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EXCISE DUTIES IN INDIA : 1894-1994

M. M. Sury

The history of modern excise system in India can be traced back to the closing years of the last century when a duty at the rate of 5 per cent ad valorem was imposed in 1894 on cotton yarn of more than twenty counts. This article reviews the evolution of excise taxation in India over the last one hundred years (1894-1994). Post-Independence developments in the excise system form the focus of the study and cover the following aspects: constitutional provisions, growth of excise revenue, extension of commodity coverage, pattern of excise tariff, scheme of concessions and exemptions, and the introduction of MODVAT. The study relies extensively on Central Government budget papers, and reports of commissions/committees/working groups set up by the Government from time to time to examine the Indian tax structure, particularly the excise system.

PRE-INDEPENDENCE DEVELOPMENTS

Prior to 1947, excise taxation in India was selective in terms of commodity coverage and modest from revenue angle. The Indian tax system in general reflected characteristics of a traditional agricultural economy. The domestic requirements for manufactured goods were met mostly by imports, chiefly from Britain, and hence import duties provided the main source of revenue for the Central Government. Import duties were levied on almost all items of imports while major items for export duties included jute, and tea in which India enjoyed near-monopoly in the world market. Excise duties were not important from the revenue angle due to narrow production base of the Indian economy. The relative share of Central excises in total tax revenue of the Government was 4.7 per cent and 4.4 per cent in 1920-21 and 1925-26, respectively. The policy of 'discriminating protection' followed from the mid-twenties did give some impetus to domestic industry and the share of excise revenue increased to 8.8 per cent in 1931-32. On the eve of the outbreak of the Second World War, the contribution of excise revenue was 10.7 per cent (Table 1). The selected commodities on which excise duties were imposed included cotton textiles, salt, motor spirit, and kerosene.

TABLE 1. PRE-INDEPENDENCE TRENDS IN THE RELATIVE SHARE OF EXCISE DUTIES IN TOTAL TAX REVENUE OF THE CENTRAL GOVERNMENT: SELECTED YEARS

(Rs Crore)

Year (1)	Total Tax Revenue (2)	Central Excise Revenue (3)	Col. 3 as per cent of Col. 2 (4)
1920-21	60.85	2.85	4.7
1925-26	72.86	3.21	4.4
1931-32	75.62	6.19	8.2
1938-39	81.37	8.72	10.7

Source: *Report of the Taxation Enquiry Commission*, 1953-54, Vol. II, p. 258, Table 3 (excerpted), Ministry of Finance, Government of India, New Delhi.

Cotton Textiles

Cotton textile mills were first built in India in the 1850s. By 1896 their number had risen to 167 and to 323 by 1923. Following pressure from England, an excise duty of 5 per cent, corresponding to the duty imposed on imported goods, was imposed in 1894 on Indian yarn of counts above twenties. It was in the nature of a countervailing duty on domestic yarn and hence on cloth which competed with imported goods from Lancashire. In 1896, excise duty on yarn was changed into duty on cloth at a reduced rate of 3 1/2 per cent. Simultaneously, import duty was reduced to the same level as the excise duty. The policy of equal duties on imported and domestically produced goods continued until 1917. The period of differential duties commenced from this year, with the raising of the import duty on cloth to 7 1/2 per cent. It was further raised to 11 per cent in 1921. The domestic producers thus enjoyed protection to the extent of 7 1/2 per cent

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on cloth. The Indian Fiscal Commission, 1921-22, examined in detail the question of protection to domestic industries and recommended that the Tariff Board should consider the rate of import duty necessary for the protection of the domestic industry. When a duty was imposed on local production, the import duty should be enhanced by a like amount. Following its recommendations, the Government adopted what came to be called the policy of 'discriminating protection' under which tariff protection was granted to selected industries against foreign competition. The industries which benefited from the policy of discriminating protection included, *inter alia*, iron and steel, cement, textiles, sugar, paper, matches, and jute.

Salt

Excise duty on salt was another important source of revenue for the Government during the pre-Independence days. The commodity was preferred for taxation because of its inelastic demand and also because it was used in small quantities by all strata of society. Even a low rate of duty on this essential commodity yielded some revenue for the exchequer without anybody feeling the pinch. However, the duty was opposed on the ground that it fell on an absolute necessity of life. Since salt was necessary for human existence, the duty on it was in the nature of a poll tax. Even the poorest of the poor were made to contribute to the state exchequer.

The Indian Taxation Enquiry Committee, 1924-25, examined in detail the pros and cons of the salt duty. It opined, 'It may be concluded that, if it is desirable to impose any tax on the mass of the community at all, there is much to be said for the continuance of the salt tax. The present rate of duty is appropriate and causes no serious hardship' [Todhunter Committee, 1924-25, Vol. I, para 168]. Excise duty on salt remained a major source of revenue until Independence. The abolition of salt duty was chosen by Mahatma Gandhi to spearhead his non-cooperation movement against the British rulers. The duty on salt was abolished with the achievement of Independence in 1947.

Petroleum Products

Excise duty at the rate of 6 *annas* (Rs 0.37) per Imperial Gallon (4.55 litres) was imposed on motor spirit in 1917. The purpose of this levy was to restrict consumption of petrol in order to conserve supplies for war needs. Kerosene was another petroleum item placed on the tariff list in 1922. The rate of duty was one *anna* (Rs 0.06) per Imperial Gallon. The duty on motor spirit was mainly a tax on transport while the burden of Kerosene duty fell chiefly on almost all classes of the population. For the next 34 years (i.e., until 1956) there was no addition to the list of petroleum products subject to excise tariff. It may be mentioned here that before Independence, the Indian oil industry was characterized by small-scale, localised oil operations under foreign firms. The Assam Oil Company (a subsidiary of Burmah Oil Company) produced about half a million tonnes of crude oil in Assam. A small refinery of the company at Digboi processed this crude. With Digboi refinery producing about 7 per cent of the total consumption of petroleum products in India, the remainder was imported and marketed by various foreign oil companies operating in India, the chief among them being Burmah Oil and Stanvac.

Tobacco

Taxation of tobacco and tobacco products in India was suggested, for the first time, by the Taxation Enquiry Committee, 1924-25. It observed, 'The absence of any internal taxation on tobacco is a feature which distinguishes the fiscal system of India from that of almost every other civilised country in the world. The considerations which have led in other countries to the selection of tobacco as one of the principal subjects for consumption taxation apply with equal force to India. It is a typical instance of a conventional luxury whose use goes down to the poorest classes, and it is an article the consumption of which can be varied greatly both in quality and quantity according to the means of the consumer' [Todhunter Committee, 1924-25, para 155]. Pursuant to the recommendations of the Committee, the taxation of tobacco was examined

on various occasions, but the administrative difficulties involved in implementing such a levy prevented its imposition. Moreover, taxation of tobacco was a State subject before the enactment of the Government of India Act, 1935. After this enactment, the power to impose tobacco excise was vested in the Central Government.

Excise on unmanufactured tobacco was levied for the first time with effect from April 1, 1943, with a view to mobilising additional resources to meet the requirements of World War II. The levy was imposed under the Tobacco (Excise Duty) Act, 1943 which was subsequently merged in the consolidated Central Excises and Salt Act, 1944. The revenue realised from tobacco in the first year of the excise, *viz*, 1943-44, was Rs 9.65 crore.

The rates of duty levied on unmanufactured tobacco in 1943 were designed on a progressive scale depending upon the intended use of the commodity. In addition to this, a graduated duty on the basis of value slabs was imposed on the higher grades of the manufactured cigars and cheroots. The tobacco tariff was extended in 1948 when an excise duty was imposed on cigarettes on the same pattern as the tariff for cigars and cheroots, namely, value slabs for fixation of rates. Duty on unmanufactured tobacco brought the excise machinery into contact with a large number of growers and licensees and thus led to tariff complexities and administrative difficulties.

Other Products

Excise duty on silver was imposed in 1930. 'It was in 1934 that the first step in the rationalisation of excise levies was made and their coverage extended. Excise duties were imposed mainly as a revenue measure on sugar, matches, steel ingots and mechanical lighters. Sugar and matches production had made rapid strides under heavy protection in the years following the First World War and the stage had been reached when they could be taxed' [Chanda Committee, 1963, p. 4]. Duties were imposed on tyres in 1941 and on vegetable products, and tobacco in 1943, mainly to meet the exigencies of war finances. The year 1944 saw excise duties being imposed on coffee, tea, and betel nuts. Cigarettes came within the excise net in 1948. Prior to 1944, excise duties were levied under separate enactments for different goods. For example, tobacco levies were imposed under the Tobacco (Excise Duty) Act, 1943. About 16 such separate laws were in force till 1944. However, in that year the various enactments were consolidated into the Central Excises and Salt Act and the Central Excise Rules, 1944.

'In the early stages of its evolution, the Indian excise system had a basic purpose and philosophy behind its development. The main objective was either to restrict internal consumption of such commodities whose supply was scarce or to make good the loss of revenue resulting from the shrinkage of revenue from protective custom duties on imports of parallel commodities. The initial imposition of duties on items such as motor spirit and kerosene belonged to the first category, while the subsequent levies on items such as tyres, textiles and cigarettes belonged to the second category' [Lakdawala and Nambiar, 1972, p. 41].

Rules of Excise Taxation

We complete our brief description of the pre-Independence developments in excise system by quoting the five golden rules of excise taxation enunciated by the Indian Fiscal Commission, 1921-22, which with necessary modifications, seem to be relevant to this day. '1. Excise duties should ordinarily be confined to industries which are concentrated in large factories or small areas. 2. They may properly be imposed for the purpose of checking the consumption of injurious articles and especially on luxuries coming under this category. 3. Otherwise they should be imposed for revenue purpose only. 4. While permissible on commodities of general consumption, they should not press too heavily on poorer classes. 5. When an industry requires protection, any further necessary taxation on its products may, if the other conditions are fulfilled, take the form of excise duty *plus* an additional import duty. The latter should fully countervail the former and may be pitched at a higher price' [Rahimatoola, 1921-22, p. 87].

CONSTITUTIONAL PROVISIONS

By virtue of powers vested in it under Entry No. 84 of List I (Union List) of the Seventh Schedule of the Constitution, the Central Government is authorised to impose, 'duties of excise on tobacco and other goods manufactured or produced in India except (a) alcoholic liquors for human consumption; (b) opium, Indian-hemp and other narcotic drugs and narcotics, but including medicinal and toilet preparations containing alcohol or any substance included in sub-paragraph (b) of this entry.' Excise duties on liquor and other narcotics are imposed by the State Governments under provisions of Entry No. 51 of List II (State List) of the Seventh Schedule. Duties of excise on medicinal and toilet preparations containing alcohol are levied by the Centre under Article 268 but they are collected and appropriated by the States within which they are leviable. These are levied by the Centre to ensure uniformity in their rate throughout the country.

In accordance with the provisions of the Constitution, various types of excise duties are imposed by the Union Government under different Acts of Parliament. The important duties which are currently in operation are the following:
1. Basic Excise Duty: Central excise duty is levied under Section 3 of the Central Excises and Salt Act, 1944. The duty levied under this main enactment is commonly known as basic excise duty. The basic excise duty may be fixed with reference to the value, weight, volume, unit, length or area of the excisable goods. These details are given in the Schedule to the Central Excise Tariff Act, 1985.
2. Additional Duties in Lieu of Sales Tax: These duties are imposed under the Additional Duties of Excise (Goods of Special Importance) Act, 1957, which provides for the levy and collection of additional duties on sugar, tobacco, cotton fabrics, rayon or artificial silk fabrics and woollen fabrics produced or manufactured in India. These duties are in addition to the duties payable under the Central Excises and Salt Act, 1944 and replace, by agreement with State Governments, the sales tax levied by them on these commodities. The net proceeds from additional excise duties are distributable among the States in accordance with the principles of distribution formulated and the recommendations made by the Finance Commissions from time to time.
3. Additional Excise Duty (Textiles): This duty is levied under the Additional Duties of Excise (Textiles and Textile Articles) Act, 1978 to finance the controlled cloth scheme.
4. Cesses: These are levied under separate enactments on certain commodities and the revenue is earmarked for specific purposes. For example, handloom cess is levied on fabrics to raise funds for developing *khadi* and other handloom industries and for promoting the sale of *khadi* and other handloom cloth. Cesses are also levied on tea, jute, indigenous crude oil, paper, sugar, *biris*, automobiles, vegetable oils and television sets under various Acts.

