indicated that, for the uniform retention prices to be recommended for common categories of steel, what is required is not the quality of the weighted average price of each company, but equality of the prices of common categories produced by them. The prices of other categories produced only by some of the steel works will have to be fixed in relation to the prices of common categories on the basis of known or standard differentials. As far as works costs are concerned, these are to be determined for individual categories, mainly on the experience of established steel works. It is, therefore, necessary to compute works costs of both the established steel works and in doing so we are free to consider norms of performance, consumption and efficiency before determining the basis of uniform prices for common categories. After such uniform prices have been determined, prices of non-common categories will have to be fixed on the basis of standard or known differentials.

4.4. Further, as stated in paragraph 1, Government have observed that as the three works of HSL are not in full production it might be difficult to cost them and the Commission might have to be guided by the experience of TISCO and IISCO in regard to the works costs. This matter, however, is also for further investigation and decision by us. To what extent the actual costs reflected in the working of the three public sector steel plants during the period from 1st April 1960 to 31st March 1962 may be considered as normal could be decided only after examination of the average level of production at which these plants worked during the period under consideration and on the detailed report of the Cost Accounts Officer. We accordingly decided that such a cost investigation of HSL should be attempted particularly in view of the fact that some of the non-common products are manufactured by them. For reasons explained later we have, however, not been able to use costs of these units for the present price fixation.

4.5. As regards the element for payment of interest on and repayment of special advances by TISCO and IISCO, we have stated in paragraph 1.2 that Government have decided that the two companies should be charged interest at 5 per cent on the special advances from 1st July 1958. The actual amount of recovery has, however, been postponed until a decision is taken regarding the common retention prices to all the main producers of iron and steel both in the public and private sectors after 31st March 1960. We have to consider the inclusion in the price of an element for repayment of the advance and payment of interest inclusive of arrears. This is further discussed in paragraph 9.8.

4.6. In determining present prices Government have asked us to consider application of "standard costs". The term has a special connotation in cost accounting and applies to both works costs and overheads. In its application to works costs the emphasis is on norms of efficiency. A wider application of this concept to the present price fixation may be difficult due to divergencies in size, age and sources of installed machinery, production processes and product-mix of the different units. Even in Western countries there appear to be no established standard costs to which all producers should conform. Perhaps the intent of Government was to apply the norm only in relation to the capital block. Works costs may then be based on the costs of established plants but in accepting such costs application of fair norms so as to avoid unjustified increases is not ruled out. For purposes of arriving at other elements of price, namely, depreciation and return, we have been asked to consider the question of standard costs, which may perhaps be based on figures relating to either the capital block of a representative unit, or a hypothetical economic unit. About overheads it is clear that Government contemplate a departure from the methods so far adopted for allowing depreciation and return. The whole question of depreciation and return is discussed in paragraph 10.

4.7. As regards categories which are not common, Government have suggested that prices should be fixed on the basis of known or standard differentials. The current differentials in the retention prices of various categories of steel are broadly based on the recommendations

of the Tariff Board in its Report of 1951. Having regard to changes in the product-mix arising from the change in pattern of orders on different steel plants by the Iron and Steel Controller, the producers have asked for refixation of differentials, if necessary by adding to the categories or subdividing them. Some new categories have been introduced in the classified product-mix and price differentials have been claimed for them. An expert committee has been set up by Government to go into the question of determination of "extras" for different categories of products. This is further discussed in paragraph 9.7.

4.8. While our survey would conform to the changed pattern of cost determination contemplated in our terms of reference and our recommendations about prices be limited to the two year period, 1960-61 and 1961-62, we have also tried to assess the trends in the future. We are aware of the criticism from producers and others about the unsatisfactory nature of a system of price fixation which virtually tends to become retrospective and follows at too close intervals. But without a specific directive from Government or a clarification from them we have to confine ourselves to the limits of the present reference. The prices worked out by us for 1960-62 indicate a rising trend in the second year. The producers accordingly have made a point, that till future prices are determined by us, Government, while fixing provisional prices in the interim, should take note of prices assessed by us for 1961-62.

4.9. Statutory control on steel prices has been kept at two levels, namely, on retention prices and on selling prices. We have to consider in the interests of both industry and consumer the reasonableness of the retention prices *vis-a-vis* the selling prices, how far in the context of the need to expand the industry the former prices are adequate and the extent to which the production units have satisfactorily adhered to their expansion programme and justified the capital investment by increased output which alone would tend to bring about economies to be shared with the consumer. In this context the assurance of uniform prices to producers should also take note of the fact that the industry is a basic one and that enormous capital investment has been made in the public sector. The units in the latter sector are expected to make large contribution to the Plan resources, while the units both in the public and the private sectors have to be enabled to liquidate their large capital borrowings. The limitations of the price structure for a basic commodity, whose prices should also bear comparison with import prices, should not be forgotten. The industry has developed in the context of traditional advantages regarding raw materials like rich iron ore and adequate metallurgical coal, low labour costs and a steadily growing domestic market. But with the quality of the main raw materials (iron ore, coal and limestone) deteriorating and rise in labour costs it is contended that the entire advantage tends to be nullified. These very factors may also restrict the scope for exports. Though our present price fixation is confined to a period which has virtually expired, these considerations have to be examined in the light of the industry's performance and impact on future prices. That is to say, we must take note of basic factors of the industry, such as its capital

investments, plan capacity, production, shortfall in output and deterioration in raw materials. We may also have to consider how the present difficulties of the industry could be overcome and productivity increased.

5.1.1. A broad survey of the present position of our iron and steel industry would be useful for appreciating the relevant factors which have to be emphasised in price fixation. The main producers of iron and steel in the country were TISCO, IISCO and Mysore Iron and Steel Works till HSL units came into production. Separate prices have been fixed for Mysore Iron and Steel Works.

5.1.2. The expansion of the iron and steel industry has been accorded the highest priority in the successive Plans. Realising that the levels of production of this essential commodity will determine the tempo of progress of the economy as a whole, the First Plan period saw the initiation of schemes for the steel projects in the public sector. It is the Second Five Year Plan which witnessed the construction of three steel plants of one million tons ingots capacity each in the public sector with provision of additional facility in the shape of 600,000 tons of foundry grades of pig iron. The expansion plans of the two units in the private sector were also started during the First Five Year Plan period and the expanded productive capacity was scheduled to be commissioned by the middle of 1958 when their combined capacity was expected to be 3.0 million tons of steel ingots as against the level of about 1.50 million tons during the First Plan period. The overall capacity proposed for the steel industry in the Third Plan period is 10.2 million tons of steel ingots capacity and 1.5 million tons of pig iron for sale. The category-wise break-up of demand for iron and steel during the period is given below:

	('000 tons)	
	Estimated demand by 1965-66	Capacity in existence in early 1961
Heavy rails and fishplates	400	345
Heavy structurals and broad flanged beams	550	445
Sleepers and crossing sleepers	200	180
Medium and light structurals	550	680
Rounds and flats including rounds for nuts, bolts and screws.	2,200	1,305
Tin plate	300	150
Plates 3/16" and up	650	300
Wires including wire ropes	400	220
Hoops and box strapping	50	45
Sheets	1,200	740
Strips and skelp for tubes	400	188
Forging blooms and billets	300	132
Wheels, tyres and axles	100	30
TOTAL	7,300	4,760
Pig iron for sale	1,500	660—870

The share of the private sector in steel production will be 3.2 million tons of ingots. Supply of billets to re-rolling mills by the main producers has been envisaged at 1.0 million tons by the end of the Third Plan. Steel production in the aggregate is expected to rise from year to year as follows:—

Year	Million tons
1961-62	3.5
1962-63	4.0
1963-64	4.3
1964-65	5.5
1965-66	6.8

5.2. *Tata Iron and Steel Company Ltd. (TISCO):*

5.2.1. At the time of our last inquiry into steel prices in 1955 TISCO had taken up its scheme to augment its capacity to two million tons of steel ingots (TMP) and into this scheme it had dovetailed the balance of its earlier modernisation and expansion programme (MEP) of 1.3 million ingot tons. These programmes included a new coke oven battery, expansion of the boiler and power house, a new blast furnace, a sintering plant, expansion of steel melting shop, new blooming mills, a continuous bar and billet mill, skelp mill, medium and light structural mill, a new merchant mill, revamping of some old mills and provision of ancillary facilities and extension of colliery and mine development. They were substantially completed in 1959. It was to finance these schemes that the company took with a Government guarantee two loans of \$ 75 million and \$ 32.5 million from the World Bank. Upto the end of March 1960 the total capital expenditure incurred on the TMP, MEP and related works was Rs. 126.09 crores. For certain residual work of TMP and ancillaries which are yet to be completed the company has indicated its further capital requirements in 1960-61 and 1961-62 at Rs. 3.30 crores and Rs. 2.76 crores respectively. Its total gross block has risen from Rs. 69.39 to Rs. 185.52 crores from 1956 to 1961.

5.2.2. TISCO has also stated that it has been asked by Government to take steps to become self-sufficient in coal as supplies from Bhojudih washery which is yet to come into production might not be available. The company envisages a programme of capital expenditure of Rs. 41.8 crores for obtaining adequate supply of raw materials of suitable grades in order to achieve the two million ton target. But it has not made any firm commitment yet for the bulk of the expansion which includes Rs. 7 crores for mining development and ore beneficiation, Rs. 20 crores for collieries, internal ropeways and an additional washery, Rs. 6 crores for a new coke oven battery, Rs. 2.8 crores for a tonnage oxygen plant and additional facilities for and remodelling of furnaces in steel melting shop No. 3 and Rs. 6 crores for expansion of power facilities. The company has also indicated that in addition to this essential expenditure it will have to round off the expansion programme with the following works: revamping rail and structural mill

(Rs. 2.6 crores); additional facilities at medium and light structural mill (Rs. 2.5 crores); and modification of skelp mill (Rs. 1.5 crores) which are part of original TMP.

5.2.3. *Capacity*.—The following table gives the capacity of TISCO plant as on 1st April 1955 before the TMP was taken up, installed capacity planned by the company after completion of the above programme and the present effective capacity as claimed by the company.

('000 tons per annum)				
Items	Capacity before expansion (as on 1-5-55)	Present installed capacity	90% efficiency (approx.)	Present effective capacity
(1)	(2)	(3)	(4)	(5)
Coke	1,240	1,550	1,400	1,400
Iron (Hot Metal)	1,170	1,900	1,700	1,600
Steel ingots	1,085	2,000	1,800	1,600

NOTE.—(1) The figures of “present effective capacity” shown in column 5 represent, according to the producer, the maximum production capacity available at the different units under the present conditions of raw material supplies, availability of ingots, the types of orders planned on the individual mills and the condition of the plant facilities currently available.

(2) Corresponding figures for saleable steel under columns 2, 3, 4 and 5 at 0.75 ton per ton of steel ingots will work out to 0.814, 1.5, 1.35 and 1.2 million tons per annum respectively.

5.3. *Indian Iron & Steel Co. Ltd. (IISCO):*

5.3.1. At the time of our inquiry into steel prices in 1955 IISCO had taken up its expansion and modernisation scheme into which was dovetailed the earlier programme of 1953. This comprised production of one million tons of ingot steel, or 800,000 tons of saleable steel. The expansion programme which included mechanisation of Gua iron ore mines, additional coke oven batteries, two new blast furnaces, the second steel melting shop, a new bar mill and additions to billet and structural mills was to be completed by 1st December 1959. Except a few items pertaining to 34" mill and bar mill which were completed in 1960 the works were carried out ahead of schedule. Only a small spill-over from these plans was completed at an expense of Rs. 1.46 crores in 1960-61 and Rs. 1.50 crores (estimated) in 1961-62. The gross block (excluding Kulti) of the company has risen from Rs. 17.21 crores to Rs. 74.08 crores between 1956 and 1961. The company has now stated that because of the emergency that has arisen about supply and transport of coal it has to embark on a scheme of Rs. 17.58 crores

for development of its Jitpore, Chasnalla and Ramnagore collieries, installation of a coal washing plant and a ropeway. It has already negotiated a World Bank loan to cover the foreign exchange element of Rs. 9.30 crores (19.5 million dollars).

5.3.2. *Capacity*.—The following table indicates the capacity of IISCO before its expansion and after the completion of its two expansion programmes (1953 and 1955).

	Annual capacity before expansion (Tons)	Annual capacity after expansion (Tons)
*Coke	588,000	1,420,000
Pig iron	480,000	1,340,000
Steel ingot	480,000	1,000,000
Saleable steel	300,000	800,000

(*Excluding pearl and breeze)

5.4. *Hindustan Steel Co. Ltd. (HSL):*

5.4.1. This undertaking has at present three steel plants, one each at Rourkela (Orissa), Bhilai (Madhya Pradesh) and Durgapur (West Bengal). In addition, a fourth unit at Bokharo (Bihar) is contemplated. Although the company was incorporated in January 1954, production of pig iron was commenced only in the first quarter of 1959 at Rourkela and Bhilai. Durgapur plant came into production in December 1959. Particulars of each plant are briefly given below.

5.4.2. *Rourkela Steel Plant*.—This plant was the first to be taken up in the public sector and all its units are expected to be commissioned by the end of the current year 1962. In the first stage, it is designed to make a million tonnes of steel ingots to be rolled into about 720,000 tonnes of saleable steel consisting of flat products like plates, strips and sheets including cold rolled products and tinplates. The erection of the plant was entrusted to a combine of Krupps and Demag of West Germany. The major units of the plant have been commissioned. Its special feature is that for the first time in the country steel is produced by the L. D. process which carries substantial economies in production as compared to conventional open hearth furnaces installed at the other steel plants. A continuous hot strip mill as well as cold reducing continuous mills which form part of the plant are the first of their kind in India. A pipe plant with capacity of 150,000 tonnes per annum is included. The by-product plants include a large fertilizer plant for the manufacture of nitro-limestone by utilising nitrogen from the oxygen plant. The investment of about Rs. 23

crores in the fertilizer plant of 600,000 tonnes capacity marks it out as an independent productive unit. Delay in its commissioning has, however, seriously affected the economic use of gases. The capital investment on by-product plants manufacturing a wide range of chemicals is also very high being Rs. 30.3 crores inclusive of the fertilizer plant. The third blast furnace and the third battery of coke ovens have been commissioned only in January 1962. Plate mills and the cold reducing mills have been commissioned. The tinplate plant has also been completed. The rolling sections are not yet working to capacity as they are being tried out gradually. A sintering plant will be commissioned by 1964. Mechanisation of iron ore mining at Barsua has been completed and will be capable of producing 3 million tonnes ore when the plant capacity is doubled. The mechanisation of Purnapani limestone quarry is expected to be completed by the end of 1962. The capital expenditure at Rourkela steel plant for the present phase is Rs. 237.5 crores, exclusive of pipe plant and with a further estimated expenditure of Rs. 92.6 crores its production of ingots will be raised to 1.8 million tonnes and finished steel to 1.24 million tonnes. The present high capital cost is partly due to large built-in provision for further expansion and special plant and equipment for its finished products.

5.4.3. Bhilai Steel Plant.—This plant is designed to produce and roll one million tonnes of steel ingots into about 770,000 tonnes of saleable steel comprising mainly heavy structurals, rails and merchant sections. Besides, the plant will produce 0.294 million tonnes of pig iron for sale. This plant has been designed and constructed with the help of USSR Government. One coke oven battery and one blast furnace were commissioned in the first quarter of 1959. By now all the units of the plant have been commissioned and a satisfactory level of output has been reached. The Works has its own fully mechanised captive iron ore mines nearby at Rajhara and limestone quarries at Nandini. Their output has still to come up. Bhilai has special facilities for blending coal and has also installed sintering plant. The present capital cost of Bhilai (first phase) is Rs. 199.70 crores and with a further estimated expenditure of Rs. 139.8 crores the ingot capacity will be raised to 2.5 million tonnes and finished steel 1.97 million tonnes. In addition, 0.327 million tonnes pig iron will be produced for sale. The present high capital cost due to built-in facilities for future expansion will then come down substantially.

5.4.4. Durgapur Steel Plant.—The construction of the plant was undertaken by Indian Steel Works Construction Company Ltd. (ISCON), a consortium of British companies. This plant is designed to produce and roll about 1.016 million tonnes of steel ingots into 819,000 tonnes of saleable steel consisting of light sections, merchant bars, railway sleepers and wheels, tyres and axles. Two of the blast furnaces produce normally basic pig iron and one iron of foundry grade. The pig iron (foundry grade) available for sale is 330,000 tonnes a year. The steel making process includes desiliconizing by oxygen lancing instead of by Bessemer. The present capital cost of Rs. 198.8 crores will be raised by Rs. 59 crores to ensure an expansion

to 1.6 million tonnes ingot. The saleable steel output will then be 1.26 million tonnes and pig iron 0.305 million tonnes. As in the case of the other units the present high capital cost per tonne will come down with the expansion. The general service facilities at Durgapur are laid out on a liberal scale to render service to other production units located in the vicinity.

5.4.5. Appendix V gives for each of the three plants of HSL the annual rated capacity, as planned and as commissioned and production level reached up to January 1962 as percentages of the above capacities.

6.1. TISCO :

6.1.1. In 1955 we had estimated the company's output of saleable steel for the five year period 1955-56 to 1959-60 and this is compared with its actual performance during the period.

Production

Production of saleable steel.

(in tons)

Year	Estimated by the Commission	Actual production
1955-56	780,000	799,525
1956-57	800,000	799,494
1957-58	900,000	786,700
1958-59	1,200,000	885,025
1959-60	1,500,000	1,218,154
TOTAL	5,180,000	4,488,898
AVERAGE	1,036,000	897,780

Production was near our estimates during the first two years only. The shortfall during 1957-58 by 113,300 tons which increased substantially during 1958-59 to about 315,000 tons could be attributed to delays in the implementation of the TMP, whereas the shortfall during 1959-60 has been explained by the company as due to the effective capacity of the plant being lower than the planned capacity. This is said to be due to handicaps of raw materials and railway transport.

6.1.2. The shortfall in production has been attributed by the company entirely to deterioration in the quality of raw materials to an extent which according to it could not have been foreseen at the start of the expansion programme, and irregularity and shortage of railway transport for its vastly expanded requirements of raw materials. Need has arisen for additions and alterations to existing facilities mainly to cope with the above difficulties. Raw material position and transport difficulties are discussed in paragraph 7. From a study of the capacity

and performance of the main units of TISCO it would appear that though the worsening raw material and transport position is partially responsible for its lower output, it is also due to planning the capacity of certain sections of the plant to a nicety without a margin in order to save on capital cost. In other words, the company expected a far better performance from these units than what could be warranted from its own previous experience or that of other plants; and even at the time of planning it did not allow for the possibility of a worsening raw material position on its productivity and the need for flexibility in plant capacity and operational technique to meet it. The absence of spare capacity in critical units of the plant has in fact been referred to in the TISCO Chairman's Report for 1960-61. Within the next few years, however, the capacity may improve with the steps that TISCO has initiated which include installation of a tonnage oxygen plant, conversion of the open hearth furnaces in steel melting shop No. III to basic roof and application of oxygen, installation of additional battery of coke ovens and removal of the defects in its sintering plant by installation of wet screening.

6.1.3. For purposes of comparison the rated capacity and the level of production reached during the two years 1960-61 and 1961-62 by TISCO is given in the following statement along with those of IISCO and HSL.

Statement showing the annual rated capacity and level of production in the different steel plants during 1960-61 and 1961-62

Sl. No.	Items	Annual capacity	(In million tonnes)			
			1960-61		1961-62	
			Actual production	As percentage of capacity	Actual production	As percentage of capacity
1	2	3	4	5	6	7
		1—Tisco				
1	Coke	1.58	1.42	90	1.45	92
2	Iron	1.93	1.59	82	1.65	86
3	Steel ingots	2.04	1.63	80	1.65	81
4	Salable steel	1.52	1.26	83	1.32	87
		2—Iisco				
1	Coke	1.42*	1.36	96	1.44	101
2	Iron	1.28	1.16	91	1.19	93
3	Steel ingots	1.02	0.91	90	0.93	91
4	Salable steel	0.81	0.72	89	0.74	91
		3—Bhilai				
1	Coke	1.15	0.71	62	0.96	83(102)
2	Iron	1.11	0.74	67	1.01	91 (99)
3	Steel ingots	1.00	0.39	39	0.79	79(102)
4	Salable steel	0.77	0.34	44	0.59	77

1	2	3	4	5	6	7
<i>4—Rourkela</i>						
1	Coke	1.05	0.54	51	0.63	60(80)
2	Iron	1.05	0.41	39	0.46	41(76)
3	Steel ingots	1.00	0.21	21	0.34	34(46)
4	Saleable steel	0.72	0.09 @	13	0.16 @	22
<i>5—Durgapur</i>						
1	Coke	1.45	0.49	34	0.91	63(115)
2	Iron	1.33	0.42	32	0.76	57 (87)
3	Steel ingots	1.04	0.17	16	0.46	44 (64)
4	Saleable steel	0.82	0.13	16	0.36	44

[*B. F. Coke capacity for IISCO has been taken as 86 per cent of the total coke capacity of 1.655 million tonnes which included pearl and breeze.]

[@Excluding production of pipes and tinplates and ingots sold.]

NOTE.—The figures in brackets represent the percentage level of production achieved till January 1962 based on units installed.