The Central Excises and Salt Act, 1944, is the main enactment under which duties are levied on different commodities. Under section 37 of this Act, a set of rules known as the Central Excise Rules, 1944 has been framed to implement the provisions of the Act. Another set of rules under the same section deals exclusively with the valuation of the excisable commodities and is known as Central Excise (Valuation) Rules, 1975. The Act and the Rules are amended from time to time. Broadly speaking, the Act embodies substantive law, and the Rules contain both substantive law and procedural matters.

Although the Central Government is empowered to levy duties on agricultural products also, it has refrained from doing so in view of the administrative difficulties involved. Therefore, the excise system has remained confined mostly to the products of the industrial sector with the notable exceptions of tea and coffee.

Apart from allocating taxation powers, the Constitution provides also for the sharing of certain taxes between the Centre and the States. Excise duties belong to the category of taxes which may be divided between the Centre and the States (Article 272) and the subject matter of this division falls within the purview of the Finance Commission [Article 280(3)(a)]. The sharing of excise duties is permissive and, therefore, the States do not enjoy a constitutional right to claim a share out of the revenues from Central excises. Successive Finance Commissions have taken the view that permissive sharing, contemplated under

Article 272, is not only justified but even necessary in view of the growing financial needs of the States. Therefore, ever since April 1, 1952, the States have been getting a share of the proceeds of the Central excises. The Ninth Finance Commission fixed this share at 45 per cent for the quinquennium 1990-95.

ADMINISTRATION

Central excise duties are assessed and collected through a vast network of offices scattered all over the country. At the apex of this network is the Central Board of Excise and Customs working under the Department of Revenue of the Ministry of Finance, Government of India. Under the Board there are the excise collectorates which, in turn, have under them excise divisions. Each division has excise ranges and each range has excise sectors. Apart from offices directly connected with the excise collection, the Central Board of Excise and Customs has under it a large number of directorates which help in the administration of excise system. Thus, there are the Directorate of Training, the Directorate of Inspection, the Directorate of Audit, the Directorate of Anti-Evasion and the Directorate of Statistics. There are various procedures to assess and collect Central excises.

Physical Control System

Under the physical control method, excise control was exercised by the officers of the excise department who were posted at the factory to keep watch over the operations in the various departments of the factory to prevent illegal disposal of the manufactured articles. The physical control procedure was based on personal verification of production, storage, and clearance of excisable goods.

The manufacturers were, however, unhappy with this direct interference in the manufacturing process. Since Independence they had been demanding abolition of the physical control scheme and its replacement by a system based on audited accounts. The organised sector also pleaded before the Taxation Enquiry Commission, 1953-54 for the abolition of the physical control system. However, the plea was not accepted by the Commission which observed: 'It seems to us reasonable for Government to ensure that for the period intervening between production and clearance the goods should be kept in a proper place and under adequate supervision. The procedure followed in India in this regard is also practically the same as that obtaining elsewhere. Physical supervision is considered to be necessary in such cases in almost every country' [Matthai, 1953-54, Vol. II, p. 323]. The organised sector, however, continued to build up pressure for the replacement of physical control system. Ultimately, the self-removal procedure was introduced with effect from June 1, 1968. A few commodities are still subject to the physical control system including sugar, chewing tobacco, and matches.

Self-Removal Procedure (SRP)

The SRP was introduced from June 1, 1968, whereby an assessee is allowed to take clearances on his own assessment of the duty liability without prior permission of physical checks by excise officers. This procedure is applicable to most of the commodities under the excise net. An assessee is, however, required to get his classification list approved by the excise authorities before effecting any removal. In the classification list, the assessee details the description of the goods produced so that they may be categorised in terms of the rate of duty applicable to them. In case of *ad valorem* duties the assessee is further required to submit a price list showing the prices charged along with discounts and deductions, if any. In essence, the SRP is a record-based system of duty collection relying on mutual trust and belief. Unfortunately, heavy evasion of excise duty has taken place under this scheme. Excise evasion under this liberal scheme is generally resorted to by following such malpractices as incorrect account of the goods, undervaluation, and flouting the conditions subject to which any goods may be exempted from duty. The Central Excise (Self-Removal Procedure) Review Committee, 1973, made extensive studies of this phenomenon, both sector-wise and commodity-wise, but it could not quantify the total magnitude of evasion. 'We have reached the conclusion that

evasion is considerable and, in certain sectors, pervasive. This is an inference we have drawn from the totality of what we have seen, heard and investigated' [Venkatappiah, 1973, p. 65].

Compounded Levy Scheme

The levy of excise duties on the small scale sector remains a major problem of the Indian excise system. This sector accounts for a significant portion of the output of an industry in many cases. It therefore becomes necessary to subject the sector to excise taxation. But the procedures adopted for collection of excise from big firms often become expensive and time-consuming when applied to small firms. This has necessitated the adoption of special procedures suitable for the small sector. Under the compounded levy scheme, introduced in 1954, a lump sum payment is made on the basis of some installations as, for example, the number of looms in case of textile units. Once the compounded levy has been paid, the producer becomes free from all excise formalities except for the maintenance of a record of looms in operation. The scheme is applicable at present to small units producing khandsari sugar, and cotton fabrics produced on power-looms. This system affords considerable advantages to the small producers insofar as they are saved from the cumbersome normal excise procedures and also by the fact that the fiscal burden under compounded levy is generally lower than the burden under normal procedure.

New Tariff Nomenclature

The year 1986 was a landmark in the evolution of excise taxation in India. In that year a new internationally accepted harmonised system of commodity classification was introduced in place of the then existing antiquated system introduced by the British. The history of excise tariff classification dates back to the year 1944 when the Central Excises and Salt Act was passed, consolidating separate enactments for different goods. The Act of 1944 covered 11 tariff items which were arranged in alphabetical order.

In 1960 the tariff items, the number of which had soared to 30, were rearranged in accordance with sections of the Standard International Trade Classification (SITC). By 1986, the excise tariff schedule covered 137 tariff items and, if account is taken of the sub-items, the number was well over 355 main classifications. The description of tariff commodities was based on the definitions of the Indian Standards Institution (ISI), and the descriptions and explanatory notes of the Customs Corporation Council Nomenclature (CCCN). The domestic trade parlance was also relied upon.

However, the evolution of the Central excise tariff over the years was more an exercise in *ad hocism* and administrative exigencies than a definite philosophy and direction. Of particular confusion was the residuary Tariff Item No. 68 which included all goods not elsewhere specified in the excise tariff. Moreover, considerable definitional and overlapping problems existed in respect of other commodities leading to confusion for administrators, harassment to taxpayers, and frequent litigation. Most disputes and litigation arose on account of classifications requiring lower or higher rates of duty. Following the announcement made in the budget speech for the year 1984-85, the Government of India set up a Technical Study Group on Central Excise Tariff on September 22, 1984 whose terms of reference included, *inter alia*, 'To recommend to the Government of India the lines on which the Central Excise Tariff (First Schedule to the Central Excises and Salt Act, 1944) should be revised, with particular reference to (i) the need for simplification and rationalisation of the tariff and assessment procedure with a view to reducing the areas of conflict between the taxpayers and tax collectors; (ii) the facility in collection of data regarding incidence of excise duty for policy formulation; and (iii) the alignment, to the extent possible, with the tariff code of customs and other statistical classifications used by the Government in regard to industrial production, industrial licensing, import licensing, etc.' [Technical Study Group, 1985, p. (ii)].

The Technical Study Group undertook a comprehensive review of the then existing tariff nomenclature. It considered several options for the new nomenclature but finally recommended the adoption of a detailed Central excise tariff

based broadly on the pattern of classification derived from the International Convention on the Harmonised Commodity Description and Coding System. The new excise tariff nomenclature recommended by the Technical Study Group, with some modifications to suit the needs of the Indian excise system, was a synthesis of the Harmonised System Nomenclature (HSN), the then existing excise tariff nomenclature and the understanding in domestic trade parlance. In view of the present stage of growth of the indigenous industry, the Group did not consider it desirable to align completely the present system of excise with HSN.

With the above approach in view, the Group drafted a comprehensive and elaborate tariff nomenclature broadly patterned on HSN, fully corresponding upto 2-digit level (i.e., Chapter level) in respect of 82 of the effective 96 chapters in the HSN.

It also suggested that the new tariff should be provided for by a separate act to be called the Central Excise Tariff Act in place of the then existing system of the tariff being governed by the First Schedule to the Central Excises and Salt Act, 1944.

The recommendation of the Technical Study Group as regards the new tariff nomenclature, claimed to be more scientific and rational, was accepted by the Government of India and a new Central Excise Tariff Act, 1985 was passed for the purpose. The excise tariff based on the internationally accepted harmonised commodity description and coding system came into effect from February 28, 1986, ushering a new era in excise taxation. The Schedule to the Central Excise Tariff Act, 1985, describes the excisable commodities and the rate of duty leviable on them. It is based on internationally accepted nomenclature in the formulation of which all considerations, technical and legal, have been taken into account. The new tariff is spread over 91 chapters and covers around 700 four-digit headings and 1400 six-digit headings. Goods of the same class have been grouped together to enable parity in treatment. Being more detailed and comprehensive, it is helpful in reducing disputes on account of tariff classification. Moreover, it brought considerable alignment between the customs and excise tariffs, facilitating in the process the charging of additional customs duty (countervailing duty) on imports equivalent to excise duty. Tariff based on Harmonised System was already applicable in the case of customs duties vide Customs Tariff Act, 1975. A chapter-wise description of the commodities included in the new tariff nomenclature is given in Appendix I.

REVENUE SIGNIFICANCE

In the post-Independence period, the relative share of excise duties in Central Government's tax collection has increased precipitously. In 1950-51, excise duties accounted for a modest 16.8 per cent in total Central tax collections, Rs 68 crore out of Rs 404 crore. Within a span of 20 years, the proportionate share shot up to 54.9 per cent in 1970-71. It declined to 50.5 per cent in 1975-76 and further down to 49.3 per cent in 1980-81. It is estimated at 39.2 per cent in the 1993-94 budget (Table 2). Though still the largest, beginning with the seventies, the relative contribution of excise revenue has declined. A Government document noted the following reasons for this downward trend: 'The buoyancy of excise has suffered because of a variety of factors including numerous exemptions and concessions which have given rise to substantial administrative and legal complexities. Recent years have witnessed an unprecedented increase in litigation' [*Long Term Fiscal Policy*, 1985, para 4.8].

The trends in customs revenue *vis-a-vis* excise yield are interesting to note. The share of customs duties in Centre's tax collections dropped from 38.9 per cent in 1950-51 to as low as 16.3 per cent in 1970-71. Since then customs revenue has maintained an upward swing, accounting for 18.6 per cent, 25.8 per cent, and 33.2 per cent in 1975-76, 1980-81 and 1985-86, respectively. In the 1993-94 budget, the estimated share is 34.7 per cent (Table 2). The trend may continue in the same direction in view of the changed emphasis from physical to fiscal controls to regulate imports. 'The basic thrust of customs tariff reform will be to place increasing reliance on tariffs to regulate imports and progressively reduce the role of quantitative restrictions in this regard. The

move in this direction should increase revenues, encourage less import-intensive forms of production, moderate the unjustifiably high protection granted by quantitative restrictions to certain industries and reduce the delays and uncertainties associated with the administration of import licensing' [*Long Term Fiscal Policy*, 1985, para 6.24].

TABLE 2. TRENDS IN THE RELATIVE SHARE OF EXCISE DUTIES IN CENTRAL GOVERNMENT TAX COLLECTIONS: SELECTED YEARS

(Rs Crore)

Central Taxes	1950-51	1955-56	1960-61	1965-66	1970-71	1975-76	1980-81	1985-86	1990-91	1993-94 (B.E.)
A + B Total tax collection	404 (100.0)	483 (100.0)	888 (100.0)	2,060 (100.0)	3,206 (100.0)	7,608 (100.0)	13,179 (100.0)	28,671 (100.0)	57,576 (100.0)	89,389 (100.0)
A. Direct Taxes	174 (43.1)	171 (35.4)	290 (32.6)	602 (29.2)	870 (27.1)	2,205 (29.0)	3,004 (22.8)	5,657 (19.7)	11,025 (19.1)	21,261 (23.8)
B. Indirect Taxes of which	229 (56.7)	315 (65.2)	599 (67.5)	1,457 (70.7)	2,337 (72.9)	5,403 (71.0)	10,175 (77.2)	23,014 (80.3)	45,551 (80.9)	68,128 (76.2)
(i) Customs duties	157 (38.9)	166 (34.4)	170 (19.1)	539 (26.2)	524 (16.3)	1,419 (18.6)	3,409 (25.8)	9,526 (33.2)	20,644 (35.8)	31,000 (34.7)
(ii) Union excise duties	68 (16.8)	145 (30.0)	414 (46.6)	898 (43.6)	1,759 (54.9)	3,845 (50.5)	6,500 (49.3)	12,956 (45.2)	24,514 (42.6)	35,000 (39.2)

Figures in parentheses are corresponding percentages of total tax collection.
Source: *Explanatory Memorandum on the Budget of the Central Government*, (various years), *and Receipts Budget*, (various years), Ministry of Finance, Government of India, New Delhi.

Although excise duties are imposed on a large number of commodities, a substantial proportion of revenue is derived from a limited number of items. Table 3 records a list of high revenue yielding commodities defined as those which earned revenue of Rs 500 crore or more each in 1991-92. The 14 high revenue items listed in Table 3 together accounted for Rs 13,581 crore (58.8 per cent) of the total excise yield from basic duties of Rs 23,092 crore from 139 commodities in 1991-92. Five tariff items yielded a revenue of more than Rs 1,000 crore each, viz., cigarettes (Rs 1,638 crore), synthetic filament yarn (Rs 1,630 crore), cement (Rs 1,281 crore), motor spirit (Rs 1,245 crore) and iron and steel (Rs 1,091 crore).

TABLE 3. LIST OF EXCISABLE COMMODITIES WHICH YIELDED REVENUE OF RS 500 CRORE OR MORE EACH IN 1991-92

Sr.No.	Budget Head	Excisable Commodity	Revenue in Descending Order (Rs crore)
1.	27	Cigarettes	1,638
2.	79	Synthetic filament yarn	1,630
3.	31	Cement	1,281
4.	34	Motor spirit	1,245
5.	102	Iron and steel	1,091
6.	119	Miscellaneous machinery	962
7.	62	Tyres and tubes	811
8.	61	Plastics	792
9.	128	Motor cars	779
10.	36	Refined diesel oil	703
11.	125	Unspecified electrical machinery	690
12.	130	Unspecified transport machinery	673
13.	106	Aluminium	653
14.	45	Organic chemicals	633
A. Total of S. No. 1 to 14			13,581
B. Total revenue from basic duties on 139 commodities			23,092
C. A as per cent of B			58.8

Source: Calculated from *Receipt Budget, 1993-94*, Annexure 2, Government of India, New Delhi.

It is noteworthy that many of the high revenue yielding items are commodities of mass consumption and, therefore, the burden of excise duties falls on all sections of society. The main items in the category of mass consumption goods (with revenue in 1991-92 shown in brackets) are: cement (Rs 1,281 crore), tyres and tubes (Rs 811 crore), plastics and articles thereof (Rs 792 crore), and aluminium and articles thereof (Rs 653 crore).

For details of revenue from different types of excise duties from 1950-51 through 1993-94, see Appendix II.

COMMODITY COVERAGE

As already noted, excise taxation in India was fairly selective in terms of commodity coverage during the pre-Independence period. The requirement of resources required for planned economic development after Independence made it necessary to rely on excise taxation for additional funds. This was particularly so in view of the extremely narrow base for direct taxation and the dwindling relative revenue significance of customs duties owing to the euphoria for import restrictions and substitution. The scope for extension of excise coverage improved considerably as development efforts were intensified for the production of industrial goods that enjoyed relatively large and stable domestic market.

The Taxation Enquiry Commission (TEC), 1953-54, after having studied the then existing excise system, made important recommendations in terms of commodity coverage and in fact laid the philosophy of excise taxation for the years to come. It observed, 'The principles underlying the extension of excises from time to time are that indigenous industries which have developed under a protective tariff wall should be called upon to replace the loss of customs revenue on imports and that the country's tax structure can be made stable only by broadbasing the excises' [Matthai, 1953-54, Vol. II, Pp. 257-58]. In pursuance of its philosophy, the TEC recommended the extension of excise coverage to sewing machines, vegetable oils, woollen textiles, biscuits, paper, dry batteries, electric lamps, aerated waters, electric fans, glass and glassware, paints and varnishes, and ceramics. In the opinion of the TEC these industries had developed sufficiently as a result of protection and it was necessary to impose excise duty on them to raise much needed revenue for financing development programmes.

Consequent upon the recommendations of the TEC, an increasing number of commodities were brought under the purview of excise taxation. Cement, footwear, rayon or artificial silk fabrics, and soap were added to the excise system in 1954. In 1955, excise duties were imposed on paints and varnishes, paper, woollen fabrics, electric batteries, electric light bulbs and electric fans. In 1956, the excise net was extended to vegetable non-essential oils, rayon or synthetic fibres and yarn, and motor cars.

With the start of production of diesel oil and other fuel oils at the new refineries in Bombay, excise duty was imposed on a variety of petroleum products for the first time in 1956. These included refined diesel oil, diesel oil and furnace oil. In 1959, excise duties were imposed on asphalt, bitumen and tar. In 1960, eleven additional goods were subjected to excise duties including aluminium, pig iron, silk fabrics and motor vehicles. In 1961, the number of additional products brought under the excise system was sixteen and included, *inter alia*, soda ash, caustic soda, cosmetics and toilet preparations, glass and glassware, copper and copper alloys, etc. In 1962, ten more products including gases, rubber products, plywood, jute manufactures and iron and steel products were covered under the excise net.

In 1968, duties were imposed on radio-parts, steel furniture, leather cloth and chocolates. The biggest expansion was witnessed in 1971 when 25 additional products including linoleum, ready-made garments, vacuum flasks and pressure cookers were brought under the excise net. The process of covering more and more items under the excise system reached its pinnacle when Tariff Item No. 68 was introduced in 1975, encompassing all goods not elsewhere specified in the excise tariff. This residual tariff item was abolished with the introduction of harmonised system of commodity classification introduced from February 28, 1986. The large assortment of commodities under this head got scattered under proper heads in the new nomenclature of excise tariff. Appendix III summarises the extension of

commodity coverage during the post-Independence period.

The Tax Reforms Committee, 1991, identified many items which are currently outside the excise net but which could be considered for the levy of excise duty. Some of the identified items are: butter and cheese, skimmed milk powder, spices, fertilisers, feature films, wood pulp, umbrellas, bicycles, toys and sports goods, and buttons. A complete list of identified items for excise taxation prepared by the Committee is given in Appendix IV. The Committee also recommended imposition of tax on certain selected services, viz., advertising services, services of stock brokers, services of insurance of automobile, residential property, personal effects and jewellery, and residential telephone services [Chelliah, 1991].

PATTERN OF EXCISE TARIFF

Once the commodities for excise taxation are identified, the next step is to formulate tariff structure for various commodities. We now describe the nature of excise tariff and the issues related to its rationalisation.

Statutory versus Effective Rates

Rates of excise duty approved by the Parliament are termed as statutory or tariff rates. However, the Government enjoys the power to exempt, by notification, any excisable goods from the whole or any part of duty leviable on such goods. In exercise of this power the Government determines and notifies from time to time the effective rates of duty. The rationale for granting such powers to the executive is that during the period intervening two consecutive budgets necessary adjustments might be made to regulate exports, consumption and prices of different commodities. However, the delegation of this power to the executive has led to frequent changes in excise rates, creating unsettling atmosphere for trade and industry and also problems for the administration. 'The efficiency of tax administration is reduced by frequent changes in the statutes and notifications. As the officers have to spend considerable time keeping themselves up-to-date with the changes in law, it interferes with their normal duties. Frequent rate changes, or even the expectation of rate changes, tend to have a disruptive influence on the market as well' [Mahler, 1970, p. 107].

Moreover, since the notifications are technically not rules, there is no obligation to place them on the table of the House. Consequently, Parliament does not always have the information on the variations made in the rates approved by it. The determination of the operative or effective rates of duty by executive decisions leads to abridgement of Parliamentary control over the excise system. It is, therefore, preferable that duty changes are discussed and legislated in sessions of Parliament which are held regularly at short intervals. 'In the context of Central excise duties, there is no compelling reason to have a scheme in which, effective rates of duties would be fixed (within the ceiling of the statutory rates sanctioned by the Parliament) by the executive through notification. Nor is there any justification for having exemption notifications, replete with conditions and provisions to benefit or exclude a particular sector of an industry. In the interest of simplification of the Central excise levy and to give it greater stability, the Group would commend a system in which duty changes would be made through legislation rather than exemption notifications issued under the delegated power' [Technical Study Group, 1985, Pp. 76-77].

Under the Central Excise Tariff Act, 1985, passed on the recommendation of the Technical Study Group, the Government is empowered to enhance the rates of duty specified in the Schedule to the Act through notifications. The increase of duty is subject to certain limits and such powers are exercised only in emergent circumstances. The notifications bringing into force such increases are subject to approval by Parliament. The said limits are: (a) in case where the rate of duty immediately before the issue of notification is nil, a rate of duty not exceeding 50 per cent *ad valorem* may be specified, and (b) in any other case, the increase in the rate of duty shall not be more than twice the rate of duty in force immediately before the issue of the notification. A stable excise system is essential to create confidence among the entrepreneurs, particularly the prospective ones, so that they may plan their

investment and production without the Damoclean sword of excise changes hanging over their heads.

Specific Versus Ad Valorem Duties

Excises are levied in specific and/or *ad valorem* forms. A specific or volumetric duty represents a fixed amount of tax on a unit of the physical quantity of the product. This type of duty is generally preferred for commodities, the classifications and sub-classifications of which are not numerous, i.e., the commodity is standardised, for example, sugar. Specific duties are easy to apply and have the political and psychological advantages of obscuring the actual ratio of the tax to the selling price. They are, however, price-neutral, i.e., price changes, if any, in the product do not affect the revenue yield. Specific duties are quality-neutral also unless differential rates are prescribed with reference to the quality of the product.

Ad valorem duties are imposed as a fixed percentage of the price of the product taxed. They are preferred when a commodity has many classifications and sub-classifications, as in the case of textiles. *Ad valorem* duties are responsive to price changes and thus help maintain the proportion of taxes in national income. The main problem in applying *ad valorem* rates is the determination of the tax base, i.e., valuation of production.