6.2. IISCO.

6.2.1. Our estimates of the company's output for the five years 1955-56 to 1959-60 along with its actual performance may be seen from the following table:

Production of saleable steel

(in tons)

Year	Commission's estimates in 1955	Actual production
1955-56	330,000	452,912
1956-57	300,000	443,721
1957-58	375,000	412,042
1958-59	520,000	497,551
1959-60	640,000	662,113
TOTAL	2,165,000	2,468,339
Average per annum	433,000	493,668

It will be seen that except for the year 1958-59 when IISCO's output was slightly lower than our estimates its actual production for all other years exceeded the estimated output. Instead of an average of 433,000 tons per year it has produced on an average 493,668 tons a year.

6.2.2. The rated capacity and levels of production reached by IISCO in 1960-61 and 1961-62 are given in the Statement in paragraph 6.1.3. The lower production in 1960-61 and 1961-62 are attributed by the Company as, in the case of TISCO, entirely to deterioration in the quality of raw materials and difficulties of transport.

6.3. *HSL*.—The level of production attained during 1960-61 and 1961-62 by HSL units is given in Statement in paragraph 6.1.3. The units of HSL have also complained like TISCO and IISCO about deterioration in the quality of raw materials and transport position. Some of the salient features affecting their production are briefly indicated below:—

6.3.1. *Bhilai*.—With an elaborate blending yard Bhilai has to a large extent been able to overcome the disadvantages of day to day variations in quality of coal. This ensures that blast furnaces are fed with coke of fairly uniform content of ash, sulphur, etc. The sinter plant is designed to produce self-fluxing sinter. The blast furnaces of Bhilai have a special feature, namely, moisture injection which is said to lead to uniform humidity of blast and better regulation and performance of blast furnace. All the furnaces in the steel melting shops are being gradually converted to the basic roof for application of oxygen, which would substantially increase output and reduce costs.

6.3.2. *Rourkela*.—In contrast with Bhilai it suffers from some handicaps such as the absence of tipplers for unloading of coal and blending facilities for regulating the day to day variation in the quality of coal received. Due to the peculiar design of the by-products plant the entire coke oven gas is compressed as envisaged for the use of fertilizer plant. But as the erection of the latter plant has been delayed there is considerable avoidable expenditure besides loss in gas economy. The third blast furnace has been commissioned recently while the first blast furnace which was working below capacity has been taken up for overhaul within three years of its commissioning. The LD plant is, however, reported to be working satisfactorily. Although Barsua mines of Rourkela plant are mechanised the output from them is still very low.

6.3.3. *Durgapur*.—Its coal washery is working much below the annual capacity of 0.81 million tons of washed coal. The unloading of covered wagons needs improvement. Delay in the commissioning of the third coke oven battery and the third blast furnace has affected output of saleable steel during the price period. The open hearth furnaces are to be converted to basic roof and with application of oxygen, it would result in better output and considerable economies.

6.4. Production figures of saleable steel by categories in respect of the different steel plants for the years 1960-61 and 1961-62 along with those for 1959-60 are given in Appendix VI.

7.1.1. It would be relevant to survey the raw material position, as, firstly, the producers have attributed their lower output and higher costs during the present price period entirely to this reason, and secondly, a proper appreciation and co-ordinated efforts to improve the situation are essential to ensure the future expansion and development of the iron and steel industry. On an average about four tonnes of raw materials enter a steel works for every tonne of steel ingot produced or over five tonnes for every tonne

of finished steel despatched. Transport of these materials and despatch of finished steel require timely installation of new, and augmentation of existing, transport facilities by railways to the plant site and also careful planning on the part of producers for maximum utilisation of those facilities by reducing as far as possible the idle time of rolling stock and locomotives at the plant site.

7.1.2. The quantities required of the several raw materials in the blast furnace burden depend on their respective qualities. For example, the quality of iron ore determines the amount of coke and fluxes required. The quality of coal and the preparatory processes like blending and washing determine the quality of coke produced. The consumption of coke also depends on its quality as well as that of fluxes. The consumption of fluxes will depend on its own quality also. Corresponding to the present level of production of 3.5 million tonnes of steel ingots, the raw material requirements are assessed at about 14 million tonnes. The producers have bitterly complained of the difficulties which they are experiencing about their transport. The demand for raw materials will go up to nearly 24 million tonnes when the capacity production of 6 million tonnes of ingots is reached as expected by the middle of the Third Plan period. It is therefore important that rapid expansion of transport facilities must take place if output of iron and steel is not to lag behind the target. In the following paragraphs some of the problems connected with raw materials are discussed.

7.2. Coal :

7.2.1. Production of coking coal of superior grades required by the steel plants was about 13 million tonnes in 1960. The target of production of coking coal at the end of the Third Plan period is about 23 million tonnes within the overall target of coal production of 97 million tonnes which is also being raised. Coking coal is also required by Durgapur coke oven plant of West Bengal and other merchant cokerics. Demand for coal is growing fast. With the extension of mechanised mining, production of selected grades only is not possible. There is need to find an outlet for other grades also. In the circumstances control should be exercised to ensure that those who do not need the superior grades of coal should not have them and further, as these grades are getting scarce and have to be conserved, industries which must use such coal should be prepared to show greater flexibility in their usage and take all necessary steps for this purpose, such as using washed coal to a larger extent or making proper blends of coal including non-coking coal. For conserving the limited reserves of coking coal (from Jharia) a start has been made to use semi-coking coals (from Raniganj) as a blend for coke ovens. The steel plants of HSL have been designed to make use of such blends and both TISCO and IISCO have been requested to follow suit.

7.2.2. The annual requirements of coal of the different steel works and the sources of supply of both washed and unwashed coal as planned upto the middle of 1963 has been furnished by the Coal Controller and

are given in Appendix VII. The total requirements of coal upto the middle of 1963 will be about 9.84 million tons made up of—

Washed coal	6.18	Million tons
Raw coking coal	2.65	„
Dishergarh blending coal	1.01	„
TOTAL	9.84	„

The position regarding supply of washed coal to different steel plants as at present and as envisaged by the middle of 1963 is given below:

Name of the steel plant	Existing supply of washed coal as percentage of total supply to the plant	Supply of washed coal by middle of 1963 as percentage of total supply to the plant
	(Per cent.)	(Per cent.)
TISCO	50	96
IISCO	11	15
Durgapur	33	45
Bhilai	35	90
Rourkela	50	70

It will be seen from the above table that the supply position of washed coal is expected to improve by varying degrees for all plants.

7.2.3. There is an overall shortage of metallurgical coal at present. Short supply to the plants is due to lower production of such coal as well as inadequacy of transport. There was a chorus of complaints regarding coal from all producers of steel. These relate to irregular supply of coal, supply of a large portion of coal in covered wagons and mixing in the same rake of steam and gas coal. Further, all producers complained about increase in ash content of coal, washed and unwashed, inadequate supply of washed coal, supply of coal by different collieries with ash content higher than what is allowed for the particular grade supplied by them and wide variations in the quality of coal supplied from day to day.

7.2.4. TISCO and IISCO have stated that they were previously receiving selected coal from a smaller number of mines and with no serious transport difficulties were able to get regular supplies of fairly homogeneous grades. Since then a number of their old supplies have been diverted to other producers and the two companies have been asked to draw their supplies from a larger number of mines. This has resulted in wide day to day fluctuations and overall deterioration in the quality of coal and TISCO has even pointed out that the advantages which it had expected from its washed coal have been completely lost

by the allotment of these inferior coals. The progressive deterioration in the quality of coal (by increase of ash) over the last six years as indicated by IISCO and TISCO is given below:

Year	Average ash content in coal (Per cent)	
	IISCO	TISCO
1955-56	15.86	16.73
1956-57	16.47	16.49
1957-58	16.69	17.01
1958-59	16.76	17.23
1959-60	17.71	17.41
1960-61	17.94	17.88
1961-62 (April-Dec.)	18.06	18.04

The Chairman of Hindustan Steel Ltd. has also in his Annual Report 1960-61 underlined that transport of coal from the producing centres and the supply of suitable coals in sufficient quantities continue to cause difficulties.

7.2.5. Both TISCO and IISCO have pointed out the following adverse effects in blast furnace performance for increase of every one per cent of ash in coke—

- (a) Decreased production by about 3.6 per cent for each increment of ash by one per cent;
- (b) Increased coke consumption by about 4.5 per cent for each increment of ash by one per cent;
- (c) Increased limestone consumption by about 5 per cent for each increment of ash by one per cent;
- (d) Increased slag volume, involving increased expenses for slag dumping;
- (e) Decreased yield of carbon in coke which means more coke ovens and higher capital, overhead and operating expenditure;
- (f) Decreased tar and gas yield; and
- (g) Increased sulphur and phosphorus in pig iron resulting in longer heat during steel melting, increased limestone and fuel requirements for steel making and larger incidence of off-heats in steel produced.

7.2.6. Most of the difficulties pointed out by the producers could have been overcome if it were possible to ensure full supply of washed coal. We hope that with increasing availability of washed coal from washeries the problem of deterioration in the quality of coal will be less acute in future. However, looking at the enormity of the problem of transporting coal from a number of collieries and seams and distributing it to different works, such variations in the quality of coal would appear to be inevitable to some extent. They could perhaps be controlled by providing blending facilities as at Bhilai. Such blending

facilities which necessitate a large stock-yard have the additional advantage of providing buffer reserves of coal against irregularity of supply. It would however seem that neither IISCO nor TISCO may be in a position to arrange for blending as in Bhilai. For TISCO improvements in future will come only by stepping up supply of its own washed coal. For IISCO also when its own colliery development scheme gets going it may be able to solve its coal problems. But for the immediate future the need for both plants is to get regular supplies of coal delivered without traffic irregularities and to have coal supplies arranged from a smaller number of collieries. We recommend that in view of the high priority that the steel industry should receive, the Coal Controller should arrange for a smaller number of suppliers for each steel plant so as to ensure greater homogeneity of coal supplies and the Railways should also agree to some readjustment of regional transport facilities to make this step possible. Since our inquiry we have received a communication from IISCO vehemently complaining against its current allotment of wagons for coal being cut so as to accommodate the demands of new blast furnaces at Rourkela and Durgapur. IISCO, of all steel plants, receives the least amount of washed coal and no steel plant can afford to take its massive requirements of coal by road transport. We bring this matter to the notice of Government for their favourable consideration. Difficulties of handling coal wagons at the plant site, however, may be overcome by the producers by installing proper tipplers and conveyors and we recommend that applications from the main producers of steel for their import should be favourably considered by Government.

7.3. *Iron ore :*

7.3.1. In contrast with the difficulties about coal India has ample reserves of good quality iron ore. Particulars of supply of iron ore to the different steel plants are given in Appendix VIII. By the end of 1963 the requirement of iron ore for the steel plants, is expected to exceed 10 million tonnes. Barring Durgapur most of the steel plants have their captive mines and only a portion of their ore is purchased.

7.3.2. One of the important reasons for lower production of steel and consequential higher cost of steel has been stated to be the deterioration in the quality of iron ore. The expansion of steel making capacity has compelled the producers to go in for mechanisation of their captive mines. Such mechanisation has led generally to deterioration in the quality of ores and to overcome this TISCO is planning to instal a beneficiating plant.

7.3.3. In the mining operations about one third of the ore is below the size required for the blast furnaces. This is termed as ore fines. The sintering of the fines or its use after agglomeration would ensure fuller utilisation of natural resources and would reduce costs. The use of self-fluxing sinter is stated to be preferable, since if charged in substantial proportion, say, about 30 to 40 per cent of the blast furnace charge, it would ensure smoother operation of the furnaces, reduce coke consumption per ton of iron and increase the output of

the blast furnace. Only TISCO and Bhilai have installed sinter plants to make use of ore fines and Rourkela is also planning to do so. The sinter plant of TISCO is not producing self fluxing-sinter; but we are informed it may be converted to a self-fluxing sinter plant with some additional silos and some minor modifications. Both sinter plants have however suffered from the disadvantage inherent in mechanised mining where a lot more of impurities pass on into the ore fines lowering their quality and nullifying the advantages of the use of sinter. The proper remedy lies in installation of washing and other beneficiating facilities for ore fines before sintering. Experiments conducted by National Metallurgical Laboratory showed that with washing facilities (scrubbing followed by wet screening) fairly clean and enriched ore fines suitable for sintering could be obtained.

7.4. *Limestone :*

7.4.1. All the steel plants except Bhilai obtain their supplies of limestone mainly from Birmitrapur mines of Bisra Stone Lime Co. Ltd., and a small part in some cases from Hatibari. Eventually Rourkela may obtain all its requirements from Purnapani which is only 20 miles away. Bhilai has its own captive quarry at Nandini about 16 miles away and the quality of limestone is also satisfactory. The complaint of the other steel works relates to shortage of limestone of requisite quality (particularly of the better grades required for open hearth furnace) and deterioration in quality by way of increase in insoluble contents (silica and residues, that is, other than CaO and MgO).

7.4.2. Bisra Stone Lime Co. has indicated the average insoluble content of limestone supplied by it as about 10 per cent. TISCO has stated that whereas it was possible to obtain limestone with a maximum of 5 per cent insolubles previously, the insoluble content has now risen upto 12-13 per cent. IISCO has stated that insoluble percentage has increased from 7.83 per cent in 1955-56 to 9.20 per cent during April-July 1961.

7.4.3. From the information furnished by the Geological Survey of India we understand that limestone reserves of requisite quality both for blast furnace and open hearth are fairly widespread in Bihar, Orissa and Madhya Pradesh within a distance of about 300 miles from the steel plants. What is needed is efforts to expedite exploitation of resources and provision of necessary transport facilities.

7.5. In addition to the above materials, steel producers require scrap and consumable stores. As regards scrap, they use most of their own process scrap—purchases from outside being negligible. Amongst the consumable materials, refractories constitute the most important item needed by almost all the vital sections of a steel plant. Bulk of fire clay and silica bricks are now available indigenously. Chrome-magnesite bricks needed for roof lining of open hearth furnaces are imported.

8. Government have suggested that we might consider standard costs as a basis for determining depreciation and profits. These over-Consumption heads are assessable in terms of a standard or ideal norms in works costs. But as regards works costs the performance or consumption norms of different steel plants afford a basis for comparison. These costs as distinct from mere raw material costs vary between the established units and the new plants of Hindustan Steel and also *inter se* between the individual units of HSL. In fixing uniform retention prices we cannot but take into account the past performance of a unit as well as the performance of other comparable units. On this basis works costs of units have been adjusted, after discussions with the representatives of the companies concerned. We regard it as imperative that an industry of national importance established partly at the expense of Government resources must be maintained at a high level of efficiency and it should always strive to reduce its costs. Study of the costs of HSL units during 1960-62 discloses very large variations from the norms of established producers. But a trend is noticed of improving performance as production is getting stabilised in the new units at higher levels. In as much as the works cost of established producers alone will be considered, the effect of uniform retention prices will indirectly be the same as if the norms of the former have been applied to all. The representatives of HSL assured us that effective steps are already being taken to evolve a standard cost basis for better control.

9.1. *Effective capacity.*—Even in Western countries steel plants are not working continuously at 100 per cent of rated capacity. However, Works costs in the highly competitive economy of Western countries output generally follows fluctuations in demand and therefore occasional low levels of production among them cannot be regarded as true indicators of capacity production. The producers have claimed that due to adverse conditions now faced by the Indian industry, a production potential of 80 per cent of designed capacity should be adopted. The representatives of TISCO also stated that the fall in output was steep particularly when tested materials had to be produced. The lower rating is attributed to deterioration and wide day to day fluctuations in the quality of raw materials which affect operational norms, and dislocations in smooth working of the plants because of erratic and inadequate railway transport both for bringing in raw materials and for taking out finished products. We, however, consider that every unit must strive to achieve at least 90 per cent of its rated capacity. For the current price period since the effect of modern machinery has not been fully realised we have accepted the level of output achieved. As regards the future, the producers should be able to concert measures for overcoming the existing difficulties facing the newly expanded plants and higher performance norms have to be assumed.

9.2.1. *Development element.*—Producers have urged the continuance of the development element in the price for 1960-62 and also for the future in order to enable them to meet a part of the cost of expansion and modernisation. They admit that the present agreements

are for seven years only and that the last major revision of steel prices for the period ending 31st March 1960 also saw the completion of the expansion programmes. They agree not to take a purely legalistic view, since it would require them to fund the development element on the basis of escalated prices. They have instead asked for a liberal margin in price to give them adequate reserves.

9.2.2. TISCO has asked for a higher price on the ground that its costs have risen and more capital expenditure has become necessary even to maintain the present rated capacity on account of troubles with raw material, etc. The capital expenditure on MEP, TMP and related works rose to Rs. 126.09 crores from Rs. 102.54 crores estimated by us in 1955. TISCO's actual expenditure on TMP schemes and ancillaries was Rs. 3.30 crores in 1960-61, and Rs. 2.76 crores (estimated) in 1961-62. It has also stated that some of the work on revamping of mills had to be delayed on account of the non-completion of "Kaiser Works" and track work by railways due to railway remodelling of their yard being incomplete. Further, as stated in paragraph 2.2., capital works at a cost of Rs. 41.8 crores is necessary even to reach the target level of 2 million tons of production. TISCO has contended that as against an estimate of Rs. 14.1 crores for the development element in the price envisaged by us in 1955 it was able to realise Rs. 5.18 crores only. This has been attributed to production being less than what was estimated by us during the period—thereby internal resources under depreciation and surplus fell from Rs. 43 crores to Rs. 32 crores, escalation benefits being limited only to estimated production and not actual output.

9.2.3. IISCO has also stated its capital requirement under expansion works as Rs. 2.4 crores in 1960-61 and Rs. 2.47 crores in 1961-62. In addition, it has to go in for expansion of collieries, washeries and ropeway works costing Rs. 17.58 crores on account of the difficulty in getting coal of suitable grades and the Government's directive that steel companies should try to become self-sufficient in coal as far as possible in future.

9.2.4. We have given careful consideration to these requests. In so far as the provision of a development element under the Agreement is concerned, it was determined by us in 1955 on the basis of data given by the companies themselves and allowed to be spread over a five year period. If a seven year period had been taken, the spread over of the element would have been smaller. The companies expected the construction work on the plants to be completed in about three years, but we advisedly took a five year period to ensure the expanded plants reaching adequate production level. We had estimated production levels to progress steadily on satisfactory completion of various sections of the plants according to the plan. We have referred in paragraph 6.1.2. to the lack of spare capacity in certain sections of TISCO's plant. Shortfalls in output cannot be attributed entirely to circumstances beyond the control of the producers.

9.2.5. *Coal*.—We observe that the mining costs of coal of TISCO and IISCO have gone up disproportionately to that of market coal, the difference being as high as Rs. 6 to Rs. 12 per tonne inclusive of overheads. We regard such high costs as unjustified and have impressed on the producers the urgent need for stricter control over costs of mining in their captive collieries. In this connection TISCO has represented that the high cost of its washed coal is due to the levy of minimum railway freight for coal carried to its washeries and the difficulty in the disposal of middlings for lack of transport. The first difficulty may be overcome by the company only when it incorporates alternative modes of transport in its plan for colliery expansion. Since TISCO has also plans for expanding its steam and power generation facilities it should take steps to use middlings in its boilers.

9.2.6. *Iron ore*.—TISCO has represented that with the gradual deterioration in the quality of ores in some of its captive mines including contamination with laterite, it has to restrict mining operations to certain faces with the result that it has been unable to achieve any economies from mechanised mining. It is also experimenting on washing of ore fines. In regard to mining costs also an unhealthy trend is that costs of own ore are higher than that of bought ore. In the long run unless by economies in raising and by making full use of ore fines the iron ore costs are reduced, the most important advantage which our industry possesses will be lost and its competitive position will be seriously impaired.

9.2.7. *Labour*.—The picture will not be complete without considering labour productivity. Labour costs have been rising steadily with rise in wages and amenities. There was an admitted surplus of labour in certain units which is getting reduced through expansion of their capacities. By and large there has been some increase in productivity after the expansion of these units but the output per worker is still far below the average for Western countries even in units where there is no high degree of automation.

9.3. *Escalator Clause*.—TISCO has represented that provision for escalation which we recommended in paragraph 28 of our 1955 Report, being based on the company's agreement of 23rd June 1955 should have been interpreted more liberally and applied over their actual output instead of the assumed production level of 760,000 tons in 1954-55. Consequently all cost increases attributable to the rise in the cost of production, such as newer and costlier sources of raw materials and power were not admitted and shortfalls have thereby occurred. The company's contention also is that for future price determination escalation should extend to all inevitable cost increases not excluding deterioration in the quality of coal and other raw materials, adverse changes in product-mix and changes in the sources and prices of raw materials, rolls, refractories, stores, fuel and power, etc. In our view changes in consumption factors and product-mix cannot be incorporated in an escalator clause. Other points will be relevant as and when prices for a future period beyond March 1962 come to be considered.

9.4. *Contingencies.*—IISCO has represented that the margin for contingency at the rate of about Rs. 5 per ton included in the price structure from time to time since 1949 was not adequate and should be increased. It has stated that subsequent to the investigation by the Cost Accounts Officer in October 1961 prices of coal have gone up by 25 nP., lime-stone by Rs. 3 and iron ore on account of welfare schemes cess by 50 nP. per tonne and further liabilities may accrue in future due to labour legislation, etc. Extraordinary expenditure on materials handling due to transport difficulties, loss on exchange and similar contingencies have to be provided for. Inasmuch as the present price fixation is attempted almost at the end of the current price period 1960-62, this may be considered when the question of price determination for the future period comes up.

9.5. *Spelter.*—A higher cost for spelter at Rs. 1411 per tonne has been asked for instead of Rs. 1132 which was taken for the provisional prices. Having regard to market trends and the fact that ultimately the adjustment is made on the basis of actuals by the Steel Controller through the Equalisation Fund we consider that no change need be made for this virtually closed period (1960-62).