There can be many variants of the *ad valorem* and specific forms of excise duties. *Ad valorem* duty may be a simple one, a duty collected as a fixed proportion of the price irrespective of price variations. As a variant of this, the commodity in question may be completely exempted till the price reaches a pre-determined maximum level. In graduated or bracketed *ad valorem* excises, different tax rates apply to different price brackets of a commodity. So long as the price remains within a single bracket, the rate of the tax remains the same. Obviously, commodities in higher price brackets bear a higher tax rate and *vice versa*. As more than one price brackets come into existence, the average tax rate varies.

Specific excises may also be simple or graduated. If a flat amount per unit of a commodity is levied irrespective of the price range, it is a simple specific duty. It may be simple specific with initial exemption. However, if the flat amount per unit changes with price range of the commodity, it becomes a graduated specific duty.

In the early days of the excise system in India, the emphasis was on specific rates due to administrative reasons. However, the emphasis shifted to *ad valorem* rates when the economy started experiencing frequent spells of inflation. The seventies saw a big shift from specific rates of duty to *ad valorem* rates. While introducing the change in the 1969-70 budget the Finance Minister observed, '...*ad valorem* duties are more rational than specific duties whose incidence declines during periods of rising prices and increases when prices fall. *Ad valorem* duties can also act as a spur to reduction in costs and prices' [*Speeches of Union Finance Ministers*, 1984, p. 313]. He converted the then existing specific rates into *ad valorem* rates on cement, vegetable products, electric fans, lighting tubes and bulbs, soaps, soda and sodium silicate. The change of duties on paper and cotton fabrics into an *ad valorem* tax was effected in 1976 and on paints, varnishes, radios and tape recorders in 1977.

However, beginning with the 1980s, the tendency on the part of the Government to shift to *ad valorem* rates was not only halted but reversed in view of an unprecedented spurt in litigation which mainly pertained to disputes over classification and valuation of goods for purposes of excise levies. As a measure to combat tax avoidance and evasion, the basis of duty was changed from *ad valorem* to *ad valorem*-cum-specific rate or specific rate on a number of commodities. Important commodities where the shift took place (with year of change given in brackets) were flat glass, aluminium metal (1982), paper, aerated waters, motor cars, cigarettes, sugar (1983), paper boards, tyres for buses and trucks (1984), gases, tubes and flaps of tyres, and colour television sets (1985).

The Technical Study Group on Central Excise Tariff, 1985, made estimates of relative revenue significance of various forms of excise duty (Table 4). Specific duties account for a much larger share of excise revenue. The share of specific duties (including the specific component

of *ad valorem*-cum-specific duties) was estimated at Rs 8,242.91 crore or 66.7 per cent of the total estimated excise revenue of Rs 12,361.35 crore for the year 1985-86. The rest of the revenue was attributable to *ad valorem* duties. Broadly speaking, specific duties accounted for two-thirds of the revenue and the *ad valorem* duties for the remaining one-third. The balance further tilted in favour of specific duties as the policy of conversion from *ad valorem* rates to specific rates continued right upto 1990-91. 'As a result of this gradual shift to more and more specific rates over the years, the share of revenue from specific rated items has increased from a level of about 46 per cent of the total revenue in 1981-82 to 65 per cent in 1986-87 and has currently (presumably 1990-91) reached a level of about 70 per cent' [Chelliah, 1991, para 9.23].

The shift from *ad valorem* to specific rates was almost forced upon the Government by the manipulative tactics of the industry. The rising costs and prices made it difficult to determine assessable values, resulting in tax evasion and litigation. The Tax Reforms Committee, 1991, examined the advantages and disadvantages of *ad valorem* and specific rates of duty and concluded, 'the advantages of having *ad valorem* duties far outweigh the administrative benefits derived by switching over to specific duties. In a system of comprehensive taxation with a wide coverage of Modvat, it would be necessary to have by and large only *ad valorem* duties in order to ensure a rational system of taxation' [Chelliah, 1991, para 9.28]. Following the recommendations of the Committee, a modest switchover to *ad valorem* rates was made in the 1992-93 budget.

At present, important commodities which bear wholly specific rates of duty are cigarettes, coffee, tea, sugar, beverages, mineral fuels, mineral oils, silk, man-made staple fibres and iron and steel. *Ad valorem* rates of duty predominate for most of the commodities including organic chemicals, pharmaceutical products, leather, footwear, ceramic products, tools and implements, machinery and mechanical appliances, electrical machinery and equipment, and miscellaneous manufactured articles. A few commodities, viz., cotton fabrics, paper and paper boards, are subject to *ad valorem*-cum-specific rates of duty.

TABLE 4. RELATIVE SIGNIFICANCE OF SPECIFIC AND *AD VALOREM* DUTIES IN CENTRAL EXCISE TARIFF

Nature of Duty	Estimated Revenue in 1985-86 (Rs Crore)	Percentage Share in Total Excise Revenue
1. Specific rate	6,095.32	49.3
2. *Ad valorem* rate	3,452.22	27.9
3. Specific-cum-*ad valorem* rate	2,813.81	22.8
i) Specific component	2,147.61	17.4
ii) *Ad valorem* component	666.20	5.4
	12,361.35	100.00

Notes: 1. The revenue is inclusive of cesses. 2. The revenue from cigarettes is included in specific rated goods.
Source: *The Report of the Technical Study Group on Central Excise Tariff Part I*, 1985, Table 6, p. 7, Ministry of Finance, Government of India, New Delhi.

Multiplicity of Excise Tariff

Excise taxation in India is an interesting example of multitude of rates which are subject to frequent revisions. Numerous considerations have contributed to the existing complexity of excise rates. The rate structure is provided by the Schedule to the Central Excise Tariff Act, 1985, which includes goods ranging from toys to nuclear reactors. The Schedule is divided into 20 sections covering 96 chapters. Goods falling under each chapter are divided and sub-divided into numerous headings and sub-headings. The statutory rate of duty applicable in respect of each item is shown against the appropriate commodity heading/sub-heading. These statutory rates are modified, in most cases, by Government notifications to determine effective rates of duty. The

labyrinthine intricacy of the tariff often leads to confusion and litigation amongst the taxpayers and revenue authorities.

Commodities such as sewing machines, water coolers and bicycles, though on the tariff list, are completely exempt from the payment of duty. However, a host of other commodities bear a wide amplitude of excise rates. The rate of duty on necessities of life like food products (cheese, butter, vegetable oils), pharmaceutical products, and footwear ranges from 10 to 15 per cent *ad valorem*. *Ad valorem* rates of excise duty on semi-luxuries like washing machines, tape recorders, refrigerators and colour televisions range from 25 per cent to 40 per cent. Luxury items like cosmetics and air-conditioners bear a high rate of duty ranging from 100 to 110 per cent.

Most capital goods are presently classified under chapter 84 of excise tariff. Some important items under this category are machine tools, cranes, agricultural machinery, textile machinery, printing machinery, calculating machines, automatic data processing machines and other office machines. The rate of duty on these items ranges from 15 to 20 per cent *ad valorem*.

Tobacco items are conspicuous for the very high rates of duty imposed on them. Excise duty on cigarettes is determined by the length of the sticks. Cigarettes of size beyond 100 mm length pay the highest duty of Rs 700 per thousand cigarettes. Successive upward revision of excise duty on cigarettes has all along remained a notable feature of tobacco tariff in India. Upward revision of excise duty on cigarettes was an annual feature between 1971-72 and 1979-80 excepting for the year 1978-79. It is not surprising that the commodity earned such nicknames as *annual hardy, old faithful*, etc.

Broadly speaking, necessities of life are either exempt or bear a low rate of duty, semi-luxuries are moderately taxed, and luxuries and tobacco products stand out distinctly as high-rated tariff items. Capital goods are subject to a relatively low rate of duty.

In 1968, the Government of India appointed Mr. S. Bhoothalingam to examine the structure of direct and indirect taxes in India. In his report he recommended, *inter alia*, a general excise duty at the rate of 10 per cent *ad valorem* on all manufactured products [Bhoothalingam, 1968, p. 8]. However, this recommendation was not accepted by the Government. The Indirect Taxation Enquiry Committee, 1978, considered the problem of multiplicity of rates and recommended a set of four excise rates. The Committee observed: 'Instead of a pattern of which some product groups are very heavily taxed while others have remained either totally exempt or have been taxed at very low rates, the attempt should be to tax all consumer products, including those now falling under Tariff Item No. 68, at rates of 10, 20, 30 or 40 per cent (cumulative), though some exceptional products may need to be taxed at lower or higher rates on special consideration' [Jha, Part II, 1978, p. 174].

By suggesting a 10 to 40 per cent range, the Committee virtually favoured a ceiling on excise rates. The Government disfavoured any drastic regrouping of the then existing rates. 'A major restructuring of the excise tariff has to be ruled out in view of the need for resources and on other pragmatic considerations. Also, there is reason to apprehend that a major departure from the present pattern of excise taxation may upset the balance between different sectors of production' [*Speeches of Union Finance Ministers*, 1984, p. 459].

The Technical Study Group on Central Excise Tariff, 1985, also favoured a drastic reduction in the number of duty rates to simplify duty collection and compliance. The group recommended a band of five duty rates - middle rate, two rates below it and two above. Besides this, it also suggested a 'zero rate' category. The middle rate (M) was defined to represent overall average incidence of excise duties. The two rates below this middle rate (L1 and L2) were suggested for adoption for inputs and important items of real mass consumption. The two rates in the upper scale (H1 and H2) could be applied to a few inputs, consumer durables and items consumed largely by richer sections of society. The 'zero rate' was recommended for products which deserve exceptional treatment on economic, social or administrative considerations. More importantly, the Group suggested its own categorisation of excisable commodities on the basis of the rate

scheme suggested by it. Certain commodities, namely, petroleum products, cigarettes and other manufactured tobacco, and textiles (other than jute, ramie and flax fabrics) were kept out of the suggested categorisation because excise duties on these products deserved special treatment. The rate categorisation of commodities suggested by the Group is reproduced in Appendix V.

As regards 'zero rating', the Group's recommendations were two-fold. Firstly, it suggested 'zero rate' for commodities which at that time were subject to duty, viz., metallic ores and concentrates, machine tools, *agarbatties*, hurricane lanterns and camphor. Secondly, it advocated bringing under various rate categories, certain products which were then exempt from excise duty. This recommendation covered twenty items, the notable among which were pressure cookers, vacuum flasks, sewing machines, cycles, helmets and tooth brushes. The Group attempted only a broad and vague exercise of rate levels in terms of middle, below the middle and above the middle rates of duty without specifying, even on tentative basis, the duty rates in numerical terms. By leaving the actual fixation of rates to fiscal authorities, the Group left the exercise wide open.

EXCISE ON INPUTS AND MODVAT

One perennial problem of the Indian excise system has been the taxation of inputs (raw materials, components, and other intermediates) and the resulting cascading effect on the prices of final products. Prior to the Second Five Year Plan (1956-61), excise coverage was limited to consumer goods with the notable exception of steel ingots. However, the need for additional resources for successive Plans necessitated extension of the excise net to capital goods and raw materials. Various inputs like internal combustion engines, aluminium, cotton yarn, woollen yarn, fertilizers, chemicals, etc., are currently within the excise ambit. The disadvantages of input excises are well-known. However, levies on inputs form an integral part of the excise system in India for reasons of sheer administrative convenience.

Excises on inputs enhance costs and profits and, therefore, increase the prices of goods much more than the amount of excise collected. The cost of production increases because producers and middlemen require larger amount of working capital to maintain the necessary stocks of inputs. The prices of the finished products tend to reflect the taxes imposed on inputs used. If the middlemen apply fixed percentage mark-ups to purchase prices as their profit and if the purchase prices include the taxes, the mark-ups will be applicable to the tax component of the purchase price as well. In other words, increase in the price of the manufactures is in excess of the excise revenue accruing from the input taxes.

Moreover, if excises are imposed on inputs as well as the finished products for which these inputs are used, a gap emerges between the nominal rate of tax and the cumulative rate of tax. This phenomenon makes the excise system complicated and hinders its proper evaluation, particularly on equity criterion. Since it is not always possible to find out the cumulative levy on every finished product, it becomes difficult to estimate the distribution of the tax burden among various economic classes.

Still further, excises on inputs may promote vertical integration in an industry, a trend which is harmful to the growth of small-scale sector. Lastly, input excises impose inequitable burden on different economic classes by not discriminating between essential and non-essential uses of a product. For example, an excise on aluminium hits indiscriminately the use of the product for decoration purposes as well as for utensil making (generally used by the poor people).

Notwithstanding the various disadvantages of input excise, governments in many countries impose duties on inputs due to administrative convenience. Many items of inputs are end-product of one manufacturer but merely a component for another (e.g, tyres and tubes) and are also used as replacement items. Exemption of such items will be discrimination in favour of replacement consumption and certain commodities (say, motor cars) may be sold with avoidable

components and accessories stripped off. Moreover, provisions can be made in tax laws to minimise the cascading effects of input excise.

Pre-MODVAT Arrangements

Prior to the introduction of MODVAT in 1986, there were provisions in the Central Excises and Salt Rules, 1944, under which certain inputs were exempted from taxation to minimise the cumulative effect of excise levies. Thus, Rule 56-A of the said Rules, introduced in 1962, allowed the manufacturers of certain notified finished excisable goods to bring excise-paid components (for example compressors for refrigerators) to take credit for the said duty in the Proforma Credit Account to get adjustment of duty on the final excisable good.

The Indirect Taxation Enquiry Committee, 1978, which made an in-depth study of the cascading effect of input excises, recommended wider extension of Rule 56-A to products falling under different Tariff Items. The same Committee also recommended the introduction of Value Added Tax (VAT) at the manufacturing stage, called MANVAT, to tackle the problem of cascading effect of excise taxation.

Theoretically, value added tax (VAT), as prevalent in most West European countries, is the most desirable method to combat adverse effects of input taxation. In its ideal form, VAT is a multistage tax levied on all stages of production and distribution of a commodity. It is collected in instalments on the basis of value added at each stage of production and distribution. Since an input is taxed only once, VAT avoids the cascading effect which is the chief demerit of a generalised system of excise or sales taxation. Value-added tax discourages vertical integration of industries to the advantage of the small-scale sector. Since the cumulative effect of input taxation is absent under VAT, the impact of this tax on cost of production is limited to the amount of tax itself. By not allowing unnecessary cost escalations, VAT promotes competitiveness of domestic industries in the world market and thus generates favourable effects on exports. Value added tax in its comprehensive form also has the advantage of being neutral as between different industries, techniques of production and business organisation. It, therefore, does not distort patterns of production and consumption.

However, the operation of VAT has its own limitations, particularly in developing countries. For one, VAT is a comprehensive levy covering almost all production in its fold. It is different from excise duties which are in many cases selective in nature. Also, VAT, like sales tax, is essentially levied on *ad valorem* basis and does not admit of physical production as criterion for tax liability assessment. Contrarily, excise duties may be imposed on *ad valorem*, specific, or *ad valorem*-cum-specific basis or even in the form of a compounded levy.

In principle, VAT should be imposed at a uniform rate or at the maximum of 2-3 rates at all stages of production and distribution so that tax credit claims could be made easily. Excise duties, as also sales tax, may be imposed at a variety of rates on different commodities. The higher the number of rates, the operation of VAT becomes more complicated. Value added tax tends to be regressive in view of uniformity or limited number of rates. One way to ensure progressivity under VAT is to impose special excise duties on a select band of final commodities (luxuries) without extending the advantage of tax credit. At the other end, zero-rating or exemption may be applied in the case of necessities.

Value added tax is more suitable under a unitary form of government, i.e., under a single tax authority for commodity taxation. In a federation, where different tiers of government enjoy commodity tax powers, VAT would be difficult to operate due to problems of overlapping and lack of co-ordination.

Lastly, a comprehensive VAT requires an elaborate system of book-keeping, involving numerous computations, at each level of production; it may, therefore, prove very cumbersome for the taxpayers. It, *ipso facto*, calls for additional and efficient administrative efforts to check and cross-check the paper work done by the taxpayers. Apparently, both collection and compliance costs have a tendency to increase. The problem of administration is more serious in developing countries where accounting practices are less developed, partly due to low literacy rate.

It is much simpler for firms to file returns of gross turnover than the value-added returns which require, *inter alia*, accounts of taxes paid on inputs. This problem is further compounded because of the preponderance of small-scale producers and sellers in less developed economies. These constraints deprive VAT of its theoretical advantage of automatic cross-checking to discourage evasion. Lack of proper recording of transactions and the unmanageable number of small taxpayers engage the administration in a futile exercise of hide and seek. This problem can partly be solved by extending the VAT system only to the wholesale stage and by exempting sectors dominated by small-scale production. For further simplification, VAT may be restricted to the manufacturing stage. Exclusion of retail and wholesale stages would significantly reduce the burden on administration without, at the same time, interfering in the working of the tax, since they come at the end of the production chain.

The Long-Term Fiscal Policy Statement of December 1985 envisaged the extension of the proforma credit scheme and observed, 'The basic approach will be to move towards an extension of the present system of proforma credit to all excisable commodities with the exception of a few like petroleum, tobacco and textile products. This programme would amount to a modified system of VAT or MODVAT for short. The programme will be implemented in a phased manner over a period of years, taking due account of the revenue implications, the need to revise administrative procedures and the lessons from experience gained in the early stages of the reform' [*Long Term Fiscal Policy*, 1985, para 6.12]. In pursuance of the proposal made in the Long Term Fiscal Policy Statement, the Government introduced a modified system of value added tax or MODVAT with effect from March 1, 1986.[1]

MODVAT Scheme: Features

The MODVAT scheme provides for instant and complete reimbursement of excise duty and additional duty of customs (countervailing duty) paid on the components and raw materials when used in the manufacture of the final products. Articles which are not used as inputs in the manufacturing process are not eligible for the credit under this scheme.

Initially, the MODVAT scheme covered 38 chapters of the schedule to the Central Excise Tariff Act, 1985. These chapters pertained to the products of chemical and allied industries, paints and packaging materials, plastics, glass and glassware, rubber products, base metals and articles of base metals, machinery and mechanical appliances including electrical equipments, motor vehicles and certain miscellaneous manufactured products. The scheme was extended to all the remaining chapters (except those relating to textiles, tobacco and the petroleum sector) in 1987. The extension covered food products, mineral products, leather and travel goods, footwear, paper and paper-board, wood and cork products, asbestos cement products and precious metals. As long as the inputs and the final products are covered by the specified chapters, credit of duty on inputs is available.

The features of the MODVAT scheme are as follows: (i) The credit under MODVAT is available to a manufacturer of a final product only if the final product is dutiable. Where the final product manufactured by a manufacturer is exempt from excise duty then no credit of the duty paid on the inputs is available. Credit is allowed only after the evidence of payment of duty has been received by the Excise Department. (ii) Where the same input is used for different finished products, some of which are not dutiable, the credit of duty is allowed only for that part attributable to inputs which are used for the manufacture of dutiable finished products. (iii) The credit of the duty paid on the inputs under the MODVAT scheme may be utilised for payment of duty on the final products in which the inputs are used. (iv) Under the MODVAT scheme, credit of the duty is not restricted to raw materials and components only but covers all specified inputs which are used in the manufacture of final products. (v) The machines, plant, equipments, apparatus, tools or appliances used in the manufacture of the final products are not covered by the term 'inputs' for the purpose of MODVAT benefits. (vi) Under the MODVAT scheme,

inputs may be either procured from outside or manufactured within the factory. In either case, the duty credit would be available to the extent of duty actually paid.

The Government had made it clear in its Long Term Fiscal Policy Statement that the proposed MODVAT scheme was to be broadly revenue-neutral. Thus, side by side with the introduction of MODVAT which considerably reduced the cost of final products, the rates of duty on final products were suitably revised upwards by the Finance Act, 1986 to retain the collection of excise duties at the earlier level. This was justified on grounds of resource mobilisation for the Plans.

Advantages

The MODVAT scheme is claimed to have the following advantages: (i) It aims at making excise levies transparent so that the effective rate of taxation on a particular commodity could be known. This information will be helpful in undertaking meaningful studies of excise incidence. The results of these studies may be used to control excise burden on different commodities to ensure desired degree of progressivity in the excise levies. (ii) It seeks to avoid cascading effects associated with a traditional turnover tax. In particular, it will work as a cost-saving device through the availability of instant credit of the duties paid on the inputs and the consequent reduction of the interest costs. (iii) The MODVAT scheme will improve the competitive strength of the small-scale sector by allowing credit of duty which may be in excess of the duty actually paid on the inputs made by the small-scale units. (iv) MODVAT scheme is claimed to encourage indigenisation because full set-off is available when indigenous inputs are used. However, no credit of basic and auxiliary customs duties is permissible on imported materials and components. Although MODVAT scheme provides for set-off of countervailing duty, this element of import duty is not very significant in comparison with other elements of import duty, viz., basic and auxiliary duties. Countervailing duty is an element of import duty equivalent to excise duty on domestically produced goods. As the scope of MODVAT is widened, the process of indigenisation would gather momentum. (v) The MODVAT scheme is designed to encourage exports by making them more competitive in the international market. Since the MODVAT allows set-off through different stages of production, the final duty becomes clear on final goods which can be exported without payment of duty under bond. The payment of duty drawback will be swifter in view of the transparency of excise duty. (vi) It is claimed that MODVAT will check excise evasion because credit of input duty cannot be claimed unless actual production is declared to excise authorities. (vii) The MODVAT scheme will also help reduce the number of disputes, arising on account of classifications requiring lower or higher rates of duty, because duty element on a large number of components will become irrelevant for manufacturers in view of the set-off. Previously, selective set-off triggered disputes as regards the eligibility of an input for set-off. The introduction of Harmonised System Nomenclature will further reduce the scope for ambiguities.

Some experts feel that MODVAT is old wine in new bottles because the facility under it is practically the same as was, and is still available, under Rule 56-A. In other words, MODVAT scheme is only an extension and liberalisation of the proforma credit facility in operation for the last three decades. Though some degree of similarity does exist, the two schemes cannot be termed identical. Rule 56-A scheme was applicable on a commodity-to-commodity basis and involved discretion in taking decisions. MODVAT scheme is more comprehensive and rule-based and therefore curtails the discretionary powers of the Excise Department.

The benefits of MODVAT scheme do not extend to import duties because if credit is given for duty on imported inputs in the same way as it is given in respect of excise on domestic inputs, the protective wall available to indigenous industries would get demolished. This feature of the MODVAT scheme is in line with the practice in other countries which have adopted value added tax. The Tax Reforms Committee, 1991, examined, *inter alia*, the scope of extending the MODVAT scheme and observed, '...there is no alternative to gradually transforming the present excise tax system, consisting of two parts,

namely, (a) Modvat and (b) excise on gross value basis with no set off for some sectors, into a genuine VAT at the manufacturing level. Manufacturing and such a VAT should include also the 'manufacture' of services although some services may be exempted on practical considerations' [Chelliah, 1992, para 4.1]. Such a far-reaching recommendation is not easy to implement.