9.6. *Bonus, gratuity, etc.*—TISCO has stated that for years because of lower profits, its managing agents have foregone their commission. It urged that remuneration of managing agents should be treated as an item of cost. It argued that annual bonus to employees should not be considered as part of return but as an item of cost. It claimed that on account of the revision of wage structure the company's liability to pay retiring gratuity to employees has gone up and this should be allowed as an element under overhead in the retention price. It is unnecessary for us to repeat the basis on which managing agency commission, being a charge linked with profits, has to be met out of the element provided for return. We have also to emphasise that till the decision of the Government of India on the recommendations of the Bonus Commission has been reached, the question of our adopting profit sharing bonus as an item of costs cannot be considered. At the same time in determining the quantum of return we have taken due note of inevitable liability that is attached to the steel industry on account of labour bonus. In so far as gratuity is concerned, we have accepted it as a regular cost incident to be included in the works cost.

9.7. *Differentials :*

9.7.1. By our terms of reference we are required to determine uniform prices for common categories produced by different steel works while for categories produced by some steel works only we are to determine prices in relation to those of common categories on the basis of known or standard differentials. TISCO has pointed out that the prices for the period 1955-60 had not been fixed on such a basis for categories manufactured by it only. Fixation of prices based on IISCO's product-mix and over-all average price has perhaps caused some divergence between the scale of retention prices and actual realisation by

TISCO. The latter has asked that it should not get for non-common categories on the average less than for common categories. For the price fixation of non-common products we have to take the fair ex-works cost of the producer and apply to his output the same basis for overheads as has been adopted in the case of common products.

9.7.2. Selling prices of steel are fixed by Government as maximum base prices having regard to retention prices recommended by us. Price extras are also allowed under the Iron and Steel Control Order for different sections and qualities of controlled categories. The extras are determined by the Iron and Steel Controller on the basis of suggestions of the Pricing Committee. In the case of certain items like heavy rails no extras are provided between different weights and this has now been claimed.

9.7.3. TISCO has asked that the allocation of overheads and return to different products should be such as to provide sufficient compensation and inducement to the producing units to make the costlier and more difficult categories like plates, skelp, wheels, tyres and axles, the profitability of which must match the extra processing and costs involved. The suggestion seems unobjectionable and has been taken into account in determining the prices for non-common products. At the same time its impact on sole consumers like the Railways may also have to be considered.

9.7.4. Both TISCO and IISCO have pointed out that the lighter and more difficult sections within the same base category are less remunerative under the present price scheme and orders for them are placed predominantly on the producers in the private sector. As instances they have stated that rails of 60 lbs. and 75 lbs. are asked to be rolled by TISCO while orders for 90 lbs. and 105 lbs. rails have gone to Bhilai; plates of 3/16" and 1/4" thickness are also asked to be rolled by TISCO in spite of the necessary rolling facilities existing at Rourkela; channels of 9" x 3" and 8" x 3" which are difficult to roll, rounds of 12 mm. to 20 mm. dia. and unequal angles, tees and telegraph channels are also placed on them. For purposes of prices, rails have been divided into two categories, namely, light rails of 30 lbs. and below and heavy rails of 50 lbs. and above. TISCO has contended that as rolling speed is constant a longer time is required to roll a given tonnage of 60 lbs. rail. Because of greater wastage and longer time involved in rolling lighter sections the index of production in a given rolling time for rails of 90 lbs. 75 lbs. and 60 lbs. would, according to the company, be 100 tons, 80 tons and 70.5 tons respectively. On the basis of estimated works cost of, say Rs. 375 per tonne for 90 lbs. rails, it claims that only a price of Rs. 389 per tonne for 75 lbs. rails and Rs. 401 per tonne for 60 lbs. rails will compensate it for extra rolling time and labour involved. Technical advice received by us, however, indicates that there are comparative diseconomies in the rolling of 90 lbs. and 105 lbs. Rejections are more for such heavier rails and the market for second class or off-grade materials is also restricted.

9.7.5. Two main issues arise out of these complaints. First, whether a more equitable distribution of the orders in respect of the product-mix could not be made by the Iron and Steel Controller so that production units would bear more or less an equal burden in rolling difficult or relatively less remunerative sections, and secondly, whether there should be a differential in price so as to compensate producers for more difficult items of production. As regards the first, considering the feelings expressed by the producers of the private sector that there was discrimination against them, it is necessary that any ground for such a complaint should be avoided. It is possible at the present juncture that as plants in the public sector have yet to try out their mills on different end products which they can roll and stabilise their production accordingly, it might be considered necessary in the public interest that they should, to begin with, be asked to produce predominantly those categories which they have already tried out so that orders for the rest could be placed on others who have stabilised their production. When there is an overall shortage of steel, some such arrangement is necessary to avoid drop in production. At the same time in consonance with the obligation which the Steel Control owes to all units producing steel, every effort must be made to secure more equitable distribution of orders so as not to affect the productivity and return of the established units. The Iron and Steel Controller has told us that there is no discrimination in favour of Government plants and that orders are distributed having due regard to the delivery period required by consumers like railways and capacity available with different plants. He also mentioned that as far as possible he tried to avoid imports so as to utilise indigenous capacity to the full. He advised that no change should be made in regard to constituents of the present base categories by creating new sub-categories and that any difference in price payable to the producers for other than base sizes or specifications should primarily be examined by the *Ad Hoc* Committee on Extras. In fact TISCO has supplied a list of over one hundred items covering rails, channels, beams, angles, rounds, flats, squares, etc. of different sizes produced from different mills, for which it has claimed differentials. This would require detailed examination by an expert technical committee. We are, therefore, inclined to agree with the Iron and Steel Controller and let the matter be decided by the Extras Committee. However, having regard particularly to the case of rails where the present range from 50 lbs. and above is too wide we suggest that the Extras Committee should examine on a priority basis the claims of producers for higher prices for rails of 50 lbs., 60 lbs., etc.

9.8. *Amortisation of borrowings:*

9.8.1. Under the Agreements with the World Bank repayment of loan in instalments has to commence from 1959-60. The producers have urged that this amortisation cannot be met from the return in the current retention prices and have claimed continuance of the development element in the retention price. We are unable to agree that repayment of such loans should be covered and earmarked by an element built into the retention price. Consistent with the declaration

of fair dividends the producers should use internal resources from depreciation, reserves and current profit margins for making the amortisation provision.

9.8.2. It is only as regards repayment of the special advances that Government have agreed that there should be a special element in the normal retention prices for steel (for meeting interest charges as well as the instalments of the principal). As stated earlier Government have accepted our recommendation in our Report of 1959 that interest on special advances granted to TISCO and IISCO should be charged at the rate of 5 per cent per annum commencing from 1st July 1958, though the actual recovery could be left to be determined from a date after 31st March 1960, when a decision is taken on a common retention price for all main producers. Since we are now prescribing uniform retention prices for common categories for all producers for the period 1960-62, we feel justified in suggesting that recovery of interest and the repayment of the special advances should commence from 1st April 1960. While interest would be regarded as a legitimate outgoing, the repayment of advances will have to come out of the profit margin and be liable to tax. Under the Agreements Government have permitted both the companies the benefit of repayment of the advance after deducting taxes, that is, the amount of payment will have to be grossed up so as to include an element for tax.

9.8.3. Special advances have been given to both IISCO and TISCO on similar terms. In the case of TISCO the amount of the advance is Rs. 10 crores, while IISCO had received a second advance of Rs. 18,26,476 so that the total advance in its case amounts to Rs. 10,18,26,476. Since the price is determined in terms of a unit tonne and the capacity production of IISCO is 0.81 million tonnes against 1.52 million tonnes of TISCO, repayment of instalment for the two producers is bound to differ. If the loan liability has to be extinguished over an identical period the incidence per tonne will vary. Representatives of IISCO and TISCO have told us that the period could be 10 to 15 years. In this connection it should not be forgotten that the shorter the interval, the higher would be the element for interest and instalment for repayment of special advances. In order that the addition of the element to the retention price does not cause undue hardship to the consumer we consider that the repayment should be spread over a period of twenty years. The element for repayment of the advance on twenty year basis including (a) interest together with the arrears from 1st July 1958 and (b) instalment for repayment of the principal grossed for taxes would amount to Rs. 7.99 in per tonne in the case of TISCO and Rs. 15.29 in case of IISCO as indicated below :—

	TISCO	IISCO
(a) Amount of Special Advance Rs./lakhs	1000.000	1018.265
(b) Annual Instalment Rs./lakhs	50.000	50.913
(c) Incidence per tonne of saleable steel Rs.	3.29	6.29
(d) Incidence of Tax to be added Rs.	2.69	5.15
(e) Amount grossed up to be added (c+d) Rs.	5.98	11.44

(f) Annual instalment of interest Rs./lakhs	.	.	30·625	31·184
(g) Interest per tonne of saleable steel Rs.	.	.	2·01	3·85
(h) Payment of principal and interest per tonne of saleable steel (e+g). Rs.			7·99	15·29

The incidence per tonne of saleable steel is calculated on the basis of an equated payment spread over a period of twenty years in relation to the capacity output of each company. The actual annual payment of interest and principal towards the special advance will, however, depend on the actual quantity of saleable steel despatched in any one year.

9.8.4. We have considered the various terms of the agreements which lay down that there should be on the one hand a uniform price for common products between producers *inter se* and that the retention price should contain an element for interest and repayment of the special advances. Since the retention price of common categories have to be equal inclusive of the element for repayment of advance, only a uniform element can in effect be built into the price. Having regard to the impact on selling prices this element should be kept as low as possible. We, therefore, recommend that Rs. 8 per tonne may be taken as the special element. In so far as this element becomes part of the uniform retention price it will also be automatically included in the price of the other producer (HSL) for whom individual retention prices are not considered and for whom prices are to be determined on the basis of costs of the two established producers.

9.8.5. While we have recommended this element for repayment of special advance in retention price, we wish to draw attention also to a matter which is covered by the agreements and which is ultimately to be decided by Government as one of policy. Clause 3(c) of the agreements with IISCO and TISCO contains the following provision :

“Notwithstanding the provisions in paragraphs (c) and (d) of sub-clause (iv) of Clause I laying down the manner of repayment of special advance to make an issue of share capital at such time or times (after the 1st day of April 1963)* as the Government of India may call upon the Company to do and to repay out of the proceeds of such issue a portion of the special advance. The proposals for any such issue (including the timing, the amount of share capital to be so raised and the portion of the special advance to be repaid out of the proceeds of the issue of shares and other particulars relating thereto) shall be as may be agreed between the Government of India and the Company”.

[*occurs only in the Agreement with TISCO.]

In so far as the present capital structure of the two producers is concerned, in the context of the completion of the expansion plans, the ratio of the share capital to borrowings is low as also the ratio of share capital to fixed assets. In the course of implementing the expansion scheme TISCO has raised its share capital by Rs. 21·86 crores and

IISCO Rs. 7.50 crores. It may not therefore be expedient or feasible for them to raise further capital at this juncture. At the moment the demand on the current resources of the companies on account of liquidation of I.B.R.D. loan liabilities and also financing of additional capital expenditure is so large and as the level of production has not yet stabilized, it is difficult for us to project even an approximate time by which the companies would be in a position to raise further capital. Only during the next price period when perhaps a more realistic assessment of the resources, liabilities and performance of the companies could be made a judgment on this point may be possible.

10.1. *Depreciation :*

10.1.1. Government have suggested in their terms of reference that we may consider the adoption of standard costs as the basis for determining overheads (depreciation and return) in view of the wide divergence in costs not only between the new and the old works but also between the established works themselves. If the current practice of allowing overheads at a certain percentage on gross block is applied to the units of HSL their retention prices and the selling prices based thereon would be totally unrealistic as their capital block is excessively high in relation to their output. The approach to depreciation in previous cost inquiries had been somewhat pragmatic and was designed mainly to give the companies ampler internal resources for financing a part of their expansion. This objective was also sought to be further by other steps like the inclusion of a special development element in the price allowed for the five year period commencing 1955-56. We have now to take a decision as to whether the existing arrangement could be continued or a standard or a representative block, in preference to the individual capital block of a unit, could be adopted for the application of an appropriate rate of depreciation.

10.1.2. In 1949 the Tariff Board had followed the practice of allowing normal depreciation on gross block. The companies later represented that the amounts allowed were far from adequate to meet the essential expenditure on replacement, renewals, etc., and that a higher amount of depreciation was necessary. After careful consideration of these representations the Tariff Board in 1951 agreed to raise the provision for depreciation in the case of TISCO from Rs. 200 lakhs to Rs. 300 lakhs per annum and in order to provide the amount free of tax, fixed a gross amount of Rs. 377 lakhs. The additional amount of Rs. 177 lakhs (gross) which was in excess of normal depreciation was allowed by way of special depreciation. Similarly, in the case of SCOB in order to allow 7.15 per cent on a gross block of Rs. 7.62 crores, the net depreciation which amounted to Rs. 54.48 lakhs was grossed up to Rs. 65.74 lakhs. The sum of Rs. 25.74 lakhs (gross which was in excess of normal depreciation was, as in the case of TISCO, allowed as special depreciation. From 1953 onwards depreciation was allowed at 6½ per cent on fresh additions to gross block since March 1952 over and above the normal and special depreciation referred to above.

10.1.3. Both the main producers, TISCO and IISCO have urged the continuance of depreciation on the above basis. TISCO has stated that if depreciation at 6½ per cent is allowed on the cost of a new plant it would cover the cost of rehabilitation and replacement of the older plants at the present or future higher cost and also leave a margin to cover the factor of obsolescence, which is an important one in an industry like the steel industry where technological advances are proceeding at a fast rate. It has also drawn attention to sections 205 and 350 of the Companies Act which make it compulsory for depreciation provision to be made either on the normal income tax basis or at a scale of rates which would provide for writing off of 95 per cent of the depreciable assets during a period comparable with that on the former basis.

10.1.4. It may be observed that our steel industry has generally followed a pattern similar to that of the straight line method in providing for depreciation though the requirements of such a method have not been fully complied with. IISCO is laying by depreciation at an average rate of 5 per cent on its wasting assets, following the straight line method. HSL has also decided to follow the straight line method for depreciation and on the basis of technical advice is appropriating 5 per cent on the original cost of wasting assets towards depreciation. A switch over completely to a straight line basis for depreciation for cost purposes will not therefore be a new departure for the steel industry.

10.1.5. It is not necessary for us to discuss the relative merits of different systems for providing depreciation. Depreciation has now become a statutory obligation and both the diminishing balance method and the straight line method have their merits and received statutory recognition. For ensuring price stability in a highly capital intensive industry like iron and steel it is desirable to have uniform contributions from year to year to make good the wastage of productive assets. For this purpose the straight line method has obvious advantages.

10.1.6. The next point for consideration is whether a rate of 6½ per cent on gross block for depreciation is essential or reasonable. Analysis of depreciable assets in use will show that in a steel plant a greater part of assets constitutes plant and machinery whose life periods are assessed at about 12 to 25 years. For items like buildings, roads and ancillary services for factory and colony and railway sidings, the life periods are much longer. For assets like steel melting furnaces and blast furnaces the life of the main structure is much longer and suitable allowance is made for expenditure on re-lining at regular intervals during the life period. It is, therefore, obvious that the entire block of a steel plant may not entitle itself to a rate of depreciation as high as 6½ per cent. The overall average may be nearer a rate of 4 to 5 per cent.

10.1.7. The rate of depreciation has to be linked with the life of the category of plant and machinery. The present rates approved for income tax purposes which have been in force since 1939 have a certain bias in that they enable in industry to recover a proportionately

higher quantum of depreciation over the value of the assets during the first years of their life. Apart from the value of this provision as an incentive to industry in certain circumstances, the industry has the benefit of a tax holiday or a carry-over of arrears of depreciation. Application of the above rates to the costs of a unit in a highly capital intensive industry would spell an enormous burden through prices in the initial years. The rate of depreciation for the purpose of costing in such cases would have to depend more directly on a uniform basis on the life of the assets determined on sound engineering considerations and taking note of estimated residual life. Under the existing arrangements the incidence of depreciation is also not likely to be uniform for the different units for whose products uniform prices are to be fixed. For these reasons we do not consider that the continuance of the *ad hoc* system as in the past is justified.

10.1.8. In so far as the major part of the fixed assets of IISCO and TISCO are newly installed it would be reasonable to consider as adequate a uniform rate of depreciation of 5 per cent. This is the rate which has been adopted by IISCO and HSL units. A flat rate of 5 per cent more or less corresponds to the present rate of 15 per cent for machinery items under the income-tax rules. But this is not to gainsay the fact that the established units have still some old assets which have been kept in use through a process of continuous rehabilitation. Their written down value being negligible, the quantum of depreciation on the diminishing balance method would be very low. Hence an overall rate of 5 per cent would be more than adequate.

10.1.9. As regards standard costs, we are not sure whether Government had in mind the practice of the Iron and Steel Board in the U.K. The following extract from a publication of the Board entitled "What it is and What it Does" indicates the current thinking by the Board on the subject of depreciation and return—

"In the Board's first comprehensive price review in 1954, maximum prices were based on (a) the average cost of production of each product of the more efficient producers, plus (b) a margin for depreciation and obsolescence of plant at replacement cost, plus (c) a margin for profit based on the historical capital employed. But the Board realised that such a price policy might not, on the one hand, reflect quickly enough the possible reduction of costs resulting from new technical developments nor, on the other, offer enough incentive to expansion by providing a reasonable return on new plant at a time of rising costs. After the 1954 review, therefore, the Board began to move towards a price policy geared less to average costs of production and to capital employed at existing works and more to production costs and to capital charges at a completely new plant. In this new approach the Board was influenced by the need for a massive expansion programme to meet rising demand. But average costs, and historical capital, were also losing their validity as a basis for current prices because of the changes that were taking place both in technology and in the value of money. Prices must be sufficient, the Board felt, to make the expansion of iron and steel making capacity justifiable; but they must

also be low enough to discourage the continued use of obsolete plant and encourage modernisation. The new principle called for a new body of information and fresh estimates. The method that has been evolved is this. Something like an ideal plant is created on paper; its capital and operating costs are estimated and technical experts from the industry are asked to criticise. If the experts can show that the Board's assessments are unduly stringent they are modified. Otherwise the layout and size of the plant, and the assessments of capital and operating costs, are assumed to be the most economical obtainable in favourable conditions. The Board then fixes prices to cover the operating costs, and reasonably remunerate the capital cost, of the hypothetical plant. The technical estimates involved must necessarily leave some room for difference of opinion. Nevertheless, it is probable that a more exact knowledge than ever before has been gained in the field of cost economy. This has had the important result that apart from their function in price fixing the estimates of new plant costs are increasingly used by producers themselves as a yardstick in their development projects."

Because of conditions prevailing in our industry it is not possible at present to assess the works cost and the overheads on the basis of such an ideal plant and in any case such an exercise for a closed period like 1960-62 would have little significance. We have, however, considered whether a fair block basis can be reached on the basis of a comparative study of the capital blocks of the existing units. In other words, what cannot easily be established through the deductive method may in our opinion be arrived at inductively.

10.1.10. Further, as regards application of standard cost, while standards or norms can be laid down for purposes like working efficiency, consumption of raw materials, etc., it is almost impossible to lay down any yardstick for writing off the cost of assets. For financial accounting it must get related to its own individual block and life span of its assets. On account of difference in age composition, type or design, source of supply and similar factors, original cost of productive assets employed by different units in the steel industry would never remain at a standard level. The same factors will come in when selecting a new or hypothetical unit as a standard, particularly when India is not manufacturing any steel making machinery. It is however customary to measure the comparative performance of productive units on the basis of capital cost in relation to a unit of output. For this purpose it is possible to envisage an ideal plant whose capital and operating costs can be estimated and determined by the technical experts from the industry and to fix not only the works cost but reasonable capital cost of a hypothetical plant on the basis of its optimum production. But this comparison will hold good only for a given time and will have to vary for each cost period.

10.1.11. If this concept is to be applied it will at present create great disparity within the different steel units in India. Firstly, none of the units in the public or the private sector is yet producing steel up to its optimum rated capacity. Secondly, the capital assets of each of these units have been obtained at very different prices from different

sources. In some respects the production patterns are also not truly comparable, as between units following the open-hearth and the LD process. The composition of the production machinery and its capital cost is also dependent on the nature of the end products. Thus a unit like Rourkela with special machinery for rolling only flat products would necessarily have a higher capital cost. Further, in foreign countries we understand the yardstick of standard block is applied to only those assets that are directly employed in steel making and collieries, raw material sources, colonies and extensive by-product plants are not included. But all our integrated plants have to a large extent to carry these ancillary facilities. Expansion plans have now been sanctioned for the three Government plants to bring them to a more economic level of production. Their original layout and design with higher capital costs had admittedly provided for a lot of built-in capacity for facilitating future expansions. These considerations would apply also to the contemplated expenditure on plant and ancillary facilities and raw material sources so as to increase economy of working in the case of the two private sector plants. All this will make the so called standard block a variable factor.

10.1.12. The concept of a standard block may have thus to be modified for each period of price fixation. The concept gives tacit advantages in cost fixation for an old unit, since in effect the depreciation element gets linked with the latest replacement cost of assets. This is a basis which has not been accepted so far either for fiscal purposes or for price fixation. On the other hand the benefit conceded by a standard element for depreciation if analysed will be found to be the same as if the price of a representative producer were taken. Such a price if it is higher than that of an old or established unit will automatically give it an advantage similar to that calculated on the basis of a standard block. Therefore, in the context of uniform prices the units whose capital block is lower than the representative block will derive a benefit when prices are based on the capital cost of a representative unit. This is a pragmatic approach having its own merits.