EXEMPTIONS AND CONCESSIONS

As in other countries, exemptions and concessions are integral parts of the Indian excise system. Excise preferences and reliefs are given to promote a wide spectrum of socio-economic objectives. If judiciously used, such tax preferences become effective tools of economic change on desired lines.

The rationale for excise preferences is as follows: (i) Exemptions and concessions are necessary to ensure progressivity in the commodity tax structure. (ii) Excise preferences are justified to induce entrepreneurs to undertake activities which they would otherwise shirk as, for example, adopting labour-intensive techniques of production. Concessions are designed to promote enterprises deemed 'vital' by the society, though it is controversial as to which activities are 'vital' and require governmental support. (iii) Exemptions/concessions provide desired flexibility to the tax system to deal with changing market situations. They are used as corrective mechanisms to stabilise demand, production and profits of different industries. With continuous diversification of the economy and the price increases, markets for various commodities have not remained stable in India after Independence. As a result, the levels of profit in different industries have been fluctuating and, on balance, showing a rising trend. Excise rates, it may be argued, should be modified upward to mop up excess profits and downward to boost sluggish demand for idle-capacity industries. (iv) Exemptions may be granted on administrative consideration. The duty on unmanufactured tobacco was abolished in 1979 mainly on account of the administrative difficulty of assessing and collecting duty from a large number of growers, and curers. Similarly, the exemption given to very small industries is also due mainly to administrative problems. Agricultural products are also exempt.

The desirability of excise preferences is to be viewed against problems created by them. (i) Excise concessions narrow the tax base and therefore shrink governmental revenues. (ii) Excise concessions interfere in the designing of excise system and lead to complexities in excise law which, in turn, could lead to tax evasion and litigation. (iii) They also obscure the evaluation of the excise system, particularly from the equity angle. (iv) Excise concession to a particular industry may lead to a chain reaction of demands by other industries, resulting in unsettling effects on producers, consumers and administration. Exemptions/ concessions are often the result of persistent representations and pressure tactics by industry and trade than of economic justification. (v) It is not always possible to segregate the effects of duty reduction on production, costs, prices and consumption because duty concessions operate in conjunction with other non-tax policy measures to affect the production process.

Miscellany of Exemptions

Goods of the following description are exempt from the whole of the duty of excise leviable thereon. (a) All excisable goods, produced in a technical, educational and research institute during the course of imparting technical training of an academic or vocational nature. (b) All excisable goods donated for the welfare of the defence personnel. (c) All excisable goods donated to the National Defence Fund or to the Ministry of Defence. (d) Excisable goods, supplied as stores for consumption on board a vessel of the Indian navy. (e) All excisable goods sent abroad as exhibits in any international trade fair or exhibition.

Apart from these general exemptions, excise tariff has been extensively used to serve a host of other objectives. In the early 1970s tariff on tea was raised ostensibly to curb domestic consumption and generate exportable surplus. Similarly, in 1976 excise duty on ready-made garments was abolished as an export promotion measure. Excise mechanism has also been used

to promote industrial development in general, to encourage particular industries and to give incentives to particular products of certain industries. Thus, in 1976 a scheme of excise duty concession was introduced to encourage higher production in selected industries. Under this scheme clearances in excess of a certain norm qualified for a 25 per cent reduction in the rate of excise duty applicable to such clearances. The scheme expired on March 31, 1979. Still further, excise policy has also been used to mop up a part of the high profits earned by certain industries on account of shortage of certain commodities. Thus, in 1980 the excise duty on soda ash and caustic soda was raised from 10 per cent to 15 per cent *ad valorem* to mop up a part of the high premium being earned by these products on account of persistent shortages.

Excise exemptions and concessions are particularly important in promoting labour-intensive technology and small-scale industries. The Central Excise law contains provisions whose sole objective is employment generation. Products of a number of industries are exempt from excise duty if they are manufactured without the aid of power. Duty differentials have been used to discourage mechanisation in certain industries. An early example of this is the imposition, in 1954, of a duty of Rs 3 per 1,000 *biris* in the manufacture of which any process was conducted with the aid of machines operated with or without the aid of power. The purpose of the duty was to discourage mechanisation and sustain employment in the *biri* industry. In 1979 the duty on matches produced by the mechanised sector was stepped up from Rs 4.83 per gross boxes of 50 matches to Rs 9.20. The duty applicable to the cottage sector was reduced from Rs 3.36 to Rs 1.60. In the same year, machine-made carpets were subjected to a 30 per cent duty while hand-made carpets were kept totally exempt.

Similarly, concessions are available to the handloom sector of the textile industry. Processed *khadi* cloth woven on handloom wholly from hand spun cotton yarn or in admixture with similar silk and/or woollen yarn enjoys full exemption since 1969. Cotton fabrics manufactured on handlooms and processed by a factory owned by a registered handloom cooperative society or any organisation set up or approved by the Government for the purpose of development of handloom enjoy full exemption from duty. In view of this plethora of exemptions, the Working Group on Customs and Central Excise Administration observed, 'the number and variety of exemptions complicate the administration of the excises. Encouragement to a particular sector of an industry to the use of a particular raw material, for stimulating production or to the use of goods for a particular purpose should as far as possible be given through non-revenue measures which do not distort or upset the normal functions of the commodity tax system and its procedures' [Hajarnavis, 1968, p. 5].

The Expert Committee on Tax Measures to Promote Employment, 1980, made estimates of annual cost of protecting or subsidizing employment through concessions in excise duties. It found that the annual cost of protecting or subsidizing employment through concessions in excise duties was Rs 523 per full-time worker in the handloom industry, Rs 881 in khandsari, and Rs 2,669 in the cottage sector of the match industry [Dandekar, 1980, Pp. 91, 113, and 117].

Concessions to Small Industries

In line with Government's policy of encouraging small-scale industries, a wide range of concessions and exemptions from excise duty is available to small producers to enable them to stand in competition with large-scale manufacturers. Also, relatively simple and concessional procedures are followed for the assessment and collection of excises from the small-scale sector.

Before April, 1978, duty exemptions available to small scale manufacturers were not based on any one pattern. Various *ad hoc* concessions had existed and the principles of relief had also varied greatly. A number of formulae had been adopted to define the small units, such as value of clearances per annum, quantity of clearances per annum, use of power, number of workers, value of capital investment on plant and machinery, and a combination of two or more of these criteria. The operation of some of these criteria hindered expansion of output and employment. For example, the definition of small units in terms of

number of workers employed acted as an obstacle to more employment because whenever the maximum prescribed limit of the number of workers was exceeded, the unit lost the duty relief for the entire year.

Consequent upon the recommendations of the Indirect Taxation Enquiry Committee, 1978, the general scheme of excise relief to small-scale industries was rationalised and recast in 1978. A small manufacturer was identified as one whose clearances of excisable goods did not exceed Rs 15 lakh in the preceding financial year. Thus all small-scale units manufacturing 'specified goods' whose clearances in the preceding year did not exceed Rs 15 lakh were exempted from the duty payable on the first clearances of Rs 5 lakh. The exemption covered 70 items including medicines, soap and detergents, paints and varnishes, household electrical goods, steel furniture, metal containers, aerated waters, vegetable non-essential oils, ceramics and other items notified. This general exemption benefited about 24,000 units then under excise control involving a revenue sacrifice estimated at Rs 28 crore in a financial year.

After successive revisions, the scheme as it stood in 1985 was as follows:

Value of Clearances (Rs lakh)	Extent of Duty Exemption
Upto 7.5	Full
7.5 to 15	75 per cent of the normal duty.
15 to 25	50 per cent of the normal duty.
25 to 40	25 per cent of the normal duty.

The scheme provided further that even when a unit exceeded the limit of Rs 40 lakh, it did not lose the concessional rate applicable at the lower slabs, till it exceeded the limit of Rs 75 lakh.

The scale of duty preference was expressed as a percentage of the normal duty. Obviously, the scale of preference was high for commodities which bore high rates of duty and vice versa. This formula, known as the slab rate system, was seen to encourage investment by small units in items which were subjected to a higher rate of excise duty. Moreover, it also provided strong temptation for small scale units to stay below a particular limit or to understate their actual production.

The New Scheme

In 1986, a flat rate concession was introduced under a new scheme called General Small-Scale Exemption Scheme. According to this scheme, as amended from time to time, small-scale units producing a variety of excisable goods are allowed excise duty concessions in the following manner. Any manufacturer whose value of clearances of excisable goods did not exceed Rs 2 crore in the preceding financial year is eligible to avail of the exemption. A small-scale unit is allowed complete exemption from excise duty on the first clearances made in any financial year upto a value of Rs 20 lakh for goods classifiable under any one heading of the Central Excise Tariff. If a small-scale unit manufactures excisable goods falling under more than one tariff heading, it is allowed full exemption upto Rs 30 lakh. For clearances of goods in excess of full exemption limit, the small manufacturer is required to pay a concessional rate of duty i.e., normal duty reduced by 10 per cent *ad valorem*, subject to a minimum duty of 5 per cent *ad valorem*. For example, if the normal rate of duty is 15 per cent *ad valorem*, the concessional rate beyond the full exemption limit will be 5 per cent *ad valorem*. In case where the normal duty for a commodity is 10 per cent *ad valorem*, the concessional rate will be 5 per cent *ad valorem*. For goods chargeable to specific duty, the concessional rate of duty is arrived at by reducing the specific duty by an amount equal to 10 per cent of the value of the goods. If concessional rate so arrived at is less than 5 per cent *ad valorem*, then the minimum duty of 5 per cent *ad valorem* is payable. This concessional rate of duty is allowed on clearances upto a total value of Rs 75 lakh. Beyond the level of clearances of Rs 75 lakh, the normal rate of duty applicable for the commodity is charged. The small unit can retain the concessions enjoyed by it for the clearances upto Rs 75 lakh. In tabular form the scheme is as follows:

Value of Clearances	Extent of Duty Exemption
Upto Rs 2 crore	Eligible for the scheme.
Upto Rs 20 lakh	Full duty exemption
In excess of Rs 20 lakh but upto Rs 75 lakh	10 percentage points less than the normal duty subject to a minimum duty of 5 per cent.

The existing general small-scale exemption scheme is based on the value of clearances. A small unit loses the relief totally the moment the eligibility limit by way of annual production of Rs 2 crore is crossed. This production-based identification of small units has serious lacunae in its operation. In view of the exemptions and concessional rates of duty, producers are tempted to remain within the exempted/preferred sector. The larger the gap between the free/preferential rate and the normal rate, the greater is the temptation, particularly among marginal producers who either resort to fake fragmentation of their units (through manipulation of accounts and other malpractices) or restrict output within the free/preferential rate slabs. In the first case it means unethical business practices and in the second case it adds to idle capacity in a situation which calls for maximum utilisation of available capacity. The Central Excise (Self-Removal Procedure) Review Committee, 1973, found that in the case of match industry the number of producing units had increased from 1,257 on 31.3.1968 to 1,688 on 31.3.1974 without a corresponding increase in production or revenue. In the case of steel furniture the number of units increased from 1,065 as on 1.3.1969 to 1,788 as on 31.3.1972, though production and clearances registered an increase of 13 to 14 per cent only [Venkatappiah, 1973, p. 23].

Another major disadvantage of the production-based criterion is the non-discriminatory treatment of capital-intensive and labour-intensive modes of production. It is possible for a capital-intensive unit to avail excise concessions, provided its total clearances do not exceed the prescribed ceiling. Conversely, in some industries where the value of output is relatively large due to high input prices, the units fail to enjoy concessions even if they happen to be much more labour-intensive. A typical example of such a situation is the electronics industry.

To remove this deficiency of the existing production-based criterion, the Committee on Tax Measures to Promote Employment, 1980, had suggested the adoption of *value added per worker* as the basis for granting excise concessions to small-sector. However, this suggestion lacked practical significance in view of the administrative problems involved in its implementation. It may be recalled that the Indirect Taxation Enquiry Committee, 1978, had discounted the feasibility of even *value added* as a criterion of excise concession for small producers and had adopted value of clearances criterion to be pragmatic in its approach.

Alternatively, the excise concessions to small units may be based on investment in plant and machinery but without any ceiling on production. Investment-based criterion, unlike the existing production-based criterion, will ensure unhindered growth of small units in terms of turnover. Excise concessions should be so devised as to help small industries to avail their benefits while expanding production at the same time. It is true that investment-based criterion may also lead to fragmentation of units but it will not induce producers to restrict output to remain within the exempted/preferred sector. The Technical Study Group on Central Excise Tariff, 1985, went a step ahead to recommend that once a unit is registered as a 'small-scale unit' by the Director of Industries of a State Government, it should be entitled to excise duty concessions without any further criterion of eligibility applied to it. The adoption of 'SSI registration' as the sole criterion would lead to administrative simplification and convenience for small entrepreneurs who would be saved the trouble of establishing their eligibility every year. The criterion suggested by the Group would mean abolition of the upper limit of clearances for purposes of eligibility.

As already noted, the general scheme of excise relief for small units introduced in 1978 was on blanket basis, i.e., complete exemption from duty on the first clearances of Rs 5 lakh, if clearances in the preceding year did not exceed Rs 15 lakh. The scheme was liberalised and graduated in subsequent years to ensure more benefit to value of clearances at lower level than at higher level. Duty exemption in 1985 was given in three steps, 75 per cent, 50 per cent, and 25 per cent of the normal duty. The scale of preference increased

with the lowering of the value of clearances. However, in 1986 a new flat rate concession was introduced under which small units pay normal duty reduced by 10 percentage points. In the 1985 scheme, the scale of duty preference was expressed as a percentage of normal duty. Obviously, the scale of preference was high for commodities which bore high rates of duty and *vice versa*. Therefore, the concession based on percentage points introduced in 1986 may well be considered an improvement over the earlier formula.

Misuse of Concessions

Though preferential treatment to small units and labour-intensive methods of production is desirable in itself, the misuse of these concessions has created doubts as regards the ultimate beneficiaries of such facilities. It has now been well-established that certain products, particularly footwear, domestic electrical appliances, electronic goods and wires and cables are purchased on a fairly large scale by established concerns from exempted sector and marketed in the brand names of such concerns. However, under the present scheme introduced in 1986, a small-scale manufacturer of excisable goods is allowed to clear his goods with the brand name of another manufacturer and is eligible for exemption for such clearances. It is clear that small producers depend heavily on private marketing organisations to sell their products and this dependence needs to be reduced by strengthening and building up cooperatives and other officially sponsored marketing organisations to market the products of the small scale sector. This seems to be one way out of the existing dilemma.

NOTE

1. Under Constitutional provisions, sales tax is levied by the States. The Central and the State Governments may levy excise and sales tax respectively on the same set of commodities, including inputs. The nature (single point or multi-point) and rates of sales tax differ from State to State and it is extremely difficult to integrate them with excise duties to give way to full-fledged VAT. The present VAT is MODVAT because it encompasses only excise on manufactures and leaves out sales tax and octroi.

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APPENDIX I. CHAPTER-WISE BRIEF DESCRIPTION OF THE GOODS INCLUDED IN THE SCHEDULE TO THE CENTRAL EXCISE TARIFF ACT, 1985

Section I	*Animal Products*
Chapter 2	Meat and edible meat offal
Chapter 3	Fish and other aquatic invertebrates
Chapter 4	Dairy produce
Chapter 5	Products of animal origin
Section II	*Vegetable Products*
Chapter 7	Edible vegetables and roots
Chapter 8	Edible fruit and nuts
Chapter 9	Coffee, tea, and spices
Chapter 11	Products of the milling industry
Chapter 13	Lac, gums, resins and other vegetable saps.
Chapter 14	Vegetable plaiting materials
Section III	*Animal or Vegetable Fats and Oils*
Chapter 15	Animal or vegetable fats and oils and their cleavage products
Section IV	*Prepared Foodstuffs, Beverages, Tobacco, etc.*
Chapter 16	Preparations of meat, fish, etc.
Chapter 17	Sugar and sugar confectionery
Chapter 18	Cocoa and cocoa preparations
Chapter 19	Preparations of cereals, flour, starch, etc.
Chapter 20	Preparations of vegetables, fruit, nuts, etc.
Chapter 21	Miscellaneous edible preparations
Chapter 22	Beverages, vinegar and spirits
Chapter 23	Residues and wastes from the food industries
Chapter 24	Tobacco and manufactured tobacco substitutes
Section V	*Mineral Products*
Chapter 25	Salt, sulphur, clay, cement, etc.
Chapter 26	Ores, slag and ash
Chapter 27	Mineral fuels, mineral oils, waxes, etc.
Section VI	*Products of the Chemical or Allied Industries*
Chapter 28	Inorganic chemicals
Chapter 29	Organic chemicals
Chapter 30	Pharmaceutical products
Chapter 31	Fertilizers
Chapter 32	Tanning and dyeing extracts
Chapter 33	Essential oils and resinoids
Chapter 34	Soap, organic surface-active agents
Chapter 35	Albuminoidal substances
Chapter 36	Explosives
Chapter 37	Photographic goods
Chapter 38	Miscellaneous chemical products

(Contd.)

APPENDIX I. (CONTD.)

Section VII	*Plastics and Rubber and Articles Thereof*
Chapter 39	Plastics and articles thereof
Chapter 40	Rubber and articles thereof
Section VIII	*Leather, Artificial Fur, Travel Goods*
Chapter 41	Leather
Chapter 42	Articles of leather
Chapter 43	Manufactures of furskin and artificial fur
Section IX	*Wood and Articles of Wood*
Chapter 44	Wood and articles of wood
Chapter 45	Cork and articles of cork
Chapter 46	Manufactures of straw, basketware, etc.
Section X	*Pulp of Wood, Paper and Paper Board*
Chapter 47	Pulp of wood, waste and scrap of paper
Chapter 48	Paper and paper board
Chapter 49	Printed books, newspapers, pictures, etc.
Section XI	*Textiles and Textile Articles*
Chapter 50	Silk
Chapter 51	Wool, fine or coarse animal hair
Chapter 52	Cotton
Chapter 53	Other vegetable textile fibre
Chapter 54	Man-made filaments
Chapter 55	Man-made staple fibres
Chapter 56	Wadding; felt and nonwovens
Chapter 57	Carpets and other textile floor coverings
Chapter 58	Special woven fabrics
Chapter 59	Impregnated, coated textile fabrics
Chapter 60	Knitted or crocheted fabrics
Chapter 61	Articles of apparel and clothing accessories
Chapter 62	Clothing accessories not knitted
Chapter 63	Other man-made textile articles
Section XII	*Footwear, Headgear, Umbrellas, etc.*
Section 64	Footwear, gaiters
Chapter 65	Headgear and parts thereof
Chapter 66	Umbrellas, walking sticks, etc.
Chapter 67	Artificial flowers, articles of human hair
Section XIII	*Articles of Stone, Plaster, Cement, etc.*
Chapter 68	Articles of stone, plaster, cement, mica, etc.
Chapter 69	Ceramic products
Chapter 70	Glass and glassware

(Contd.)

APPENDIX I. (CONCLD.)

Section XIV	*Natural or Cultured Pearls, Precious or Semi-Precious Stones*
Chapter 71	Pearls, precious stones, precious metals
Section XV	*Base Metals and Articles Thereof*
Chapter 72	Iron and steel
Chapter 73	Articles of iron or steel
Chapter 74	Copper and articles thereof
Chapter 75	Nickel and articles thereof
Chapter 76	Aluminium and articles thereof
Chapter 78	Lead and articles thereof
Chapter 79	Zinc and articles thereof
Chapter 80	Tin and articles thereof
Chapter 81	Other base metals
Chapter 82	Tools, implements, cutlery, etc.
Chapter 83	Miscellaneous articles of base metal
Section XVI	*Machinery and Mechanical Appliances*
Chapter 84	Nuclear reactors, boilers, and machinery
Chapter 85	Electrical machinery and parts thereof
Section XVII	*Vehicles, Vessels, and Associated Transport Equipment*
Chapter 86	Railway or tramway locomotives
Chapter 87	Vehicles other than railways
Chapter 88	Aircraft, space craft and parts thereof
Chapter 89	Ships, boats, and floating structures
Section XVIII	*Optical, Photographic Instruments, Clocks, Musical Instruments*
Chapter 90	Optical, photographic, medical instruments
Chapter 91	Clocks and watches and parts thereof
Chapter 92	Musical instruments
Section XIX	*Arms and Ammunition*
Chapter 93	Arms and ammunition and parts thereof
Section XX	*Miscellaneous Manufactured Articles*
Chapter 94	Furniture, mattresses, beddings, etc.
Chapter 95	Toys, games and accessories
Chapter 96	Miscellaneous manufactured articles

Source: Condensed from *Central Excise Tariff*, (various issues), Directorate of Publications, Customs and Central Excise, New Delhi.

APPENDIX II. REVENUE FROM VARIOUS TYPES OF CENTRAL EXCISE DUTIES: 1950-51 TO 1993-94

(Rs Crore)

Year	Basic duties	Cesses on commodities	Other duties*	Total	Additional duties in lieu of sales tax	Grand total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1950-51	65.9	1.6	-	67.5	-	67.5
1951-52	84.1	1.6	-	85.7	-	85.7
1952-53	80.6	2.4	-	83.0	-	83.0
1953-54	92.4	2.5	-	94.9	-	94.9
1954-55	105.7	2.4	-	108.1	-	108.1
1955-56	142.8	2.3	-	145.1	-	145.1
1956-57	188.1	2.3	-	190.4	-	190.4
1957-58	267.3	3.7	-	271.0	2.6	273.6
1958-59	293.0	3.7	-	296.7	16.1	312.8
1959-60	328.5	3.8	-	332.3	28.3	360.6
1960-61	376.0	6.7	-	382.7	33.6	416.3
1961-62	439.1	11.2	-	450.3	38.9	489.2
1962-63	573.3	13.5	3.1	553.9	44.7	598.6
1963-64	615.1	16.4	54.8	686.3	43.1	729.4
1964-65	679.9	16.1	60.9	756.9	44.4	801.3
1965-66	804.7	17.2	63.4	885.3	46.9	932.2
1966-67	905.5	20.8	57.2	983.5	50.1	1,033.6
1967-68	1,014.2	20.1	65.7	1,100.0	48.4	1,148.4
1968-69	1,173.0	19.5	78.3	1,270.8	52.5	1,323.3
1969-70	1,350.0	22.9	90.7	1,463.6	60.4	1,524.0
1970-71	1,580.2	29.6	106.7	1,716.5	74.7	1,791.2
1971-72	1,805.0	30.3	137.0	1,972.3	105.9	2,078.2
1972-73	2,100.2	32.4	81.4	2,214.0	134.8	2,348.8
1973-74	2,312.6	35.8	98.2	2,446.6	173.1	2,619.7
1974-75	2,797.7	68.7	215.0	3,081.4	187.8	3,269.2
1975-76	3,267.6	86.2	267.6	3,621.4	222.9	3,844.3
1976-77	3,613.6	77.9	253.1	3,944.6	257.1	4,201.7
1977-78	4,073.8	84.9	257.7	4,416.4	267.3	4,683.7
1978-79	4,859.8	94.1	-	4,953.9	335.6	5,289.5
1979-80	5,473.1	118.5	-	5,591.6	347.6	5,939.2
1980-81	5,772.2	105.3	-	5,877.5	394.6	6,272.1
1981-82	6,548.4	169.8	240.5	6,958.7	485.4	7,444.1
1982-83	6,962.4	307.1	229.5	7,499.0	496.4	7,995.4
1983-84	8,169.7	1,031.2	323.2	9,524.1	679.6	10,203.7
1984-85	8,848.5	1,044.8	283.3	10,176.6	810.9	10,987.5
1985-86	10,818.3	1,101.2	160.1	12,079.6	928.1	13,007.7
1986-87	11,960.2	1,231.8	185.3	13,377.3	1,111.3	14,488.6
1987-88	13,047.1	2,051.8	175.8	15,274.7	1,147.3	16,422.0
1988-89	15,011.8	2,348.3	188.9	17,549.0	1,276.3	18,825.3
1989-90	17,339.4	3,267.1	208.8	20,815.3	1,474.8	22,290.1
1990-91	19,606.2	3,080.1	274.6	22,960.9	1,490.4	24,451.3
1991-92	23,092.1	2,811.9	348.1	26,252.1	1,868.4	28,120.5
1992-93 (R.E.)	27,346.0	2,557.0	331.6	30,234.6	2,265.3	32,500.0
1993-94 (B.E.)	29,363.4	2,850.8	359.3	32,573.5	2,426.6	35,000.1

* These include regulatory duties, auxiliary or special duties, additional duties on textiles and textile articles, duties on electricity, and certain other duties levied from time to time.