10.2. *Standard block :*

10.2.1. In Appendix IX we have given an assessment of the capital block per tonne of ingot and per tonne of saleable steel in the case of TISCO and IISCO and of each of the three units of HSL separately. We have also made an assessment of per tonne capital blocks of TISCO and IISCO after their proposed capital programmes have been completed. In addition we have tried to assess the per tonne block at the end of the approved expansions for the Third Plan period for HSL units. The per tonne block for HSL units at the present level of production of saleable steel is totally unrealistic and even at the end of the next stage of expansion is unlikely to come below Rs. 1900 inclusive of colliery, mines, etc. The per tonne cost for IISCO on the same basis is about Rs. 1000. It has at present the lowest incidence of cost on account of mines, quarries and colonies. Even after the proposed expansion of collieries etc., is completed the per tonne cost will remain in the region of Rs. 1150 per tonne. As against this IISCO has cited International Construction Company that the capital cost of integrated

iron and steel plant of one million tonnes capacity like the Burnpur unit which in 1954 would have cost Rs. 131 crores without township, mines and quarries would on the same basis now cost Rs. 179 crores erected on site. The TISCO block per tonne on the basis of the present cost of the works and its capacity output would be about Rs. 1250 per tonne of saleable steel or Rs. 950 for ingot. Including the proposed additional expenditure which the company proposes to incur in order to produce two million tonne ingots the block per tonne of saleable steel may ultimately go up to Rs. 1560 per tonne on the overall block. But it is also to be remembered that about 25 to 30 per cent of the block of TISCO represents old plant and machinery installed before 1954-55 and only the balance of 70 to 75 per cent is comparable to that of the new plant and machinery of HSL.

10.2.2. For the present price period the representatives of TISCO expressed that a block of Rs. 200 crores including all ancillaries will correspond to the achieved output of 1.285 million ton of saleable steel or 1.60 million ton of ingots. Taking the present plant the block per tonne of saleable steel works out to Rs. 1450 on present output against Rs. 1250 on capacity production. Two points have to be considered in determining the basis for fixing the standard block; whether it should be on the basis of a new plant of comparable size or on that of an existing representative plant. IISCO and the three HSL units are at present of similar size. But apart from other factors because of the built-in facilities for future expansion, the present block of HSL units cannot be compared with that of IISCO. Till the Third Plan expansion is completed or we have more authentic data about costs of a new plant it will be difficult to make a fair assessment for a one million tonne unit on the basis of new plant and machinery. Nor can it be postulated that a one million tonne block should be preferred as a standard to a larger block. The data we have and the information obtained about steel production abroad are also insufficient. Government's suggestion that for the purpose of determining depreciation and return standard costs based on a standard block should be adopted would doubtless avoid erratic fluctuations under these heads for different units. Nevertheless for a short price period like the present one we find that the block of an established producer like TISCO, can furnish a reasonable standard, if suitably adjusted. On the whole we consider that for the present price period a block of Rs. 1300 per tonne of saleable steel should be considered as reasonably representative.

10.3. *Return on capital:*

10.3.1. TISCO has represented that the return to be allowed to the industry on the capital employed basis should be linked with that for a new undertaking as is allowed by the Iron and Steel Board in U.K. It has suggested that the return should be a minimum of 12 per cent of the employed capital which, after payment of taxes at 45 per cent will yield a net return of 6.6 per cent. IISCO has represented that if the previous basis of calculating return on the original cost of the block together with an allowance for interest on working capital is continued, the return should be higher than 8 per cent and the work-

ing capital should be computed at eight months' cost of production instead of six months' as previously and that the rate of interest on working capital should be substantially increased in view of the current high cost of finance. If, however, return is allowed on the capital employed basis IISCO has pointed out that in so far as the fixed capital expenditure content of capital employed is concerned, it might be taken on the actuals for a new unit or on the present day cost of a new and modern plant of similar capacity. In regard to working capital the increase has been asked for on the grounds of enhanced cost of all materials, stores, spares, disproportionately increased volume of stocks following upon the expansion of operations and the large stocks of finished products due to the inability of the railways to provide adequate transport. IISCO further urged that the retention prices should be such as will enable the company to repay its borrowings, to maintain a healthy financial position to provide for the replacement of the plant and machinery at the ever-increasing prices and to build up reserves for future contingencies. IISCO has indicated by way of illustration that on a production of 1.275 million tonnes per year they will require by way of resources from overheads Rs. 27.25 crores from an estimated block of Rs. 200 crores so as to cover depreciation and after meeting bonus, interest and taxes, be able to get a net return of $7\frac{1}{2}$ per cent and still be left with some reserves. The break up indicated is depreciation @ 5 per cent Rs. 10 crores, return @ $7\frac{1}{2}$ per cent totalling Rs. 15 crores to cover interest (Rs. 3.00 crores), bonus (Rs. 1.50 crores) dividends and retained profits (Rs. 7.00 crores), taxes (Rs. 3.50 crores) interest on working capital of Rs. 20 crores @ 5 per cent (Rs. 1.50 crores) and head office and selling expenses (Rs. 1.00 crores).

10.3.2. Right from the beginning the retention prices of steel have been fixed by including therein return to the industry at 8 per cent on the gross block plus interest at one per cent over the bank rate in respect of the estimated working capital. We have carefully considered the request of IISCO to raise the element for working capital to eight months' works cost equivalent. It has indicated that a safe stock would be one month's consumption for coal and iron ore and one and a half to two months for limestone. In so far as the rise in prices of raw materials, stores, spares, etc., is already reflected in the works costs, the contention that following expansion of production there will be disproportionate increase in the value of stock seems untenable. Further, difficulties in movements of raw materials or finished goods which are reflected in occasional accumulation or depletion of stocks is also not a valid contingency for making a general increase in working capital. In any case for the present price period it has not been shown that working capital provided on six months' works cost basis as heretofore is inadequate.

10.3.3. We appreciate that in the case of a vital industry like steel the return on capital should be adequate not only to meet the expenditure normally chargeable to profits like taxes, managing agency commission, bonus to employees, etc., but should also leave a provision for declaration of a reasonable dividend which will maintain the stability to the industry as well as ensure future capital formation.

10.3.4. The present price period is a carry-over of the last five years of development as well as a prelude to one for future stabilisation and expansion of the industry. We recommend that the prices should be fixed allowing a rate of return of 8 per cent on the 'standard or representative block of Rs. 1300 per tonne of saleable steel'. On this basis and with uniform prices for common categories TISCO will have adequate funds for declaring its rate of dividend as in the past two years. With judicious use of the depreciation fund TISCO will have adequate resources not only to meet repayment of loans but also finance some of the capital works which are now necessary for achieving two million tonnes production. On this uniform price basis return to IISCO will be relatively higher putting it in possession of larger resources which ought to be utilised for liquidation of its borrowings and financing of its programme of expansion.

10.3.5. The above recommendation is made after a comparison of the three alternatives available, namely, continuing the method of a return on gross block, the capital employed basis and the standard block concept. Owing to the continued application of the gross block method to the industry the computation of net assets so as to determine capital employed involves certain adjustments. Applying the basis of the capital employed to TISCO, a return of about 10 per cent on the basis of capital employed as usually computed by us would offer more or less the same profit margin as 8 per cent on the standard block, with 5 per cent interest on working capital. For a highly capital intensive industry such a return could by no means be regarded as excessive. In so far as the impact of the present prices on other producers is concerned, IISCO, as stated above, with lower overheads and a better output percentage will in any event earn a higher profit. Whether the return is fixed on the basis of a representative or standard block or on the capital employed basis for TISCO, the prices to be fixed as fair uniform retention price for the industry would still be the same. For HSL units whose production is still only a fraction of their capacity, as already explained, the rate of return fixed on any of the above basis would still not afford a margin of profit for declaring dividends during the price period. At best they will be able to provide depreciation and liquidate arrears on this account during the years immediately following. When their production reaches optimum levels the payment of a moderate dividend may become possible.

11.1. *Preliminary estimates.*—In the preliminary estimates made in October 1960 by the Cost Accounts Branch of the Ministry of Finance to determine provisional prices for 1960-62, the following level of production was assumed for the two main producers :

(In lakh tons)

	IISCO	TISCO
Coke ovens (coke)	12.57	14.50
Hot metal (Iron)	11.70	15.82
Steel Ingots	9.00	16.01
Saleable steel	7.20	12.39

Direct costs were based on the prices of materials and stores ruling in September 1960 and the consumption level for 1959-60 was adopted for purposes of the estimates. Overheads were calculated on the basis of the above estimated outputs. On this basis, provisional retention prices which contained no element for development were calculated. The provisional prices for the common categories yielded an average of Rs. 529 per ton for IISCO and Rs. 518 per ton for TISCO. The weighted average price including non-common categories worked up to Rs. 526 per ton for TISCO. Government fixed the provisional prices for the various categories of steel at an average price of about Rs. 520 per ton or Rs. 512 per tonne subject to any adjustments that might become necessary in the light of our final recommendations.

11.2. The present cost study for TISCO and IISCO was completed in January 1962. The books of accounts of both producers were examined by our Cost Accounts Officer in detail for the latest accounting period, namely, 1st April 1960 to 31st March 1961 and also for the broken period, April-July 1961. As only four months' production cannot be taken as fully representative, the estimates for 1961-62 were prepared by him by incorporating with it the output of the complementary period of eight months in the previous year. To enable us to come to a conclusion whether or not a worthwhile costing may be done for the units of HSL during the period 1960-62 and to determine to what extent the results based on such an examination could be accepted for any modification of retention prices, we deputed our Cost Accounts Officer to conduct a study based on a pattern similar to that traditionally adopted in the case of the established producers. With some difficulty comparable data were collected in the required proforma from HSL units. Since detailed costing was not found possible in respect of Hindustan Steel, we have, as discussed later, not accepted their cost data for modifying in any way the retention prices for the current period 1960-62, which have been determined with reference to the costs of the other two major producers. Copies of the Cost Reports regarding IISCO and TISCO as well as the cost data compiled in respect of HSL are being forwarded to Government separately as confidential enclosures to this Report.

11.3. The actual production of IISCO and TISCO during 1960-61 has been taken into account for assessment of costs. Abnormality in expenses, wherever noticed, has been excluded in order to arrive at fair ex-works costs. The estimates for saleable steel for 1961-62 of 1.3 million tonnes for TISCO and 0.71 million tonnes for IISCO have been based on the trend of production for the first ten months. Actual production at the end of the year has, however, slightly exceeded our estimates and we have not considered it necessary to revise our costs. The costs for 1961-62 have been worked out on the basis adopted for 1960-61 with suitable adjustments for price increases in coal, limestone, railway freight, etc.

11.4. The reasons for the shortfall in production and rise in costs mentioned by the companies including those connected with difficulties caused by production and supply of raw materials and availability of

transport, etc., have been discussed earlier. In so far as the works costs of IISCO for 1960-61 are concerned, higher consumption factors for coal, coke, limestone and the deterioration in quality of raw materials including iron ore have been taken into account in the Cost Report. Production of ingot was 90 per cent of rated capacity and saleable steel 89 per cent. Works costs for 1961-62 have also been made out taking note of cost incidents, increases due to prices as well as wage factors. Production of saleable steel was estimated at 0.71 million tonnes, that is, about 87 per cent of capacity. In the case of TISCO, it was found that the production of ingots and saleable steel achieved in 1960-61 was only 80 per cent and 83 per cent respectively of the installed capacity. Although the deterioration in the quality of raw materials and difficulties in supply on account of transport were similar for both the units, the rise in production costs of TISCO during 1960-62 was higher. As in the case of IISCO direct increase in the cost of raw materials and changes in certain consumption factors of raw materials have been allowed. It was, however, noticed that expenditure on stores was high in the case of mines, coke ovens as well as maintenance and operation of the plant. These related principally to refractories, ingot moulds, spares and parts used in overhauls, rolls and other stores in rolling mills. On this account various adjustments in the works costs of TISCO have become necessary. For cost calculations spelter has been valued at Rs. 1132 per tonne. Excise duty incidence has been based on actual tonnage of ingots rolled. The works costs data were discussed with the companies representatives. IISCO had no special comments. The discussion with TISCO showed that its costs for 1960-61 which had registered a substantial increase over 1959-60, were due to several adverse factors, but the trend was likely to be reversed. In the course of discussion it was found that some expenditure principally on stores and spares incurred during the period 1960-61 in excess of normal for earlier years could be spread over two to four years depending on the nature of the items. We have accordingly had the costs revised and making the necessary adjustments we find that the average works costs of the two producers for the two year period 1960-62 are nearer parity.

11.5. Comparative statements are given below showing in the case of the two producers the build up of works costs of coke, hot metal and steel ingots.

Statement showing the build up of works costs

	IISCO			TISCO		
	1959-60	1960-61	1961-62	1959-60	1960-61	1961-62
<i>A—Coke</i>						
1. Capacity (lakh tonnes)	16.55	16.55	16.55	15.75	15.75	15.75
2. Production (lakh tonnes)	13.65	13.60	13.49	13.34	14.20	14.25
3. Coal per ton coke (Tonnes)	1.433	1.481	1.480	1.476	1.500	1.500
4. Price of coal (Rs./tonne)	27.57	29.80	31.35	30.16	33.85	35.80

	IISCO			TISCO		
	1959-60	1960-61	1961-62	1959-60	1960-61	1961-62
A—Coke—Contd						
5. Cost of Coal for coke (Rs./tonne)	39.48	44.14	46.39	44.52	50.78	53.70
Operating charges (Rs./tonne)	12.45	13.09	13.32	12.75	13.24	13.65
By-product operating charges (Rs./tonne)	2.57	2.54	2.62	3.26	2.64	2.56
Less recovery for by-products (Rs./tonne)	15.02	15.63	15.70	15.24	14.90	15.21
Cost of Coke (Rs./tonne)	39.48	44.14	46.63	45.29	51.76	54.70
B—Hot metal						
Capacity (all grades) (Lakh Tonnes)	12.83	12.83	12.83	19.30	19.30	19.30
Production (all grades) (Lakh tonnes)	10.70	11.61	11.83	15.94	15.88	16.50
Production, (Hot Metal-Basic) (Lakh tonnes)	8.65	9.28	8.83	..	..	..
Cost of Materials (Rs./tonne)	88.78	98.10	102.74	83.11	97.88	101.15
Less Recoveries (Rs./tonne)	6.78	8.35	8.83	9.34	9.40	10.28
Operating costs (Rs./tonne)	20.05	20.26	20.21	18.06	19.07	18.96
TOTAL WORKS COST (Rs./tonne)	102.05	110.01	114.12	91.83	107.55	109.83
C—Steel ingots						
Capacity (lakh tonnes)	10.16	10.16	10.16	20.32	20.32	20.32
Production (lakh tonnes)	8.40	9.14	8.79	15.58	16.25	16.82
Materials (Rs./tonne)	144.82	151.44	153.56	125.35	139.53	145.99
Less Credit for scrap etc. (Rs./tonne)	2.46	1.47	1.52	2.93	3.32	4.16
Operating costs (Rs./tonne)	64.42	59.63	59.85	62.74	62.53	61.60
Excise duty (Rs./tonne)	39.37	39.37	39.37	39.37	39.37	39.37
TOTAL WORKS COST (Rs./tonne)	246.15	248.97	251.26	224.53	238.11	242.80

It will be seen that in the case of TISCO the increases in coke costs are mainly due to higher costs of raising coal, use of more washed coal and more expenditure at washeries. Material costs having gone up, the increase is reflected in the higher works costs of hot metal and ingots in 1961-62. Production, it will be observed, has not reached the same level in the case of the two companies.

11.6. We give below a statement showing the works costs for 1960-61 and 1961-62 for categories of saleable steel for the two producers.

Statement showing works costs of saleable steel

COMPANY		IISCO			TISCO		
YEAR		1960-61	1961-62	1961-62	1960-61	1961-62	1961-62
DETAILS		Production	Works	Production	Production	Works	Production
		(Tonnes)	Cost	(Tonnes)	(Tonnes)	Cost	(Tonnes)
		(Rs./tonne)		(Rs./tonne)	(Rs./tonne)	(Rs./tonne)	(Rs./tonne)
(A) Common Categories:							
1. (a) Blooms .	.	928	279.51	1,700	279.98	4,016	270.32
	.						6,000
	.						268.81
(b) Slabs .	.	487	326.69	..	..	4,994	285.87
	.						4,400
	.						289.80
2. Billets .	.	218,304	305.46	140,000	308.49	252,500	284.24
	.						221,800
	.						286.51
3. Heavy Rails .	.	60,774	346.89	51,000	345.56	85,895	354.83
	.						93,200
	.						351.33
4. Structural .	.	153,166	344.36	190,000	337.61	163,577	373.55
	.						205,500
	.						362.61
5. Heavy Bars .	.	7,970	332.25	10,100	333.85	37,993	351.93
	.						45,000
	.						347.28
6. Light Bars .	.	123,536	331.71	162,000	331.09	157,920	337.41
	.						169,600
	.						323.37
7. Light Rails .	.	7,062	356.25	6,000	352.68	..	..
	.						2,200
	.						482.11
8. Hoe Bars .	.	744	379.14	600	346.12	5,827	294.10
	.						6,000
	.						288.85
9. Black Sheets (10-14 G) .	.	78,017	426.63	68,000	431.29	65,023	458.61
	.						67,500
	.						452.77
10. Black Sheets Dry Pickled	.	1,683	470.52	1,100	477.05	..	..
	.						..
11. G.P. Sheets (Soft) .	.	13,876	533.36	17,000	533.68	11,315	588.13
	.						13,400
	.						573.08
12. G.C. Sheets (Hard)	.	54,933	528.59	61,000	529.44	52,306	577.94
	.						46,000
	.						566.72

13. G.C. Sheets (Soft)	.	.	.	.	555	535.30	1,5000	535.58	3,821	595.67	4,000	583.13
TOTAL (A)	.	.	.	.	722,035	357.55	710,000	361.67	845,187	358.76	884,600	354.51
(B) Non-common categories:												
14. Seamless Blooms	.	.	.	.	..	..	..	..	20,051	332.37	13,700	331.58
15. Tin Bars	.	.	.	.	..	..	..	..	113,269	286.43	112,000	286.12
16. Sleeper Bars	.	.	.	.	..	..	..	..	997	315.62	..	..
17. Skelp Bars	.	.	.	.	..	..	..	..	12,967	293.93	17,900	295.22
18. Plates	.	.	.	.	..	..	..	..	85,327	414.67	77,100	422.56
19. Sleepers Pressed	.	.	.	.	..	..	..	..	4,811	427.74	..	..
20. Skelp	.	.	.	.	..	..	..	..	160,546	333.47	173,000	333.53
21. (a) Wheels (New Design)	.	.	.	.	..	..	..	..	1,230	920.87	4,300	873.83
(b) Wheels (Ordinary)	.	.	.	.	..	..	..	..	12,468	810.04	10,700	757.44
22. (a) Axles (New Design)	.	.	.	.	..	..	..	..	754	1,254.31	1,900	994.58
(b) Axles (Ordinary)	.	.	.	.	..	..	..	..	5,081	624.77	4,800	546.29
TOTAL (B)	.	.	.	.	..	..	..	..	417,501	358.24	415,400	357.55
GRAND TOTAL (A & B)	.	.	.	.	..	..	..	..	1,262,688	358.58	1,300,000	355.48

The weighted average works costs for hot metal, steel ingots and saleable steel for two years, 1960-62 of the two producers would work out as follows :—

	(Rs. per tonne)	
	TISCO	IISCO
1. Hot metal cost	108.71	112.08
2. Steel ingots	240.50	250.09
3. Saleable steel	357.01	359.59

With the inclusion of overheads the costs of TISCO on its individual block basis will become higher, since it has the higher capital block. TISCO has a wider range of products, its non-common categories being about one-third of its output. It has extensive investment in collieries, washeries, ore mines, townships, etc., and in this respect is more on a footing with projects in the public sector whose costs we have not determined separately. TISCO's present block with 90 per cent rated capacity also roughly corresponds to the standard capital block of Rs. 1,300 per tonne. Its overheads would, therefore, be more representative.

11.7. *Overheads.*—The principal items of overheads comprise depreciation, return, interest on working capital, Head Office and selling expenses. The Head Office expenses in the case of both companies had registered substantial increases, the actual expenditure during 1960-61 being Rs. 47.15 lakhs for TISCO and Rs. 47.19 lakhs for IISCO against Rs. 25 lakhs and Rs. 23 lakhs respectively per annum included by us in the retention prices for 1955-56 to 1959-60. Having considered the expenditure rather excessive, we have in our calculations adopted a rate of Rs. 3 per tonne towards head office charges in respect of both companies. For selling expenses Rs. 2 per tonne has been allowed to continue as in the past.

11.8. In the past depreciation was allowed on the old assets at normal income-tax rates, an additional amount was given for Special depreciation and depreciation at 6½ per cent was allowed on all new assets added since March 1952. We have discussed earlier the basis on which the element for depreciation is to be fixed and have come to the conclusion that a flat rate of 5 per cent is adequate and reasonable. On the basis of the standard or representative block of Rs. 1,300 per tonne of saleable steel and the average output of saleable steel for 1960-62, the value of gross block would amount to Rs. 166.57 crores for TISCO and Rs. 93.08 crores for IISCO. We have allowed depreciation at 5 per cent on these amounts of gross block assessed by us in respect of each producer.

11.9. Return on capital was allowed on the previous occasions at 8 per cent on the Companies' gross block and we consider the same rate should continue for the period 1960-1962 also. We have therefore, allowed return at 8 per cent on the gross value of block based on the standard or representative block per tonne of saleable steel at Rs. 1,300 per tonne.

11.10. So far as working capital is concerned, as discussed earlier, we see no reason to raise it to an 'equivalent of eight months' works cost of production as demanded by the producers. We have estimated the working capital requirements at Rs. 22.8 crores for TISCO and Rs. 12.8 crores for IISCO, which corresponds to six months' cost of production. Taking into consideration the rise in the bank rate, however, we are allowing interest at 5 per cent, against $4\frac{1}{2}$ per cent allowed in the past, on the working capital.

11.11. As regards the margin for contingencies for the period 1961-62, after taking note of the increase in actual output achieved during the year, we have allowed Re. 1 per tonne of saleable steel so as to cover any possible increases in the prices of materials etc., during the later part of the year.

11.12. On the basis of the actual profits realised by the companies on the sale of services and other miscellaneous items, we have deducted Rs. 20 lakhs and Rs. 14 lakhs respectively from the total overheads determined by us for TISCO and IISCO.

11.13. Before we proceed to allocate overheads we recapitulate below the incidents of the various items in the case of the two established producers:

	TISCO	IISCO
Net saleable steel after adjustment for works use (million tonnes).	1·260	0·711
	Rs./lakhs	Rs./lakhs
1. Depreciation	833	465
2. Return	1,333	745
3. Interest on working capital	114	64
4. Head Office expenses	38	21
5. Selling expenses	25	14
6. Margin for contingencies	7	4
TOTAL	2,350	1,313
Less misc. recoveries	20	14
NET	2,330	1,299
Average incidence per tonne of saleable steel	184·90	182·70

On the above basis the average retention price per tonne of saleable steel for TISCO will work out as follows :

	Rs.
1. Works cost	357·00
2. Depreciation	66·10
3. Return	105·80
4. Interest on working capital	9·00
5. Head Office expenses	3·00
6. Selling expenses	2·00
7. Margin for contingencies	0·60
	<hr/>
TOTAL	543·50
Less misc. recoveries	1·60
	<hr/>
NET	541·90
	<hr/>
Say	542

11.14. We have discussed in paragraph 9.8 the element that has to be added on account of the payment of interest and principal relating to the special advances. For this purpose we are incorporating an element of Rs. 8 per tonne in the retention prices. In the case of TISCO this will cover instalments for principal grossed up for taxes at Rs. 6 per tonne and interest including arrears of interest at Rs. 2 per tonne. With the inclusion of this special element, the average retention price will amount to Rs. 550 per tonne for TISCO.

11.15. In the steel industry product mix influences the fair costs of all categories of saleable steel. The product mix of TISCO and IISCO are not identical and even for the same producers the product mix might vary from year to year depending on the orders planned by the Iron and Steel Controller. It is essential to assume a certain pattern of production corresponding either to that of IISCO or TISCO and apply the final prices based on the works costs of the selected unit. Accordingly, as equality of prices for common categories is required and not equality of the weighted average price, we have determined prices for common categories based on prices of the selected unit, TISCO.

11.16. *Fair retention prices for steel ingots.*—No separate retention price for this category of steel had been fixed for the main producers until now as they had hardly any ingots for sale. We have, however, been asked to fix a price for ingots on this occasion. The works cost of steel ingots for IISCO and TISCO amounts to Rs. 250.09 per tonne and Rs. 240.50 per tonne respectively inclusive of excise duty at Rs. 39.37 per tonne for the period 1960-62. With the inclusion of

an element for depreciation, return, interest on working capital, Head Office and selling expenses the fair ex-works retention price of steel ingots would work out as shown below. We have determined the standard or representative block for ingot at Rs. 650 per tonne after taking into account the fixed assets upto the stage of its production and calculated depreciation and return at 5 per cent and 8 per cent respectively.

	Rs. per tonne	
	TISCO	IISCO
1. Works cost	240·50	250·00
2. Depreciation	32·50	32·50
3. Return	52·00	52·00
4. Interest on working capital	6·10	6·30
5. Head office expenses, selling expenses etc.	5·00	5·00
TOTAL	336·10	345·80
Say	336	346

Since we have adopted the costs of TISCO for saleable steel we propose to adopt its costs for steel ingots as well. Since TISCO and IISCO have not sold any ingot so far it may be considered that no provision need be made for the special element in the above price towards payment of interest and principal of special advances as in the case of saleable steel. It, however, is a fact that if the units in the private sector did have ingots for sale, the special element would normally have been included as part of the retention price for steel ingots as well. We are of the opinion that the fair retention price of steel ingots should also bear the same element as in the case of other categories of steel. The fair retention price for steel ingot would, therefore, amount to Rs. 344 per tonne inclusive of the special element of Rs. 8 per tonne.

11.17. As regards the retention prices for saleable steel for 1960-62, they have to be uniform for common categories for all producers. Having considered TISCO's costs as representatives for the present price period, we have distributed the overheads as in the past to determine the retention price for each category of saleable steel. In doing so we have taken into account only the net quantity of saleable steel; that is to say, steel consumed in the works for maintenance purposes, namely, 21,344 tonnes has been excluded for this purpose. The net quantity of saleable steel has thus been estimated at 1,260,000 tonnes. It may also be mentioned that as in the past we have allocated Rs. 10 per tonne more in overheads for standard products than for the non-standard products and defectives, the quantity of non-standard products

and defectives being estimated at 27,000 tonnes. The following statement contains the retention prices for common and non-common categories as determined by us :

Statement showing proposed fair ex-Works retention prices

(Rs. per tonne)

	Works Cost	Overheads (including special element of Rs. 8)	Reten- tion Price
<i>Common categories :</i>			
Ingots	241	103	344
Blooms	269	116	385
Slabs	288	116	404
Billets	285	135	420
Hoe Bars*	291	135	426
Rails (Heavy) 24.80/49.60 kg. per metre*	353	188	541
Rails (Light) 14.88 Kg. per metre and below	400	208	608
Structurals	367	188	555
Bars & Rods (Rounds & Squares 80 m. m. and above and Flats over 125 m. m. wide)	326	188	514
Bars & Rods (Rounds & Squares below 80 m. m. and Flats upto & including 125 m.m. wide)	336	198	534
Black Sheets 3·15 m.m. to 2.00 mm.	456	252	708
Galvanized Corrugated Sheets (Hard Iron) 0.630 m.m. (1.830 metre by 3.050 metres)	573	257	830
<i>Non-Common Categories :</i>			
Seamless Blooms	332	188	520
Tin Bars	286	140	426
Sleeper Bars*	316	159	475
Plates 10 m. m. and above	419	188	607
Skelp Bars	295	252	547
Skelps*	334	262	596
Sleepers Pressed*	428	188	616
Wheels.—New Design*	884	275	1,159
Wheels & Tyres —Ordinary*	736	275	1,011
Axles—New Design*	994	275	1,269
Axles—Ordinary*	704	275	979
Hot Rolled Strips or B. P. Sheets in Coils (3·15 m.m. to 2.0 m.m.) . . . . .	..	..	668
Cold Rolled Sheets (3·15 m.m. to 2.0. m.m) . . . . .	..	..	788
Cold Rolled Strips in Coils . . . . .	..	..	748

*Tested quality.

We recommend that the prices given in the above statement be adopted for 1960-62 for the categories mentioned as uniform fair ex-works retention prices. Since the price for spelter has been adopted

at Rs. 1132 per tonne, we recommend that for variations from this rate, necessary adjustments should be made from the Equalisation Fund as at present.

11.18. In fixing the fair ex-works retention prices for some of the categories, e.g., bars and rods over 88 m.m. and below 80 m.m. and wheels and tyres and axles ordinary, we have had to make some adjustments having regard to the distortions found in the works costs of the selected unit. In making these adjustments we have followed the Government directive to keep in mind standard or known differentials. We have also adjusted the cost of light rails, where due to the production being abnormally low the production cost was by no means representative. Similar adjustment was made in the case of axles (new design), where we have accepted the works costs of 1961-62 as the earlier year's production appeared to be experimental.

11.19. Government have suggested that in fixing the common retention prices we should consider the question of reimbursement of any excise duties levied or leviable on ingots on the basis of actuals. The present rate of excise duty is Rs. 39.37 per tonne on steel ingots. As it is levied or becomes leviable at the stage of ingot production we have considered that the excise duty should be included in the works costs for finished steel. The incidence of the excise duty on steel ingots in respect of the saleable steel will vary for different categories and for different producers. It is not practicable to work out precisely the incidence of excise duty category-wise for saleable steel, as in any meticulous calculation, recoveries also will have to be worked out category-wise. The actual incidence to a producer of excise duty paid on steel ingots is reimbursed to him through the price of finished steel. Small variations in the recoveries would be a concomitant in the production process of each producer. We have, therefore, worked out the incidence of excise duties per tonne of saleable steel on the basis of the output of TISCO whose costs are adopted for fixing uniform retention prices. It is possible that the incidence of the excise duty per tonne of saleable steel produced by other units may not quite tally with the incidence which stands included in the uniform retention prices we have recommended. But this is inevitable in any fixation of uniform prices.

11.20. As stated in paragraph 4.8 the producers have urged that as we are not recommending any prices for the future period which will be commencing even before Government can pass orders on our recommendations, we should give some indication for such prices from 1st April 1962 onwards. They also urge that because of the time ordinarily taken for a price investigation there should be some basis for automatic escalation. We wish to bring these requests to the notice of Government for such action as they may consider necessary.

12.1. According to the agreements entered into by Government with TISCO and IISCO, the retention prices for all categories of steel manufactured by them and any other main producer of iron or steel either in the public or private sector should be the same. But as the three works of HSL

are not in full production Government have observed that it might be difficult to cost this unit and we could have to be largely guided by the experience of TISCO and IISCO in regard to works costs. Nevertheless, we thought that some cost examination of this unit should be made in order to assess how far its costs are out of line with those of established producers. Further, Hindustan Steel produces some categories of steel which are not manufactured by TISCO and IISCO and prices have to be fixed for them. Such prices could be determined by applying the standard differentials to the price of base products but we thought that it would be as well to find out their costs of production.

12.2. The Company was asked to submit detailed information on the basis of the proforma on which we obtained replies from TISCO and IISCO. One of our Cost Accounts Officers was deputed to the three plants of HSL to assist the local managements in classifying and tabulating the data in the manner we require and to attempt a costing on the basis of production of the units of HSL for 1960-61 and 1961-62. The company was also asked to furnish its own cost data for each plant for these two years. In addition, we asked for its assessment as to how far its costs would have gone down if the optimum level of production at 90 per cent of the rated capacity had been achieved. The works costs of saleable steel for the three units of HSL for the period 1960-61 and 1961-62 and at the optimum level of output, as furnished by the company, are given in the following statements :—



Production and Works costs of saleable steel of the Hindusthan Steel Ltd.

(Rs. per tonne)

DURGAPUR					ROURKELA					BHILAI									
1960-61					1961-62 (Estimated)					1960-61					1961-62 (Estimated)				
Production (Tonnes)		Works costs		Production (Tonnes)		Works costs		Production (Tonnes)		Works costs		Production (Tonnes)		Works costs					
1	2	3	4	5	6	7	8	9	10	11	12	13							
(A) Common Categories—																			
1. Ingots	..	..	..	..	72,569	310.16	500	274.98	..	..	..	..	..	..	..
2. Blooms	12,125	376.39	548	305.02	..	..	..	..	409	373.05	..	..	..	..	..
3. Slabs	352	375.28	266	304.93	64,284	429.42	22,600	339.43	..	..	..	..	..	..	..
4. Billets	115,569	420.41	304,442	335.62	..	..	..	..	317,862	335.65	299,600	321.	..	..	..	
5. Rails	..	..	8,500	484.00	..	..	..	..	2,531	603.84	120,000	446.04	..	..	..	
6. Structural	425	1667.93	40,332	379.81	..	..	..	..	13,723	577.55	122,500	403.07	..	..	..	
7. Bars & Rods	..	..	30,000	497.19	..	..	..	..	7,919	483.66	62,500	395.99	..	..	..	
Total (A)																			
	128,471	420.26	384,088	356.10	136,953	366.14	23,100	338.03	342,444	350.79	604,600	370.42							

1	2	3	4	5	6	7	8	9	10	11	12	13
(B) Non-Common Categories—												
8. Sleeper Bars . .	2,325	442.14	..	..	..	..	..	..	..	..	..	..
9. Sleepers Pressed .	1,963	706.04	10,000	456.73	..	..	..	..	..	..	..	..
10. Plates/Sheets . .	..	..	..	..	27,070	623.18	90,100	484.35	..	..	..	..
11. Cold Rolled Sheets & Strips.	..	..	..	..	2,112	534.57	170,600	409.97	..	..	..	..
TOTAL (B) .	4,288	562.94	10,000	456.73	29,182	616.77	260,700	435.68	..	..	..	..
GRAND TOTAL (A + B) .	132,759	424.87	394,088	358.65	166,135	410.16	283,800	427.73	342,444	350.79	604,600	370.42

Estimated production and works costs of saleable steel of Hindusthan Steel Ltd., at optimum level of production

(Rs. per tonne)

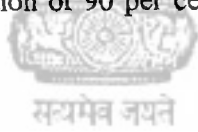
	DURGAPUR		ROURKELA		BHILAI	
	Production (Tonnes)	Works Cost	Production (Tonnes)	Works Cost	Production (Tonnes)	Works Cost
(A) Common Categories—						
1. Blooms	..	..	..	..	..	..
2. Slabs	10,704	308.63	800	244.13	..	..
3. Billets	195,552	332.24	..	..	137,400	314.13
4. Structural	170,760	365.68	..	..	261,000	384.95
5. Rails	20,400	384.47	..	..	180,000	414.06
6. Bars & Rods	223,416	385.93	..	..	117,000	385.76
TOTAL (A)	620,832	362.07	800	244.13	695,400	378.63
(B) Non-Common Categories—						
7. Sleepers Pressed	36,576	466.94	..	..	..	..
8. Fish Plates	8,160	363.12	..	..	..	..
9. Plates/Sheets	..	..	153,000	358.54	..	..
10. Strips	..	..	288,000	309.76	..	..
11. Cold Rolled Sheets	..	..	153,000	428.47	..	..
TOTAL (B)	44,736	448.00	594,000	352.90	..	..
TOTAL (A+B)	665,568	367.85	594,800	352.76	695,400	378.

The weighted average works costs of saleable steel for the period 1960-62, together with those estimated at optimum levels of production in respect of each unit as well as the overall average for HSL are shown below :

	Rs. per tonne	
	1960-62	Optimum level
Durgapur	375.34	367.85
Rourkela	421.24	352.76
Bhilai	363.32	378.63
Overall average	380.16	367.09

For reasons given in subsequent paragraphs of this report we have, however, not been able to make a fair assessment of the normal costs of production for HSL and make use of the above figures for purposes of determining the retention prices for this period. The actual output of saleable steel achieved during the year ended 31st March 1962 has also fallen short of the forecast.

12.3. We have indicated in paragraph 5.4 and Appendix V the capacity, production level achieved and the capital expenditure incurred in the three units of HSL. The statement in paragraph 6.1.3 and Appendix VI give the actual output of coke, hot metal, ingots and various categories of saleable steel in each of the units during 1960-61 and 1961-62. The works costs of each product in respect of the three units of HSL together with those of TISCO and IISCO are given in the statement below. The estimated works costs of HSL units on assumed optimum production of 90 per cent of capacity are also shown in the same statement.



Comparative statement showing works costs of TISCO, IISCO & HSL

(Rs. per tonne)

	DURGAPUR			ROURKELA			BHILAI			TISCO			IISCO		
	Estimate at optimum production			Estimate at optimum production			Estimate at optimum production			Estimate at optimum production			Estimate at optimum production		
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
1. Coke	47.35	39.35	50.80	58.42	55.01	53.34	66.50	61.11	55.58	51.76	54.70	44.14	46.63		
2. Hot Metal—Steel Making Grade	120.14	104.51	112.24	118.42	120.08	104.43	110.20	102.99	97.94	107.55	109.83	110.01	114.12		
3. Steel Ingot—O.H. Grade	311.02	263.19	262.86	332.90	291.06	223.00	273.55	264.68	252.47	238.11	242.80	248.97	251.26		
L.D. Grade	..	..	..	295.12	266.45	206.95	..	..	..	..	..	..	..
4. Rolled Products—															
(i) Blooms	376.39	305.02	304.55	..	..	..	373.55	311.45	300.43	270.32	268.81	279.51	279.98
(ii) Slabs	375.28	304.93	308.63	429.42	339.43	244.13	..	..	..	285.87	289.80	326.69	..
(iii) Billets	420.41	335.62	332.24	..	..	..	335.65	321.45	314.13	284.24	286.51	305.46	308.49
(iv) Rails—Heavy	..	484.00	384.47	..	..	..	603.84	446.04	414.06	354.83	351.33	346.89	345.56
(v) Rails—Light	..	..	..	..	..	..	..	..	..	..	482.11	356.25	352.68
(vi) Structural	1667.93	379.81	365.68	..	..	..	577.55	403.07	384.95	373.55	362.61	344.36	337.61
(vii) Bars and Rods	..	497.19	385.93	..	..	..	483.66	395.99	385.76	351.93	347.28	332.25	333.85
Heavy	..	..	..	..	..	..	..	..	..	..	..	..	..
(viii) Bars and Rods	..	..	..	..	..	..	..	..	..	337.41	323.37	331.71	331.09
Light	..	..	..	..	..	..	..	..	..	..	..	..	..
(ix) Fish Plates	..	..	363.12	..	..	..	..	..	..	..	..	..	..

1	2	3	4	5	6	7	8	9	10	11	12	13	14
(x) Black Sheets/ Strips.	..	..	..	534.57	409.97	309.76	..	..	..	458.61	452.77	426.63	431.29
(xi) Sleeper Bars	442.14	348.08	358.35	..	..	..	..	..	..	315.62	..	..	..
(xli) Sleeper Press- ed	706.04	456.73	466.94	..	..	..	..	..	..	427.74	..	..	..
(xiii) Plates/Sheets	..	..	..	623.18	484.35	358.54	..	..	..	414.67	422.56	..	..
(xiv) P.C.R.C.A. Sheets/ Strips.	..	..	..	..	..	428.47	..	..	..	..	..	..	..

12.4. The fair ex-works price is obtained by adding overheads to the works costs. The main items under 'overheads' are depreciation and return which are related to capital costs. The project estimates of the capital costs of the three steel plants of HSL were Rs. 607.42 crores as indicated in its 1960-61 Report. We have also obtained from the company the tentative estimate of its capital costs after its further expansion schemes are completed. The values of the block per tonne of steel ingot and per tonne of saleable steel have been worked out for each of the three units as well as for HSL as a whole (Appendix IX). This indicates that after the expansion schemes have been completed and optimum production is attained, the capital costs on block for HSL units will be substantially lower than at present. Other overhead elements like selling expenses and Head Office expenses which have been adopted from the experience of established units should, in our mind, prove adequate for HSL.

12.5. It is mainly as regards the disparity in the present works cost as between the units of HSL *inter se* as well as between their costs and those of the established producers in the private sector that some comments are necessary. The cost accounting system at present in vogue in HSL is stated to be based on the uniform cost system designed by the British Iron and Steel Federation suitably adapted for HSL's requirements. But the system is not yet working on a uniform basis in the three works of HSL and this has also been commented upon by the Auditors of the company. This is partially due to historical reasons, namely, the individual units which finally integrated as one company were set up at different times, their machinery came from different sources and were erected and operated with the help of diverse collaborators. At a certain stage they had to follow the Government system of accounting which is based on single entry. But the switch-over to accepted commercial accounting methods and procedure was nearly completed by 1960-61.

12.6. The various units of production at each of the three steel works of HSL were brought into commission on different dates as and when they were ready. In the first year of commissioning of a unit in a steel plant, the costs of production are necessarily high in view of the fact that the output can be stepped up only gradually. Even after trial runs were carried out and the various units commissioned as and when they are ready, the personnel operating them have still to gain experience, observe difficulties in working and remove them before full integrated working can be commenced. Besides dearth of trained and experienced personnel for the operation of the plants there have been failures of some of the sections to function properly, bottlenecks and temporary imbalance in production, storage, handling and distribution, all of which account for higher works cost.

12.7. Some of the specific difficulties which make it inadvisable for us to adopt the cost based on HSL working are indicated below. Due to want of completion certificates the values of assets completed or commissioned have been in some cases taken on an estimated basis

subject to adjustments. This vitiates comparison of capital cost, depreciation, return, etc. Further, it was explained to us that in order to keep the blast furnaces in full production, which began to work earlier than the other units of the steel works, the plants had to manufacture more metal of foundry grades at higher costs varying between Rs. 5 and Rs. 12 per tonne over the cost of metal for steel making. Similarly processed products like coke and steel ingots had to be sold or transferred to other works because the full complement for integrated working of the plants was not established. It was also not possible for HSL to find ready markets for its multifarious by-products as a result of which production in these plants was seriously affected. Similarly due to non-completion of work on the by-products plants certain avoidable wastages took place.

12.8. Incidentally, a divergence in the practice regarding the treatment of the by-product recovery plant of HSL has rendered it necessary to attempt an estimation of costs so as to bring it on a common basis with that for the private sector plants. HSL units are at present extracting various by-products, the costs of which are kept separately and not merged with the coke oven department. The system in vogue in TISCO and IISCO however, is to give credit for the coke oven gas at its coal equivalent value, to debit the entire expenditure on the operation of the by-product plants to the coke oven department and to give credit for the by-products recovered at their marketable values. HSL has contended that in view of the fact that the capital investments on its by-product recovery plant are of a much higher magnitude than those at TISCO or IISCO, this part of its activity should be left out of the scheme of price fixation for iron and steel. The aggregate capital cost of by-product plants and their percentages to the total block of the steel plant is given below in respect of the units of Hindustan Steel as well as TISCO and IISCO.

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(Rs. in crores)

	Bhilai	Durga- pur	Rourke- la	HSL (Total)	TISCO	IISCO
1. Gross block . . .	199.7	198.8	241.3	639.8	189.20	76.60
2. By-product . . .	4.7	9.4	7.4	21.5	3.3	1.2
3. Fertilizer plant . . .	..	..	22.9	22.9	..	..
4. Percentage of 2 to 1 . . .	2.4	4.7	3.1	3.4	1.7	1.6
5. Percentage of 3 to 1 . . .	..	..	9.5	3.6	..	..

It will be seen that the investment is much higher for Hindustan Steel units principally due to the larger varieties of recovery products and the manufacture of fertilizer at Rourkela. The fertilizer plant at Rourkela which will be using hydrogen from coke oven gas and nitrogen from its tonnage oxygen plant, is designed to yield 600,000 tonnes of nitro-limestone fertilizer and is a major capital unit by itself. It has involved heavy capital investments of Rs. 23 crores. Naturally, better price for the fertilizer would result in lowering the cost of production of LD steel. There is force in the contention of HSL that a fertilizer

plant of this size with output bigger than Sindri attached to Rourkela steel plant cannot be treated as a mere by-product plant. As far as the present price period is concerned no decision can be taken as even the construction of the fertilizer plant has not been completed and work was taken in hand during the present price period.

12.9. There were also some matters in which the cost norms for HSL units do not conform to those of established plants. The recovery and proper classification of scrap arising at various stages had not been as efficient as it should be with the result that scrap had to be bought from outside at high prices. Obviously in the initial stages when rolling mills were not fully commissioned, some scrap had to be purchased from outside to keep the melting shops in production. But it seemed to us that the question of availability of melting scrap from rolling mills had not been properly assessed. There has also been heavy consumption of items like ingot moulds, bottom plates, refractories and certain stores and spares. Though production of some of the spares and stores in different works has been started, their costs as well as consumption norms have yet to stabilise. The representative of HSL assured us that efforts are being made to lay down norms for performance or efficiency and in future internal cost control on this basis in HSL units will become more effective.

12.10. For the price period, the actual costs of steel ingots for HSL units were higher, for the reason that the full complement of coke oven batteries, blast furnaces and steel melting furnaces were not in full operation. But there is a hopeful sign that costs would go down in the near future because after the last of the coke ovens and blast furnaces at Durgapur and Rourkela are commissioned, production at these works will go up whereas Bhilai has almost reached the target. In the case of rolling mills which have not been in operation for sufficiently long periods it was not possible for HSL to try out the various sections for want of rolls, lack of orders or due to operational difficulties. The lower output raised the costs of saleable steel during the period. Some of the finishing mills like wheel and tyre and axle plant in Durgapur are still to be commissioned while others like merchant mill at Durgapur and cold rolling and tinning plants at Rourkela have not yet tried out all sections.

12.11. In the case of some of the steel works the service departments are designed and constructed to meet demands in excess of those required by the works itself. Each of the works has facilities built in to cater to the increased needs after expansion. Further at Durgapur and Rourkela it is envisaged to produce granulated blast furnace slag for cement production. To the extent that additional capital expenditure has been incurred, overheads for the current price period are heavy and far in excess of what we are allowing on the basis of a representative block. Nevertheless, since the uniform prices that we have recommended for the two established units included an element for payment of interest on and repayment of the special advances, HSL will have a certain cushion which would partially mitigate its shortfall in return. HSL had a carry forward of Rs. 17.67 crores as arrears of

depreciation on 31st March 1960 and though on the pattern of prices which we are now recommending there will still be a shortfall in the provision for current depreciation for 1960-62, we hope that when production touches the level of installed capacity of 2.31 million tonnes of saleable steel it may be able not only to provide for current depreciation but also to liquidate the arrears and thereafter envisage a moderate dividend.

13.1. *Inadequate rail transport.*—TISCO has submitted that the expansion and alterations in the marshalling yard at Jamshedpur and adjacent Adityapur which was to be completed by S. E. Railway at the same time as its expansion are still not finished. Owing to the irregularity in the arrival of trains carrying raw materials, the difficulties of the bunching of trains within short time of arrival and the extensive marshalling required for despatch of finished goods, are greatly aggravated. The company has urged that it finds itself unable to avoid heavy demurrage for which it feels it is not really responsible. On an average, TISCO has indicated a demurrage bill of about Rs. 150,000 per month from the railways. Linked with the industry's complaint of inadequate supply of wagons for movement of raw materials (iron ore and coal) to their steel works is the problem of inadequate supply of wagons for despatch of finished steel products from the various steel works. From accumulations seen in the steel works of large stocks of railway materials it would appear that they are not supplied with wagons in time, even to remove the products the railways had ordered out. Both TISCO and IISCO have complained of large accumulation of stocks of finished steel at their works resulting in the blocking of funds. The Railway Board while admitting some difficulty about BFR wagons has, stated that there is no dearth of ordinary wagons for transporting finished products and steel plants are actually returning empties which they could have used for back movements of finished products. It has furnished statistical information to show the extent of delays of wagons on an average in the works of certain steel plants and has stated that as despatches from steel works are often quite adequate for full train loads the works should cooperate in helping the movement of wagons in full rakes in the interest of quick turn round. It is not clear how far this is hindered by lack of facilities within the yards of steel units. The producers have pointed out that many of the wagons coming with raw materials were not fit for transporting steel products. Lack of wagons for despatch of steel may not significantly affect the production levels at a steel plant in the same way as lack of transport of raw materials. But when considered from the point of view of capital locked up, the matter is rather serious.

13.2. The last decade has seen more new technological developments in the production of iron and steel than the whole of the first half of the century. Not only are there many new production processes coming forward but the industry (in the more advanced countries) is also showing a much greater readiness to try them. A number of countries suffering from various disadvantages are still able to produce cheaper steel as compared to our industry. For instance, about 65 per

cent of U.K.'s iron ore requirements in 1960 was imported at a price of £ 5-10sh. per ton with 56 per cent Fe content. This corresponds to Rs. 80 per ton of quality comparable to Indian ore and is about four times the price which is paid by our industry. In case of Japan the entire iron ore as well as coal are imported over long distances at higher costs. From a study of the latest prices in U.K. and some of the important steel producing countries in West Europe for certain categories of steel it is noticed that Indian prices for several categories are higher and we are losing the position of being one of the cheapest producers of iron and steel. As observed earlier, the difficulty regarding raw materials mainly that of coal and the industry's low level of production are the most important adverse factors affecting its costs. The most significant developments in the overseas steel industry, however, are towards achieving substantial fuel economy and stepping-up of production. They have achieved this mainly through preparation of blast furnace burden and application of oxygen including pneumatic processes for steel making which do not require external fuel. Our industry should be ready to adopt such techniques and although a beginning has been made in this direction, the pace must be quickened for future.

13.3. We have already pointed out that Government have given the highest priority to steel industry in our Five Year Plans. Our industrial development is dependent on adequate availability of steel at reasonable prices. Steel being a basic commodity any undue increase in its price is bound to have a severe impact on the rest of the economy and generate an inflationary potential in the country. In so far as the Plan Schemes are concerned price increase of steel will have a wider indirect effect on outlay and service costs. Notwithstanding the expansion of the industry since the Second Plan period the steep rises in the prices of steel which have continued particularly since 1954-55 is rather disquieting. This trend ought to be reversed. While we have observed that the rise is partly due to rise in material as well as operating costs for the industry, the envisaged economies of large-scale production by expansion and modernization have not yet been achieved due to output being low. It is for this reason we have even modified the cost of the representative unit. We have nevertheless assumed that the retention price we now recommend will not necessitate wide changes in selling prices which will become applicable after the (1960-62) present price period. Since our prices are on the high side for many categories of saleable steel, further increases will not only cause a burden to industrial and other consumers in India but also frustrate opportunities of creating an export market which will be necessary for stabilization of our industry, and which had been contemplated at the time the steel expansion has been planned.

14. Our conclusions and recommendations may be summarised as under :—
Summary conclusions and recommendations

(i) As against the Third Plan estimate for production of saleable steel in 1961-62 of 3.5 million tons (rising to 6.8 million tons in 1965-66) the production in 1961-62 was 3.17 million tonnes.

[Paragraph 5.1.2.]

(ii) Rapid expansion of existing transport facilities must take place if output of iron and steel is not to lag behind the targets.

[Paragraph 7.1.2.]

(iii) In view of the high priority that the steel industry should receive, the Coal Controller should arrange for a smaller number of suppliers for each steel plant so as to ensure greater homogeneity of coal supplies and the Railways should also agree to some readjustment of regional transport facilities to make this step possible.

[Paragraph 7.2.6.]

(iv) Applications from the main producers of steel for the import of tippers and conveyors for efficient handling of coal wagons at the plant site should be favourably considered by Government.

[Paragraph 7.2.6.]

(v) The sintering of iron ore fines or their use after agglomeration would ensure fuller utilisation of natural resources and reduce costs.

[Paragraph 7.3.3.]

(vi) It is imperative that an industry of national importance like the iron and steel industry established partly at the expense of Government resources must be maintained at a high level of efficiency and it should always strive to reduce its costs.

[Paragraph 8]

(vii) Every unit in the steel industry must strive to achieve at least 90 per cent of its rated capacity.

[Paragraph 9.1.]

(viii) There is urgent need on the part of producers of steel for stricter control over costs of mining in their captive collieries.

[Paragraph 9.2.5.]

(ix) Unless, by economies in the raising and by making full use of ore fines, iron ore costs are reduced, the important natural advantage which our iron and steel industry possesses will be lost and its competitive position will be seriously impaired.

[Paragraph 9.2.6.]

(x) By and large there has been some increase in labour productivity after the expansion of the established units in the iron and steel industry but the output per worker is still far below the average for Western countries even in units where there is no high degree of automation.

[Paragraph 9.2.7.]

(xi) Based on an equated payment spread over a period of 20 years the special element allowed in the retention prices for payment by Tata Iron and Steel Co. Ltd., and Indian Iron and Steel Co. Ltd., of interest on and repayment of the special advances is Rs. 8 per tonne of saleable steel.

[Paragraph 9.8.4.]

(xii) We consider that in the present state of our iron and steel industry an overall rate of 5 per cent as depreciation on the straight line method should be adequate.

[Paragraph 10.1.8.]

(xiii) Because of conditions prevailing in our steel industry it is not possible at present to assess the works cost and the overheads as "standard costs" on the basis of an ideal plant, and in any case such an exercise for a closed period like 1960-62 would have little significance. However, we have made an assessment of fair block on the basis of a comparative study of the capital blocks of the existing units and have considered that for the present price period (1960-62) a block of Rs. 1300 per tonne of saleable steel should be reasonably representative.

[Paragraph 10.2.2.]

(xiv) A return at 8 per cent on the representative block of Rs. 1300 per tonne of saleable steel and interest on estimated working capital at 5 per cent have been allowed.

[Paragraph 10.3.4.]

(xv) The average fair retention price of saleable steel (inclusive of the special element for payment of interest on and repayment of special advances) for 1960-62 is Rs. 550 per tonne.

[Paragraph 11.14.]

(xvi) The fair retention price of steel ingot for 1960-62 is Rs. 344 per tonne inclusive of the special element of Rs. 8 per tonne for payment of interest on and repayment of the special advances.

[Paragraph 11.16.]

(xvii) The retention prices recommended for common and non-common categories of saleable steel for 1960-62 are given in the statement in paragraph 11.17.

[Paragraph 11.17.]

(xviii) Since the rate for spelter has been adopted at Rs. 1132 per tonne for variations from this rate, necessary adjustments should be made from the Equalisation Fund as at present.

[Paragraph 11.17.]

(xix) The incidence of excise duty per tonne of saleable steel has been worked out on the basis of output of TISCO whose costs have been adopted for determining uniform retention prices. This may not tally with the incidence per tonne of saleable steel produced by other units. But this is inevitable in any fixation of uniform prices.

[Paragraph 11.19.]

(xx) The difficulties which made it inadvisable to adopt the costs based on the working of Hindustan Steel Ltd., are explained in paragraphs 12.5 to 12.9.

[Paragraphs 12.5 to 12.9.]

(xxi) Since the uniform prices recommended for the two established units, namely TISCO and IISCO, include an element for payment of interest on and repayment of special advances, they will have a certain cushion for HSL which will partially mitigate its shortfall in return.

[Paragraph 12.11.]

(xxii) Linked with the steel industry's complaint of inadequate supply of wagons for movement of raw materials to their steel works is the problem of inadequate supply of wagons for despatch of finished steel products from the various steel works. Lack of wagons for despatch of steel may not significantly affect the production levels at a steel plant in the same way as lack of transport of raw materials. But when considered from the point of view of capital locked up, the matter is rather serious

[Paragraph 13.1.]

(xxiii) The steel industry in India should be ready to adopt the latest technological developments in vogue in foreign countries. Although a beginning has been made in this direction, the pace must be quickened for future.

[Paragraph 13.2.]

(xxiv) Notwithstanding the expansion of the steel industry since the Second Plan Period the steep rises in the prices of steel which have continued particularly since 1954-55 are rather disquieting. This trend has to be reversed as rise in steel prices may generate an inflationary potential. The retention prices for 1960-62 recommended may not necessitate wide changes in selling prices which will become effective after this price period. Since our prices are on the high side for many categories of steel, further increases will not only cause a burden to industrial and other consumers in India but also frustrate opportunities of creating an export market which will be necessary for stabilisation of our industry, and which had been contemplated at the time the steel expansion was planned.

[Paragraph 13.3.]

15. We wish to acknowledge the cooperation received by us from the representatives of the Tata Iron and Steel Co. Ltd., the Indian Iron and Steel Co. Ltd., and the Hindustan Steel Ltd., in carrying out this inquiry. Our thanks are due to Shri R. N. Dutt, our Technical Consultant for his advice and assistance in connection with this inquiry.

K. R. P. AIYANGAR,
Chairman.

J. N. DUTTA,
Member.

J. N. SEN GUPTA,
Member.

R. BALAKRISHNA,
Member.

PRAMOD SINGH,
Secretary.

BOMBAY ;
Dated 17th April, 1962.



APPENDIX I

(Vide paragraph 1.5)

(1) *Copy of letter No. 63(1)-T.R./61, dated 13th March 1961, from the Government of India, Ministry of Commerce and Industry*

Subject.—FIXATION OF RETENTION PRICES OF STEEL PAYABLE TO THE TATA IRON AND STEEL COMPANY LTD. AND THE INDIAN IRON AND STEEL CO. LTD., FROM 1ST APRIL 1960 TO 31ST MARCH 1962.

In 1955, Government decided that—

- (i) the main producers of steel should be paid a uniform retention price ;
- (ii) the retention price should include an element to enable the financing of the approved expansion programmes ; and
- (iii) the extra profits resulting from this element would be earmarked specifically for development and expansion.

2. The uniform retention prices payable to the Tata Iron and Steel Co. Ltd. (TISCO) and the Indian Iron and Steel Co. Ltd. (IISCO) were enquired into by the Tariff Commission. Government accepted the Tariff Commission's recommendation that average retention price payable to the two major producers should be fixed at Rs. 393 per ton. The price was fixed for a period of five years from 1955-56 to 1959-60. The price included in it an element of Rs. 50 and Rs. 7 per ton for TISCO and IISCO respectively for purposes of development. Government also agreed to examine, on merits, claims for escalations in retention prices resulting from changes in railway freights, changes in statutory prices of coal and other fuel, raw materials, stores or machinery, and changes in labour costs caused by labour legislation or adjudication or conciliation awards. Recently, the scope of the escalator clause has been enlarged to include changes in labour costs caused by negotiated settlements. The basic retention prices fixed in Resolution No. SC(A)-2(149)/55, dated the 1st February, 1956, have been increased under the escalator clause, four times. The average escalated retention price in force on the 31st March, 1960 was Rs. 474.59 per ton including excise duty.

3. The retention prices for the period beginning from 1st April 1960 have now to be fixed. According to the two agreements with the steel companies — agreement, dated the 15th July 1953, between the Government and IISCO and the agreement, dated the 24th May 1954, between the Government and TISCO—whereby Government granted special advances for the modernisation and expansion programmes of the two steel companies the manner of repayment of the special advances is to be—

“If the prices of iron and steel are subject to control, the Government of India shall on the advice of the Tariff Commission, decide what the normal retention prices should be and what special element should be allowed in addition for payment by the Company of interest and repayment of the advance, after deducting taxes in the manner aforesaid.”

The Government of India have already accepted the recommendations of the Tariff Commission in their 1959 Report on the levy of interest on the special advances granted to TISCO and IISCO, which said that—

- (i) Interest on the special advances granted to TISCO and IISCO should be charged at the rate of 5% per annum.
- (ii) Interest on the special advances should be charged to the two Companies as from 1st July 1958 at 5% per annum. The actual recovery of the amounts may, however, be postponed until a decision is taken

regarding the common retention price to all the main producers of iron and steel both in the public and private sectors after 31st March 1960.

- (iii) The calculation of a special element in the normal retention price for steel meeting interest charges on the special advances should be postponed until after 31st March 1960 when it will be necessary to work out the cost of production and fair profit required by the two companies (TISCO and IISCO) along with other producers of steel.

The other main producer of steel is the Hindustan Steel Ltd. The three Works of the Hindustan Steel Ltd. are not in full production. It might therefore be difficult to cost Hindustan Steel Ltd. at this stage. At this juncture, the Tariff Commission might have to be largely guided by the experience of TISCO and IISCO in regard to the Works costs. However, this is a matter which the Tariff Commission will have to investigate further.

Government have already undertaken a preliminary cost examination of TISCO and IISCO by the Cost Accounts Branch of the Ministry of Finance. A copy of the Cost Report and its annexures are attached. Based on this Cost Report, Government have decided to increase the retention prices to an average of about Rs. 520 per ton. This price is purely provisional and subject to adjustments in the light of Government's decision on the recommendations of the Tariff Commission.

4. Government would also recall that according to the two agreements—agreement, dated the 23rd June 1955, between the Government and TISCO and the agreement, dated 30th June 1956, between the Government and IISCO—it has been agreed that the retention prices for all categories of steel manufactured by the two companies and any other producer of iron and steel either in the public or the private sector shall be the same and in respect of such categories solely manufactured by any steel works, it shall be fixed on a comparable basis. The agreements are valid till the 31st March, 1962.

5. Having regard to the various agreements with the Steel Companies, Government would request the Tariff Commission to enquire and recommend—

- (i) what the normal retention prices of steel should be for the period from 1st April 1960 to 31st March 1962; and
- (ii) the special element that should be allowed in the price in addition for payment by the two Companies of interest on and repayment of the special advances.

6. In recommending a common retention price for steel, Government would like to suggest that equality of prices has to mean equality of the prices of common categories and not equality of the weighted average price. The prices of categories produced by some steel works only will have to be fixed in relation to the prices of common categories on the basis of known or standard differentials. It may be necessary to arrive at Works costs of individual categories mainly on the experience of the established steel works. In the case of depreciation and profits, however, which are related to capital costs, there are divergencies not only between the new steel works themselves. Government would suggest the consideration of standard costs.

Government would also like to suggest that in fixing the common retention prices, the Tariff Commission should consider the question of reimbursement of any excise duties levied or leviable on ingots on the basis of actuals.

7. Government would request that the Tariff Commission may enquire into the matter and submit their report as early as possible.

(2) Copy of D.O. letter No. SC(D)-2(88)/60, dated 22nd January 1962, from the Ministry of Steel, Mines and Fuel (Department of Iron and Steel) to the Secretary, Tariff Commission

This is regarding the fixation of retention prices of steel ingots from 1st April 1960 to 31st March 1962. It has been the past practice for the Tariff Commission to recommend fair retention prices for the various categories of saleable steel produced by the main producers. So far, no recommendation has been made regarding the retention prices of steel ingots, presumably because no sales of steel ingots were effected. However, now, some inter-works sales of steel ingots are being made. I shall be grateful if you take up this issue while enquiring into the general question of fixing the fair retention prices for steel during the period 1-4-1960 to 31-3-1962 and recommend along with other categories retention prices for steel ingots also.



APPENDIX II

(Vide paragraph 2.3.)

Statement showing particulars of visits to steel plants by the Commission and Officers

Sl. No.	By whom visited	Name of factory visited	Dates of visit
1.	Shri K. R. P. Aiyangar, Chairman, Shri R. N. Dutt, Technical Consultant and Shri Hari Bhushan, Technical Director (Engineering & Metallurgy).	Indian Iron & Steel Co. Ltd. Hindustan Steel Ltd. (Durgapur) . . . .	. . . . . 12th and 13th October 1961. 14th October 1961.
2.	Shri J. N. Dutta, Shri J. N. Sen Gupta and Dr. R. Balakrishna, Members, and Shri R. N. Dutt.	Hindustan Steel Ltd. (Bhilai) Hindustan Steel Ltd. (Rourkela) . . . .	. . . . . 4th and 5th December 1961. 6th and 7th December 1961.
3.	Shri K. R. P. Aiyangar, Shri J. N. Dutta, Shri J. N. Sen Gupta, Dr. R. Balakrishna and Shri R. N. Dutt.	Tata Iron & Steel Co. Ltd. . . . .	. . . . . 8th, 9th and 10th December 1961.
4.	Shri K. R. P. Aiyangar	Hindustan Steel Ltd. (Rourkela) Barsua Iron Mines of Rourkela plant Hindustan Steel Ltd. (Bhilai) Nandini Lime stone Quarries of Bhilai plant Noamundi Mines of TISCO . . . . .	. . . . . 11th December 1961. 10th December 1961. 12th December 1961. 12th December 1961. 10th December 1961.
5.	Shri K. R. P. Aiyangar, Shri J. N. Dutta, Shri J. N. Sen Gupta and Shri R. N. Dutt.	Hindustan Steel Ltd., (Durgapur) Indian Iron & Steel Co. Ltd. . . . .	. . . . . 13th and 14th December 1961.
6.	Shri J. N. Dutta	Hindustan Steel Ltd. (Bhilai) Hindustan Steel Ltd. (Rourkela) . . . .	. . . . . 15th to 17th November 1961. 18th to 21st November 1961.
7.	Shri Hari Bhushan	Tata Iron & Steel Co. Ltd. . . . .	. . . . . 22nd to 24th November 1961.
8.	Shri P. M. Menon, Cost Accounts Officer	Hindustan Steel Ltd. . . . .	. . . . . 9th October to 4th November 1961.

APPENDIX III

(Vide paragraph 2.5.)

List of persons who attended the discussions

I. 23rd and 24th February, 1962—

- | | |
|-------------------------------------|---|
| 1. Shri Biren Mookerjee | } Representing the Indian Iron and Steel Co. Ltd., 12, Mission Row, Calcutta. |
| 2. Shri F. G. Liversedge | |
| 3. Shri J. McCracken | |
| 4. Shri J. N. Hor | |
| 5. Shri C de B. Griffiths | |
| 6. Shri R. N. Kapur | |
| 7. Shri M. S. Doshi | |

Government Officials :

1. Shri N. Krishnan, Chief Cost Accounts Officer, Ministry of Finance, New Delhi.
2. Shri S. S. Sinha, Deputy Price & Accounts Officer, Office of the Iron & Steel Controller, Calcutta.
3. Shri A. K. Mitra, Deputy Coal Controller, (Production), Office of the Coal Controller, Calcutta.

II. 26th February 1962—

- | | |
|--|---|
| 1. Shri Indarjit Singh, Director (Finance) | } Representing Hindustan Steel Lt., Bihar Secretariat Building, P. O. Hinoo, Ranchi, Bihar State. |
| 2. Shri K. J. Cleetus, Director (Commercial) | |
| 3. Shri D. V. Krishna Rao, Technical Adviser, Rourkela Plant. | |
| 4. Shri K. M. George, Chief Engineer, Central Design Bureau, Rourkela. | |

Government Officials :

1. Shri N. Krishnan, Chief Cost Accounts Officer, Ministry of Finance, New Delhi.
2. Shri C. V. Ramachandran, Price and Accounts Officer, Office of the Iron & Steel Controller, Calcutta.
3. Shri S. S. Sinha, Deputy Price & Accounts Officer, Office of the Iron & Steel Controller, Calcutta.
4. Shri A. K. Mitra, Deputy Coal Controller (Production), Office of the Coal Controller, Calcutta.

III. 27th and 28th February 1962—

1. Shri J. R. D. Tata, Chairman
2. Shri J. D. Choksi, Vice-Chairman
3. Shri J. J. Bhabha, Agent
4. Shri S. K. Nanavati, General, Manager
5. Shri A. H. Sethna, Sales Manager, Calcutta
6. Shri H. D. Katrak, Chief Accountant
7. Shri S. K. Chaudhari, Controller of Accounts, Jamshedpur.
8. Shri S. S. Vaze, Executive Officer
9. Shri S. N. Sircar, Assistant to the General Manager.
10. Shri S. A. Patil, Assistant to the Controller of Accounts.
11. Shri M. D. Gandhi
12. Shri S. R. Subbaraman

Representing Tata Iron & Steel
Co. Ltd., Bombay House,
Bruce Street, Bombay-1.

Government Officials :

1. Shri N. Krishnan, Chief Cost Accounts Officer, Ministry of Finance, New Delhi.
2. Shri A. N. Banerji (only on 28th February 1962), Iron & Steel Controller, Calcutta.
3. Shri C. V. Ramachandran, Price and Accounts Officer, Office of the Iron & Steel Controller, Calcutta.
4. Shri S. S. Sinha, Deputy Price & Accounts Officer, Office of the Iron & Steel Controller, Calcutta.
5. Shri A. K. Mitra, Deputy Coal Controller (Production), Office of the Coal Controller, Calcutta.

IV. 1st March 1962—

1. Shri N. Krishnan, Chief Cost Accounts Officer, Ministry of Finance, New Delhi.
2. Shri A. N. Banerji, Iron & Steel Controller, Calcutta.
3. Shri C. V. Ramachandran, Price and Accounts Officer, Office of the Iron & Steel Controller, Calcutta.
4. Shri S. S. Sinha, Deputy Price & Accounts Officer, Office of the Iron & Steel Controller, Calcutta.
5. Shri A. K. Mitra, Deputy Coal Controller (Production), Office of the Coal Controller, Calcutta.

APPENDIX IV

(Vide paragraph 3.1.)

Brief history of the control of steel prices

1.1. Control over the prices of steel began to be exercised on an informal basis at the out-break of the war in 1939 when Government negotiated with Tata Iron and Steel Co. Ltd., who was then the only integrated producer of steel, for suitable prices of steel supplied for war requirements. TISCO quoted the prices on FOR basis prevailing in September 1939 and Government agreed to pay them for a period of six months from October 1939. Steel Corporation of Bengal, which came into production shortly afterwards, agreed to accept the same prices as were being paid to TISCO. Statutory control on the prices of steel was first imposed by clause 11-B of the Iron and Steel (Control of Production and Distribution) Order, 1941, by which the Iron and Steel Controller was empowered to fix maximum prices for different categories of iron and steel sold by a producer, controlled stock holder and a registered stockist or any other person. We shall first concern ourselves with the prices paid to the producers which are known as "retention prices".

1.2. From 1st July, 1944 control was widened to cover supplies for civilian requirements. At first separate retention prices were fixed for war supplies and for commercial requirements. From 1st April, 1946 a separate price for war supplies was abolished and uniform ex-works retention prices were fixed for the two main producers.

2. The question of fixing retention prices after a careful inquiry and not on an *ad hoc* basis was mooted first by the Iron and Steel (Major Panel 1946) who recommended that an investigation should be undertaken either by the Tariff Board or by some other independent body in order to determine the fair selling prices of iron and steel. The Panel particularly stressed the point that the internal prices of iron and steel should no longer be related to foreign prices but should be based on the local cost of production including a liberal allowance for depreciation and return on investment which would not only maintain the industry in a healthy condition but also attract adequate fresh capital which its expansion would require. At about this time, both Tata Iron and Steel Co. Ltd. and Steel Corporation of Bengal claimed for an increase in retention prices but they were negatived by the Commodity Prices Board in 1947 after a summary examination of the case. On a further representation from them Government referred the case for a revision of the retention price to the Tariff Board in February, 1948.

3. *Tariff Board's Inquiry in 1948-49.*—The Tariff Board made the necessary investigations and submitted its report in February 1949 and recommended different ex-works retention prices to the two companies (Tatas and Steel Corporation of Bengal), since the works costs of the Steel Corporation were higher on account of the higher general works expenses. The Board also suggested a reconstruction of Tatas' share capital and an amalgamation of SCOB and Indian Iron so as to reduce the latter's costs. On the grounds that with separate prices there would be less incentive for increasing efficiency and that the expectation that Government would reimburse all increases in cost might dampen the urge to reduce costs or to keep down increases to the minimum, Government did not agree to differential prices being fixed. However, they considered that the common prices fixed should be such as would enable steel Corporation of Bengal also to earn a reasonable profit on its investments. Retention prices averaging Rs. 252 per ton were fixed by Government from 1st May 1949 and were to remain in force until 30th April 1951. Subsequently the prices for the period from 1st January 1950 to 30th June 1951 were increased by Rs. 11 per ton after cost examination by the Tariff Board.

4. *The 1951 inquiry (second detailed inquiry).*—On a reference from the Government of India the Tariff Board conducted an exhaustive inquiry into the organisation, equipment, manufacturing efficiency and costs of the two producers in 1951 and in a report submitted in May 1951 recommended an increase of Rs. 35 per ton in the retention price to be fixed for a three year period from 1st July 1951. This time Government requested the Board who were given the help of a Technical Adviser, Mr. P. V. Martin of Koppar's Co. Inc. of Pittsburg, U.S.A. to determine to what extent the increase in costs were due to factors beyond the control of the manufacturers and the extent, if any, due to managerial and operational deficiencies. Norms fixed at this period have generally been applied to fixation of price from time to time. In determining overheads the Board followed more or less the same principles as in 1949 except in regard to depreciation. In order to enable the industry to carry out all the replacements and improvements which were considered essential for maintaining plant facilities above the optimum level and to stabilise production within a period of six years as envisaged a special depreciation of about Rs. 100 lakhs to TISCO and Rs. 14.48 lakhs to Steel Corporation of Bengal (over and above the depreciation admissible under income-tax rules) was allowed. The Board stipulated that this extra allowance for depreciation should not be treated as part of profits for the purpose of determining profit-sharing bonus, etc. and that the companies should actually set apart the total amount of depreciation allowed in prices. As regards return, the Board allowed 8 per cent on gross block as in 1949. Government allowed an increase of Rs. 33 per ton to take effect from 1-7-1951 and to remain in force for a period of three years. Shortly afterwards on a representation from SCOB, Government allowed an increase of Rs. 11 per ton to them from 1st January, 1950 on the ground of production being lower than was estimated. This started the practice of separate prices for SCOB and TISCO from 1-1-1950.

5. *1952 inquiry (Third inquiry limited to Steel Corporation of Bengal).*—Subsequently, on representation by SCOB, Government requested the Commission to re-examine whether the prices applicable for 1951 onwards needed any further revision. It recommended and Government allowed revision of retention prices for SCOB which worked out on an average to Rs. 309 as from January-June 1951, Rs. 303 for July-December 1951 and Rs. 319 for 1952.

6. *The 1953 inquiry (Fourth inquiry limited to TISCO).*—In 1952 TISCO made several representations for a review of the retention price fixed for 1951-54 as their costs had increased since the last inquiry on account of various factors including increase in siding charges, freight rates, contributions under the State Insurance Act, Employer's contribution to employee's provident fund and the administrative charges in this connection. These were referred to the Tariff Commission for investigation and for recommendations covering as long a period as possible taking into consideration major changes in the structure of production that may take place as a result of the expansion of the works. The Commission in their report of 29th May 1953 recommended that the rate of return on block should be raised from 8 to 10 per cent for 1953-55 to enable the company to set aside larger amounts to reserves for financing its programme of modernisation and expansion and that greater incentives should be provided for new investments. Departing from the past practice the Commission also treated the Collieries owned and operated by the Company as part of the steel works and allowed for purpose of costing the actual cost of raising coal and depreciation on collieries. In their Resolution dated 20th July 1953 Government did not accept the above two main recommendations of the Commission. This was on the grounds that a special loan on favourable terms in order to enable the Company to implement its modernisation and expansion programme had already been granted and the question of inclusion of collieries required a more comprehensive inquiry (which was subsequently remitted to the Commission in 1954). Government allowed an average increase of Rs. 32 per ton in the retention price for the period April 1952 to March 1953 and Rs. 47 per ton from April 1953 to March 1955. Only for the period 1952-53 did they accept the inclusion of colliery block since a similar treatment had already been accorded to SCOB in view of its contractual agreement with TISCO.

7. Amalgamation of SCOB with IISCO and further price inquiry for IISCO.—On 1st January 1953, SCOB was amalgamated with Indian Iron and Steel Co. (IISCO) by an Act of Parliament following an inquiry by the Tariff Commission on the fair ratio between the ordinary shares of SCOB and IISCO. As no significant change in IISCO's production was expected till the end of 1956, the Commission on a further reference recommended increase in retention prices for the four year period 1st January 1953 to 31st December 1956 by about Rs. 66 per ton. The suggested increase included an element on the gross block of collieries. Government, in their Resolution dated 25th March, 1954 while agreeing that it would ordinarily be desirable to fix prices for as long a period as possible, were of the view that the principles of price fixation followed till then—in particular the method of relating depreciation and return on investment to gross block—themselves required a revision and that revised principles should be applied to the whole industry from the earliest possible date, namely, 1st April 1955, the date up to which the existing principles had already been applied to TISCO. They also considered that the treatment to be accorded to gross colliery block could most appropriately be dealt with at that stage. Government, therefore, announced Rs. 59 per ton increase in IISCO's prices, against the Rs. 66 per ton recommended by the Commission by excluding return on colliery block an allowance for lower production in 1953, and also restricted the effective period for the revised prices from 1st January 1953 to 31st March 1955.

8. Principles of price fixation till 31st March 1955.—The principles of price fixation followed till then are thus summarised in our report of 1955.

"Broadly speaking, fair retention prices were hitherto fixed for each unit separately by taking into account its estimated works costs and overheads for a future period. In calculating overheads, return was allowed at 8% on the appropriate amount of block, depreciation at 6½% on increases in the gross block in addition to normal and special depreciation, interest at 1% over bank rate on the estimated amount of working capital, selling expenses at Rs. 2 per ton and a margin for contingencies at Rs. 5 per ton".

As regards the colliery block, since Government had allowed the actual cost of coal to SCOB in their retention prices for 1952, they subsequently accepted our recommendation in regard to the treatment of collieries owned by Tatas for the year 1952-53 and decided that the question of treatment of collieries owned and operated by steel companies for purposes of computing steel prices in future should be referred to us. This question was, therefore examined in 1954 and we recommended that the colliery block of the steel companies should be treated as an integral part of the steel block. Government then accepted this recommendation as they had under consideration the question of extending assistance for expansion of steel capacity in the country and had agreed in the interim that TISCO's capacity should be expanded by about 500,000 tons of finished steel and that of IISCO by 100,000 tons. Expansion programme as finally approved was, therefore, 2 million tons of steel ingots or 1.5 million tons saleable steel for TISCO and 800,000 tons of saleable steel equivalent to about 1 million tons of ingots for IISCO. Both the producers represented that the retention prices fixed for them should be suitably raised to facilitate the implementation of these additional expansion programmes partly from their internal savings. Government in their Resolution dated 16th May 1955 reviewed the principles of price fixation and decided that the major producers of steel should be paid a uniform retention price of Rs. 385 per ton pending an inquiry by the Tariff Commission. In the same Resolution the Tariff Commission was requested to undertake inquiries and recommend a uniform retention price which should be paid to the major producers having regard to their current and additional expansion programmes and which would enable both producers to obtain a portion of their capital requirements. It was also stipulated that the extra profits made by the two producers would be earmarked specifically for development and expansion and not for any other purpose except with the express permission of the Government.

9. The gradual change of emphasis on the aspects of price fixation for steel should also be mentioned at this stage. As indicated earlier, price control was initiated for war time supplies. It was continued also for commercial supplies, as steel an essential commodity was in short supply. In this context of continuance of protection, the demand for a price probe to safeguard the consumer came up. But as the main problem was the expansion of the industry as more steel output was necessary in the national interest successive price inquiries by us took into account the need for liberal allowance of overheads for depreciation, etc. so as to augment resources for the rehabilitation and modernisation of the plants. With the coming up of planning for this basic industry and the special steps taken by Government to assist the two main producers in the private sector to expand and modernise their plants the emphasis has shifted to the steps necessary to implement these undertakings and to ensure higher production and greater economy for the industry.

10. *Commission's inquiry in 1955 and subsequent developments :*

10.1. Taking into account the terms of the Government Resolution dated 16th May 1955 and the provision of the Agreement dated 23rd June 1955 between Government and Tatas, the Commission considered that retention prices to be paid to TISCO and IISCO from 1st April 1955 should be subject to the following conditions : -

- (1) Prices should be such as would enable both the companies to obtain a portion of the capital requirements on their current and additional expansion programme from internal sources and to raise the balance from outside.
- (2) The retention price for each individual category of steel manufactured by both the companies shall be the same and that of each category manufactured by Tatas alone shall be fixed on a comparable basis.
- (3) Uniform price for common categories shall be fixed on the basis of costs of production of IISCO.

The Commission also felt that fair retention prices fixed on the basis of principles hitherto followed would be inadequate both for TISCO and IISCO. Both the producers, the Commission felt, had to be granted a higher return than the usual 8% on the gross block. At the same time they did not consider it advisable to provide such higher return by again taking the gross block as the basis of calculation. Their approach as given in the Commission's report was as follows:--

"In order that the uniform prices to be fixed may not create difficulties for IISCO whose costs of production are higher, we have first examined IISCO's requirements. We have taken into account the total capital funds required by IISCO and the amount which they may reasonably be expected to raise from outside and have determined on this basis the amount which they should obtain from internal sources. The internal sources consists partly of depreciation and partly of return. We have allowed depreciation at the rate of 6½ per cent. on the additions to the gross block expected to take place year by year, in addition to normal and special depreciation. By deducting this from the required amount of internal resources, we have arrived at the surplus which the Company should obtain in order to be able to finance the excess of its capital expenditure over the sum total of depreciation and the outside capital funds. We have then estimated the Company's works costs and other current charges likely to be incurred by it and so fixed its retention prices as to enable it to earn the necessary surplus after meeting its works costs, other current charges and the liabilities incurred, or to be incurred by it on account of the capital funds obtained from outside. The prices so determined will apply to those categories of steel which are produced by both IISCO and Tatas. A similar analysis of requirements and resources has been made for Tatas in order to determine the level of prices which will enable them to finance a reasonable proportion of their capital expenditure from internal sources. The prices for categories solely produced by Tatas have been determined so as to arrive at the average level of prices considered adequate for them".

10.2. The average retention prices fixed for the five year period was Rs. 393 per ton. For the purpose of determining the amounts to be credited to a separate Development Fund, the Commission calculated notional retention prices by increasing the 1954-55 prices only for cost increases. The difference between these notional retention prices and the effective retention prices was to be credited to the special Development Fund by the two companies. TISCO was to fund Rs. 50 per ton and IISCO Rs. 7 per ton.

10.3. The recommendations of the Commission were accepted by Government by the Commerce and Industry Ministry's Resolution No. SC(A)-2(149)/55, dated 1st February 1956. These have continued to be the basis for prices fixation till the present inquiry.

10.4. The prices recommended above were subject to an escalator clause. Government agreed to examine, on merits claims for escalation in retention prices resulting from changes in railway freights, changes in statutory prices of coal and other fuel, raw materials, stores or machinery, and changes in labour costs caused by labour legislation or adjudication or conciliation awards. Subsequently increases in labour costs caused by negotiated settlements were also brought within the escalator clause. In pursuance of the escalator clause, the retention prices of steel were revised by Government four times, twice in February 1957 and May 1958 on the basis of inquiries conducted by the Commission and twice in November 1959 and November 1960 on examination of the claims of the companies by the Cost Accounts Branch of the Ministry of Finance. These revisions mainly entailed small increases which affected the contribution the producers had to make to the Development Fund. The variations were due to changes in costs as well as output and the levy of the excise duty on ingots. The average retention prices payable to TISCO and IISCO from time to time are given in the following table :

Retention Prices of Steel since 1st May 1949

	(Rs. per ton)	
	TATAS	IISCO
1-5-49 to 31-12-49	252	252
1-1-50 to 31-12-50	263	274
1-1-51 to 30-6-51	263	309
1-7-51 to 31-12-51	296	303
1-1-52 to 31-3-52	298	319
1-4-52 to 31-12-52	328	319
1-1-53 to 31-3-53	328	378
1-4-53 to 31-3-54	343	378
1-4-54 to 31-3-55	343	386
1-4-55 to 15-5-57	428·85	428·85
16-5-57 to 31-3-60	474·59*	474·59*
1-4-60 to 31-3-62 (Provisional)	about 520·00*	520·00*

*Inclusive of excise duty of Rs. 45·74 w.e.f. 16-5-57.

11. Selling prices:

11.1. The selling prices (maximum base prices) and also 'prices extras' for different sections and qualities of controlled categories of steel are fixed by Government from time to time under the provisions of the Iron and Steel Control Orders. The selling prices of steel comprise of three elements (a) ex-works retention prices payable to the producers, (b) surcharge, and (c) railway freight. This build-up since 1-4-55 to 31-3-60 was as follows :—

(Rs. per ton)				
Period	Average retention Price	Average Sur-charge	Average railway freight	Average Selling price
1-4-55 to 30-6-55	428·85	(—)26·11	15·00	417·74
1-7-55 to 30-9-55	428·85	(—)0·02	15·00	443·83
1-10-56 to 10-6-56	428·85	75·60	15·00	519·45
11-6-56 to 15-5-57	428·85	71·52	40·00	540·73
16-5-57 to 31-3-60	474·59	97·78	40·00	612·37

(SOURCE:—Iron and Steel Controller.)

11.2. Selling prices were revised on four occasions during the five year period (1-4-55 to 31-3-60) on 1-7-55, 1-10-55, 11-6-56 and 16-5-57. Subsequently, the selling prices of black sheets and galvanised sheets were increased by Rs. 120 per tonne and Rs. 33 per tonne respectively from 2-2-61 and those of tested billets by Rs. 13 per tonne with effect from 8-4-61.

11.3. Selling prices of steel current up to 10th June 1956 were port prices. The prices of steel consigned to a port was computed by adding to the statutory selling price the extras of the place which meant the rail freight from the nearest port to the station. Place extras were collected by main producers. The freight element of Rs. 15 per ton was adjusted against actual rail freight incurred on despatches of steel. In this scheme steel prices naturally varied according to the distance of the destination from the nearest port. In order to secure uniform benefits to consumers this system was changed with effect from 11th June 1956. This involved extra payment from the Equalisation Fund and for meeting this extra payment, the freight element was raised from Rs. 15 by Rs. 25 per ton. The rail freight average for despatches in TISCO and IISCO and other producers has been much higher than this element of Rs. 40 per ton in recent years necessitating their being reimbursed from the Fund.

11.4. Extras are also added by the Steel Controller to the base prices of different sections of the categories of steel produced. They are determined by the Pricing Committee on quality (tested or untested) or processing costs. In the case of finished and semifinished items of steel differentials based on processing costs take note of a conversion factor i.e., ingot per ton of finished steel and processing time on various machines, loss in course of production.

12. Iron and Steel Equalisation Fund :

12.1. No account of the price control of iron and steel will be complete without a description of the functioning of the Equalisation Fund. The Iron and Steel Equalisation Fund was created from 1st February 1943. The object of

the scheme originally was to ensure that an 'average equalised price was fixed for such part of the main producers' steel as was sold through controlled stockholders, as well as steel sold by re-rollers and all imported steel under Lease-Land Scheme. The average equalised prices were generally higher than the commercial prices of the main producers and the difference between the average equalised price and commercial price was recovered from the main producers and credited to the Equalisation Fund of the Iron and Steel Controller in respect of despatches of steel by main producers. In the case of re-rollers, as the cost of production differed from one re-roller to another, the Fund was debited or credited, as the case may be, with the difference between the average equalised price and the retention prices admissible to each class of re-rollers on the basis of agreed conversion cost in respect of their despatches of steel. From 1st July 1944, statutory prices were fixed for all categories of steel in supersession of the average equalised prices. The difference between this price and the price that main producers/re-rollers were allowed to retain, was credited/debited to the Equalisation Fund. In January 1948, to meet the growing demand for steel, it was decided to sell imported steel at the same price as indigenous steel. To provide funds for this purpose, the sale prices of steel were increased, by increasing the surcharge recoverable from producers. In September 1952, the scope of the Fund was further enlarged. Special advances were sanctioned to Tata Iron and Steel Company Ltd. and Indian Iron and Steel Co. Ltd. for capital outlay. The disbursement of the advance was spread over five years. From 14th November 1953, surcharge was collected on all pig iron sold, with a view to enable the costlier Mysore Pig Iron also to be sold at the same rate as of the other two producers.

12.2. The scope of the Fund was further widened in June 1956 when its resources were, *inter alia*, used for selling iron and steel at uniform prices at all rail heads instead of F.O.R. port basis. The railway freight element which was Rs. 15 per ton F.O.R. port was, therefore, increased with effect from 10th June 1956 Rs. 40 per ton F.O.R. Railhead destination.

12.3. It will be seen that the scope of the Fund as enlarged from time to time, is for the following purposes:

- (i) Subsidising imported iron and steel by paying the difference in price between imported and indigenous steel or meeting incidental charge on steel ingots,
- (ii) Selling billets to re-rollers at a price that will enable them to sell finished products at the statutory selling price,
- (iii) Granting repayable advance to main producers for approved development and expansion schemes, and
- (iv) Fixing of uniform prices for sale of iron and steel at all railheads, reimbursing the producers for equalised freight incidence.

Till 1957-58, the Fund was operated as a Personal Ledger Account of Price and Accounts Officer of Iron and Steel Control, with the Reserve Bank of India, Calcutta. The receipts and payments of the Fund were duly published in the Central (Civil) Appropriation Accounts, and it was, for all practical purposes part of the general revenues. To make clear beyond doubt that the Fund is subject to full Parliamentary control, the transactions of the Equalisation Fund have been with effect from the year 1957-58, brought into the Consolidated Fund of India. The receipts are credited to the Consolidated Fund as revenue receipts and an equal amount transferred to the Equalisation Fund by obtaining the vote of Parliament on the expenditure side. Similarly, expenditure from the Equalisation Fund is first provided for in the relevant Demands but simultaneously shown as recovered from the Fund.

12.4. The statements A and B, below given the position of the Equalisation Fund and freight surcharge for the years 1955-56 to 1961-62. It will be seen from the statement that there is a surplus of Rs. 14.51 crores during 1960-61 and an estimated surplus of Rs. 9.55 crores during 1961-62 which is being credited to the Equalisation Fund. The retention prices payable to producers are fixed on the basis of Tariff Commission's recommendations. The difference between the

sale price and the retention price constitutes the resources of the Equalisation Fund. Surcharge for plates has been raised to Rs. 143 per ton (untested) and Rs. 177 per ton (tested). At present after payment of freight equalisation, the amount of surplus is estimated at less than Rs. 50 per tonne.

12.5. The average freight incurred by the main producers during the period 1st April 1960 to 31st December 1961 worked out to Rs. 53 per ton. The retention price carries an average freight element of Rs. 40 so that the balance of Rs. 13 per ton of steel dispatched is reimbursed to the producer from the Equalisation Fund. It is seen from Statement B that the weighted average for surcharge works out to Rs. 54.50 for the period 1-4-60 to 31-12-61. The arithmetical average of surcharge for all categories in the price schedule is at present Rs. 52 per tonne. The average selling and retention prices may be taken as Rs. 634 and Rs. 582 respectively. The net surcharge available may be Rs. 54.50 less 13 i.e., Rs. 41.50.



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STATEMENT A

Statement showing yearwise opening balance, receipts and expenditure of Iron and steel Equalisation Fund from 1955-56.

(Rs. crores)

	Opening Balance	Receipts	With dra- wals	Closing Balance
1	2	3	4	5
1955-56	13.95	13.47	6.16(1) 1.60(2) 2.94(3) 0.45(4) 0.06(5)	16.21
			11.21	
1956-57	16.21	16.29	5.20(1) 7.87(2) 1.24(3) 0.31(4) 0.07(5)	17.81
			14.69	
1957-58	17.81	10.60	2.81(1) 18.54(2) 2.85(3) 0.34(4) 0.08(5)	3.79
			24.62	
1958-59	3.79	18.76	9.16(2) 5.79(3) 0.40(4) 0.08(5) 0.60(6)	6.52
			16.03	
1959-60	6.52	25.33	1.56(2) 3.95(3) 0.36(4) 0.07(5) 0.30(6)	25.61
			6.24	
1960-61	25.61	31.80	2.58(2) 13.35(3) 1.12(4) 0.24(6)	40.12
			17.29	

1	2	3	4	5
1961-62	40.12	9.49 (Actuals up to Nov. 1961.) 17.11	2.65 (Actuals up to Nov. 1961) 14.10	49.97 (Estimated)
		(Estimates for the rest of the year)	(Estimates for rest of the year)	
		26.60	16.75	

N.B.—(1) Loans to main producers, (2) Subsidy on imported steel (3) Payments to main producers on account of railway freight, increase in retention prices of steel, etc., (4) Payment to re-rollers, controlled stockholders, etc., (5) Establishment charges, (6) Inland charges on steel imported under T. C. Agreements.



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STATEMENT B

Statement showing weighted average surcharge per tonne

Main producers	From 1-4-60 to 31-3-61			From 1-4-61 to 31-12-61		
	Quantity despatched (Tonnes)	Amount of Surcharge (Rs.)	Rate of Surcharge Average (Rs. per tonne.)	Quantity despatched (Tonnes)	Amount of surcharge (Rs.)	Rate of surcharge (Rs. per tonne)
1	2	3	4	5	6	7
1. Tata Iron & Steel Co. Ltd.] . .	11,41,076.805	5,39,87,246.50	47.31	8,50,474.880	4,15,32,387.13	43.83
2. Indian Iron & Steel Co. Ltd. . .	6,86,005.928	3,22,14,685.31	46.95	4,92,766.102	2,88,49,451.60	58.64
3. Bhilai Steel Projects . .	2,78,333.535	2,19,73,283.05	78.95	3,14,585.181	2,06,72,426.80	65.71
4. Rourkela Steel projects . .	10,831.180	14,94,711.63	137.36	19,771.070	27,89,690.23	141.09
5. Durgapur Steel Projects . .	1,10,731.912	74,02,286.55	66.84	2,34,997.346	1,41,59,605.98	60.25
<hr/>						
Average surcharge per tonne on basis of above.	22,27,029.360	11,70,72,213.04	52.56	19,12,594.579	10,80,03,561.74	56.46

N.B.—Rourkela Steel Projects mainly despatches plates and black sheets.
The surcharge for plates per ton is Rs. 143(Untested) and Rs. 177(Tested).

APPENDIX V

(Vide Paragraph 5.4.5)

Statement showing the production capacities of Hindustan Steel Limited

Sl. No.	Items	Annual production capacity		Percentage achievement of capacity	
		As planned (Tonnes)	As per units commissioned till January 1962 (Tonnes)	Based on the final envisaged capacity (Per cent)	Based on units installed till January 1962 (Per cent)
1	Coke ovens	.	.	.	.
2	Blast Furnaces	.	.	.	.
3	Steel Ingots	.	.	.	.
4	Slabs	.	.	.	.
5	Plates	.	.	.	.
6	Hot rolled strips	.	.	.	.
7	Cold rolled strips	.	.	.	.
		1,045,000	1,045,000	80	80
		1,050,000	700,000	41	76
		1,000,000	1,000,000	46	46
		895,000	895,000	42	42
		170,000	170,000	60	60
		586,000	586,000	23	28
		170,000	170,000	24	24

(i) Rourkela

(ii) Billets

1	Coke ovens	.	.	.	.	.	.	1,145,000	1,145,000	102	102
2	Blast Furnaces	.	.	.	.	.	.	1,110,000	1,110,000	99	99
3	Steel Ingots	.	.	.	.	.	.	1,000,000	1,000,000	102	102
4	Blooms	.	.	.	.	.	.	859,000	859,000	91	91
5	Billets	.	.	.	.	.	.	427,000	427,000	102	102
6	Rails and Structural	.	.	.	.	.	.	365,000	365,000	72	72
7	Merchant Mills	.	.	.	.	.	.	265,000	265,000	72	72
(iii) Durgapur											
1	Coke ovens	.	.	.	.	.	.	1,445,400	963,900	76	115
2	Blast Furnaces	.	.	.	.	.	.	1,333,500	889,000	58	87
3	Steel Ingots	.	.	.	.	.	.	1,036,400	971,625	60	64
4	Blooms	.	.	.	.	.	.	960,200	960,200	52	52
5	Billets	.	.	.	.	.	.	472,500	472,500	73	73
6	Sleeper bars	.	.	.	.	.	.	65,000	65,000	66	66
7	Section Mills	.	.	.	.	.	.	293,200	293,200	38	38
8	Merchant Mills	.	.	.	.	.	.	243,800	243,800	32	32
9	Sleeper Plant	.	.	.	.	.	.	61,000	61,000	44	44
10	Wheels and axles	.	.	.	.	.	.	56,900	..	..	..

APPENDIX VI

(Vide paragraph 6.4)

Statement showing category-wise production of saleable steel during the years 1959-60, 1960-61 and 1961-62.

1959-60

(in tonnes)

Sl. No.	Items	TISCO	IISCO	Hindusthan Steel			Total (all units)
				Rourkela	Bhilai	Durgapur	
A—Common Categories							
1	Blooms	6,370	1,892	6,636	71,438	..	86,336
2	Billets	308,780	242,327	..	55,561	..	606,668
3	Hoe Bars	5,270	781	..	..	..	6,051
4	Rails (Heavy)	71,053	57,261	..	..	..	128,314
5	Rails (Light)	..	7,429	..	..	..	7,429
6	Structurals	126,549	158,893	..	..	..	285,442
7	Bars (Heavy)	516,867 128(a)	10,101	..	..	..	27,096
8	Bars (Light)	151,067	45,883	..	..	..	196,950
9	Black Sheets	59,382	76,865	..	..	..	136,247
10	Galvanised Sheets	74,861	71,334	..	..	..	146,195
TOTAL OF COMMON CATEGORIES		820,327	672,766	6,636	126,999	..	133,635
							1,626,728

B.—Non-Common Categories

1	Slabs	.	.	.	.	.	.	.	.	3,690	..	..	..	3,69
2	Tin Bars	.	.	.	.	.	.	.	.	110,154	..	..	..	110,154
3	Plates (Ordinary)	.	.	.	.	.	.	.	.	88,864 } (Acid) 72 }	..	..	..	88,936
4	Wheels and Tyres	.	.	.	.	.	.	.	.	14,680	..	..	..	14,680
5	Axles	.	.	.	.	.	.	.	.	5,655	..	..	..	5,655
6	Sleeper Bars	.	.	.	.	.	.	.	.	1,312	..	..	..	1,312
7	Fishplates for heavy rails	.	.	.	.	.	.	.	.	..	..	..	..	..
8	Fish plates for light rails	.	.	.	.	.	.	.	.	..	..	..	..	..
9	Pressed sleepers	.	.	.	.	.	.	.	.	5,768	..	..	..	5,768
10	Seamless Blooms	.	.	.	.	.	.	.	.	12,352	..	..	..	12,352
11	Slelps bars	.	.	.	.	.	.	.	.	10,670	..	..	..	10,670
12	Skelp	.	.	.	.	.	.	.	.	164,161	..	..	..	164,161

TOTAL OF NON-COMMON CATEGORIES

417,378 417,378

TOTAL OF SALEABLE STEEL

1,237,705 672,766 6,636 126,999 .. 133,635 2,044,106

(a) Sheet and hammer bars.

APPENDIX VI—Contd.

1960-61

(in tonnes)

SL No.	Items	TISCO	IISCO	HSL			Total (All units)
				Rourkela	Bhilai	Durgapur	
A—Common Categories							
1	(a) Blooms	.	4,016	928	409	12,125	12,534
2	(b) Slabs	.	4,994	487	..	352	64,636
3	Billets	.	252,500	218,304	317,862	115,569	433,431
4	Heavy Rails	.	85,895	60,774	2,531	..	2,531
5	Structurals	.	163,577	153,166	13,723	425	14,148
6	Heavy Bars	.	37,993	7,970	7,919	..	7,919
7	Light Bars	.	157,920	123,536	..	..	..
8	Light Rails	.	..	7,062	..	..	..
9	Hoe Bars	.	5,827	744	..	..	..
10	Black Sheets (10-14G)	.	65,023	78,017	2,112	..	2,112
11	Black Sheets (Dry pickled)	.	..	1,683	..	..	..
12	Galvanised Plain sheets (soft)	.	11,315	13,876	..	..	..
13	Galvanised corrugated sheets (Hard)	.	52,306	54,933	..	..	..
14	Galvanised corrugated sheets (Soft)	.	3,821	555	..	..	..
15	Sleeper bars	.	997	..	..	2,325	2,325
16	Plates	.	85,327	..	27,070	..	27,070
17	Pressed Sleepers	.	4,811	..	..	1,963	1,963
TOTAL OF COMMON CATEGORIES		936,322	722,035	93,466	342,444	132,759	568,669
							2,227,086

<i>B—Non-Common Categories.</i>									
17	Seamless Blooms	.	.	.	.	20,051	..	..	20,051
18	Tin Bars	.	.	.	.	113,269	..	..	113,269
19	Skelp Bars	.	.	.	.	12,967	..	..	12,967
20	Skelp	.	.	.	.	160,546	..	..	160,546
21	Wheels & Tyres	.	.	.	.	13,968	..	..	13,968
22	Axles	.	.	.	.	5,835	..	..	5,835
TOTAL OF NON-COMMON CATEGORIES									
						326,366	..	..	326,366
TOTAL SALEABLE STEEL									
						1,262,688	722,035	93,466	342,444
							132,759	568,669	2,553,392

APPENDIX VI—Concld.

1961-62

(in tonnes)

Sl. No.	Items	TISCO	IISCO	HSL			(Total All units)			
				Rourkela	Bhilai	Durgapur				
A.—Common Categories										
1	(a) Blooms	5,811	1,585	..	..	4,635	20,893	32,409
	(b) Slabs	3,995	125	16,258	..	..	..	..
2	Billets	237,579	157,072	..	234,700	277,216	511,916	906,567		
3	Heavy rails	90,084	54,456	}	125,849	3,672	129,521	282,632		
4	Light rails	2,328	6,243		..	..	..	..
5	Structurals	208,355	197,857	..	72,806	22,355(c)	172,550	578,762		
6	Light and medium bars	201,425	52,225	..	77,389(c) } 56,937(c) } 18,920(d) }	33,776(c)	109,633	363,283		
7	Heavy bars	1,375 17,784(a)	8,558 105,617(b)	..	..	..	..	133,334
8	Hoe bars	6,553	515	..	..	..	..	7,068
9	Black sheets	69,250	72,088	..	..	..	..	141,338
10	Galvanised plain sheets	13,198	17,225	..	..	..	..	30,423
11	Galvanised corrugated sheets	51,280	63,404	..	..	..	..	114,684
12	Plates	13,049	..	73,895	..	5,863(e)	79,758	92,807		
TOTAL OF COMMON CATEGORIES				922,066	736,970	90,153	586,601	347,517	1,024,271	2,683,307
B.—Non-Common Categories										
13	Pressed sleepers	15,654	15,654	15,654	
14	Tin bars	106,165	106,165	

15	Skelp bars	.	.	.	.	.	17,287	..	..	..	..	17,287
16	Skelp	.	.	.	.	.	173,340	..	..	..	..	173,340
17	Seamless blooms	.	.	.	.	.	77,388	..	..	..	..	77,388
18	Wheels and tyres	.	.	.	.	.	14,592	..	..	..	..	14,592
19	Axles	.	.	.	.	.	6,779	..	..	..	..	6,779
20	Hot rolled strips	.	.	.	.	.	..	..	53,735	..	53,735	53,735
21	Cold rolled strips	.	.	.	.	.	..	..	15,146	..	15,146	15,146
TOTAL OF NON-COMMON CATEGORIES												
		.	.	.	.	.	395,551	..	68,881	..	15,654	84,535
TOTAL SALEABLE STEEL												
		.	.	.	.	.	1,317,617	736,970	159,034	586,601	363,171	1,108,806

(a) Flat bars. (c) Merchant Mill products.
 (b) Bars from rod mill. (d) Merchant Mill products. Break-up not available.
 (e) Bearing plates.

APPENDIX VII

(Vide Paragraph 7.2.2)

Statement showing annual requirements of coal by the different steel plants and the sources of supply as planned upto the middle of 1963

[SOURCE:— Coal Controller]

Name of Steel Works	Source of supply of coal	Quantity (Million Tons)	Supply of washed coal as percentage of total supply (Per cent)	
TISCO	Jamadoba washery	1.00		
	West Bokaro	0.50		
	Bhojudih	0.80		
	Dishergarh Coal (for blending)	0.10	2.4	96
IISCO	Lodna washery	0.23		
	Bhojudih washery	0.10		
	Dishergarh coal (for blending) Raw coal from Patherdih depot, company's own collieries and Victoria colliery.	0.22		
		1.69	2.24	15
DURGAPUR	Durgapur washery	0.80		
	Barakar (including Victoria coal)	0.65		
	Dishergarh coal (for blending)	0.35	1.80	45
BHILAI	Kargali washery	0.75		
	Dugda washery	0.87		
	Dishergarh coal (for blending)	0.18	1.80	90
ROURKELA	Kargali washery	0.50		
	Dugda washery	0.63		
	Dishergarh coal (for blending)	0.16		
	From raw coal earmarked for Dugda No. 2 washery and extension of Bhojudih washery (which will not come into operation before middle of 1963.)	0.31	1.60	70
TOTAL SUPPLY			9.84	

ALLOCATION OF WASHED COALS

(million tons)

Washery	Owned by	Capacity for washed coal	Allotted to	Remarks
Jamadoba	TISCO	1.00	TISCO	Already in commission.
W. Bokaro	TISCO	0.50	TISCO	Ditto.
Durgapur	Durgapur Steel Plant of HSL	0.80	DURGAPUR	Ditto.
Lodna	Lodna Collieries Ltd. (Turner Morrison & Co.)	0.23	IISCO—0.23 SINDRI—0.07	Ditto. Ditto.
	(capacity)	0.30		
Kargali	NCDC	1.25	BHILAI—0.75	Ditto.
	(rated capacity)	1.60	ROURKELA— 0.50	Ditto.
Dugda No. 1	HSL	1.50	BHILAI—0.87	} Commissioned in December, 1961.
	(rated capacity)	1.80	ROURKELA — 0.63	
Bhojudh	HSL	0.90	TISCO—0.80 IISCO—0.10	} Expected to be commissioned by June 1962
TOTAL		6.18		

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APPENDIX VIII

(Vide paragraph 7.3.1)

Statement showing particulars of supply of iron ore to the steel plants

Name of Steel Plants	Mines from where iron ore supplies are taken	Whether captive	Distance from Works (miles)	Average iron (Fe) content approx. (per cent)	Quantity required (million tons)	Remarks
TISCO	Noamundi Gorumahisani Joda	Yes	78 40 94	65.64 58.24 62.86	2.7	Mechanised mining. Ore fines partly used by sintering plant which however at present working far below capacity.
IISCO	Gua	Yes	220	59.00	1.6	Mechanised. No utilisation of ore fines.
DURGA PUR	Bolani & Others	No	260	60.00	1.7	No utilisation of ore fines.
BHILAI	Rajhara	Yes	55	64.00	1.7	Mechanised. At present some portion obtained through manual operation. Sintering plant working much below capacity.
ROUR-KELA	Barsua	Yes	50	60.00	1.6	Mechanised but small output from mechanised mining. No utilisation of ore fines.
TOTAL					9.3	