Source: *Explanatory Memorandum on the Budget of the Central Government* and *Receipts Budget*, (various years), Ministry of Finance, Government of India, New Delhi.

APPENDIX III. EXTENSION OF COMMODITY COVERAGE UNDER THE CENTRAL EXCISES AND SALT ACT, 1944

Upto 1949

Motor spirit, kerosene, sugar, steel ingots, matches, tyres, unmanufactured tobacco, vegetable product, coffee, tea, cigarettes and cotton fabrics.

Between 1950-59

Soap, rayon, cement, footwear. Paints, paper, woollen fabrics, electric batteries, bulbs, fans, refined diesel oil, furnace oil, vegetable non-essential oils, synthetic fibres and yarn, motor cars, asphalt, bitumen and tar.

Between 1960-69

Silk fabrics, pig iron, aluminium, tin plates, internal combustion engines, electric motors, cycles, cinematograph films, motor vehicles, soda ash, caustic soda, glycerine, dyestuffs, cosmetics, medicines, plastics, cellophane, cotton yarn, woollen yarn, glass and glassware, chinaware, copper, zinc, refrigerating machinery, wireless receiving sets, petroleum products, acids, gases, rubber products, plywood, jute manufactures, asbestos cement products, iron and steel products, electric cables, gramophones, sodium silicate, lead, synthetic organic products, organic surface active agents (other than soap), confectionery, textile fabrics impregnated, steel furniture, crown corks, preserved food, fertilizers, power driven pumps, domestic electrical appliances, pilfer proof caps, wool tops.

Between 1970-79

Food products, aerated waters, glucose, chemicals, synthetic rubber, office machines, metal containers, safe and strong boxes, maida, lubricating oils and greases, calcined petroleum coke, linoleum, ready-made garments, typewriters, mosaic tiles, motor starters, electricity supply meters, motor vehicles parts, fork lift trucks, cinematograph projectors, cameras, rolling bearings, welding electrodes, coated abrasives, bolts, nuts, screws, zip fasteners, pressure cookers, vacuum flasks, playing cards, camphor, menthol, adhesive tapes, silk yarn, jute yarn, textile fabrics, tool tips, wire ropes, carbon black, rubber processing chemicals, smoking mixtures, tooth paste, electrical stumpings, tape recorders, cutting tools, permanent magnets, all other goods not elsewhere specified, chewing tobacco, snuff, graphite electrodes, starch, mineral fibres and yarn, computers, acetylene gas, polishes, watches, weighing machinery, tools, musical systems, flax yarn, coal, electricity, hookah tobacco, floor coverings, locks, tooth brushes, molasses.

Between 1980-93

Petroleum gases, television image and sound recorders and reproducers, television cameras, electronic machines for games of skill or chance, articles used for sound or sound and image recording, pan masala, organic chemicals, marbles in the form of blocks, slabs and tiles, travel goods namely brief cases, variety bags, and variety cases all sorts.

Source: Compiled from *Central Excise Tariff* (as on 15.7. 1985), Pp. 583-585; *Budget Papers* (various years), Government of India, New Delhi.

APPENDIX IV. TAX REFORMS COMMITTEE'S LIST OF COMMODITIES AT PRESENT EXEMPT FROM EXCISE DUTY AND WHICH COULD BE BROUGHT UNDER THE CENTRAL EXCISE TAX NET

Sr.No.	Chapter No.	Description of Goods
1	4	Butter and cheese
2	4	Skimmed milk powder
3	7	Dried vegetables put up in unit container
4	8	Edible fruits and nuts put up in unit container
5	9	Coffee powder containing chicory in any proportion
6	9	Spices put up in unit container
7	11	Malt and starches
8	13	Lac and guar gum
9	15	Fixed vegetable oils, hardened technical oil, industrial fatty acids and acid oils, mutton tallow and vegetable fats and oils
10	16	Preparations of meat and fish put up in unit container
11	19	Bread, pastry and cakes; food preparations for infant use put up in unit container
12	20	Jam, jelly, marmalade and fruit juice and vegetable juice put up in unit container
13	21	Sauces, ketchup and like preparations put up in unit container
14	28	Sulphuric acid, phosphoric acid, ammonia, ammonium chloride, manganese sulphate used in the manufacture of fertiliser, agricultural grade zinc sulphate
15	29	P-xylene
16	30	Homoeopathic, unani, ayurvedic and bio-chemic medicines, cotton wool and guage cloth bandages
17	31	Fertilisers
18	33	Agarbattis
19	34	Sulphonated castor oil and fish oil; soap, polishes, creams, scouring powder and pastes manufactured without the aid of power
20	37	Feature films
21	38	Inorganic accelerators; finishing agents for textiles, pesticides, insecticides and fungicides
22	39	Articles of plastics, polyester chips and polyamide chips;
23	40	Tyres and tubes for bicycles, cycle rickshaws, powered cycle rickshaws, tyres for tractors of engine capacity not exceeding 1800 c.c., tyres for power tillers and animal drawn vehicles
24	41	Chemically tanned leather
25	42	Vanity bags; articles of leather other than suitcases, vanity cases, executive cases, briefcases
26	45	Cork and cork articles used in the motor vehicles or power tillers
27	46	Mats manufactured from grass, straw, rushes and reeds; woven sacks of polyethylene or polypro- pylene or a combination thereof.
28	47	Wood pulp
29	48	Converted types of paper and paper boards, corrugated paper made of imported paper, craft paper and paper board used for packing of horticultural products, printed cartons made from specified varieties of paper, asphaltic roofing sheets
30	65	Safety head gear and parts thereof
31	66	Umbrellas and parts thereof
32	68	Mosaic tiles, articles of mica
33	69	Roofing tiles, stone and ceramic tableware, kitchenware and other household articles and toilet articles, other than of porcelain or china
34	70	Glass envelopes for electric lighting bulbs, fluorescent lighting tubes and television picture tubes; glass inners for vacuum flasks glass ampules and glass vials for injectables.
35	82	Hand tools used in horticulture and agriculture
36	83	Parts of steel furniture, safes, strong boxes, cash boxes and filing cabinets manufactured without the aid of power.
37	84	Internal combustion engines for tractors for engine capacity not exceeding 1800 c.c. for power tillers and for electrically operated two-wheeled and three-wheeled motor vehicles; diesel oil operated internal combustion engines for motor vehicles used solely as taxis, internal combustion engines of capacity not exceeding 50 c.c., diesel engines of 10 horse power and less; bicycle pumps and parts thereof bicycle valve and its components parts and accessories of power tillers, hand pumps and their parts, engraved copper rollers or cylinders for use in textile industry, water filters of capacity not exceeding 40 litres.
38	85	Black & white television sets, vacuum and gas filled bulbs, recorded and unrecorded audio cassettes, recorded video cassettes and manufactured directly from recorded tapes, cassette shells for audio cassettes.
39	87	Bicycles and other cycles not motorised and their parts, tractors of engine capacity not exceeding 1800 c.c. and chassis therefor
40	88	Aeroplanes and helicopters other than those for defence purposes
41	90	Frames and mountings for spectacles, goggles, spectacle lenses and intraocular lenses, medical and surgical instruments and apparatus cinematograph projectors designed for projecting cinematograph films of 16 m.m. width, or of size exceeding 9.5 m.m. parts of cinematograph projectors, precision balances.
42	91	One day alarm time pieces
43	93	Air guns, air rifles and air pistols
44	95	Toys and sports goods
45	96	Buttons and button blanks, pens, vacuum flasks and other vacuum vessels.

Source: *Final Report (Part II) of the Tax Reforms Committee (Chelliah Committee),* Annexure XI.2, p. 135, Ministry of Finance, Government of India, New Delhi.

APPENDIX V. COMMODITIES GROUPED ACCORDING TO RATE CATEGORIES RECOMMENDED BY THE TECHNICAL STUDY GROUP ON CENTRAL EXCISE TARIFF

Category L-1

Inputs/Machinery and Equipment:

Iron and steel - ingots/billets; Copper - unwrought; Zinc - unwrought; Lead - unwrought; Molasses; Aluminium - unwrought; Machinery, other than machine tools; Mineral products other than cement; Tractors; Locomotives, other heavy transport equipment; Jute manufactures.

Final Products

Processed vegetable oils; Vanaspati; Tea (excluding instant tea); Coffee (excluding instant coffee); Patent or proprietary medicines; Printing and writing paper; Watches; Radios upto 2 bands.

Category L-2

Inputs/Machinery and Equipment

Malt, starches; Glucose and dextrose; Glycerol; Fatty acids; Organic chemicals; Inorganic chemicals; Inputs for tanning; Dyestuffs; Pigments; Paints, enamels; Miscellaneous chemical products; Transmission/conveyor belts; Finished leather; Wood pulp, waste paper, Grinding wheels; Refractory goods; Glass fibre; Iron and steel - wrought products; Copper-wrought products; Zinc - wrought products; Lead - wrought products; Aluminium - wrought products; Electrical stampings and laminations; Internal combustion engines; Motor starters; Parts of TV sets; Electrical wires and cables; Electric motors; Pilfer proof caps; Rolling bearings; Welding electrodes; Tools; Bolts and nuts; Tool tips; Metal containers; Wire ropes; Permanent magnets; Graphite electrodes; Cement; Fibre glass optics; Slag wool, rock wool; Fork lift trucks; Weigh bridges; Weighing machines; Flax and ramie fabrics;

Final Products

Prepared/preserved foodstuffs; Prepared animal fodder; Biscuits; Soap; Detergents; Footwear; Polishes and creams for leather; Optical photographic, medical measuring and testing instruments, Meters, etc.

Category M

Inputs/Machinery and Equipments

Packing and wrapping paper/board; Asbestos cement products; Telephone and other communication equipment; Commercial vehicles; Tread rubber, rubber pipes; Storage batteries; Cine films-unexposed.

Final Products

Sugar; Toothpaste; Plate/sheet glass laminated/toughened glass; Butter/cheese - pasteurised; Typewriter ribbons; Electric bulbs and tubes; Electric fans; Radios above 2 bands; TV sets; Mopeds/scooters; Electric lighting fittings; Adhesive tapes; Safety razor blades; Dry batteries; Instant tea; Instant coffee;

Category H-1

Inputs/Machinery and Equipment

Plastic resins; Plywood - all sorts; Densified wood; Plastic emulsion paint/nitrocellulose lacquers; Tyres

Final Products

Sugar confectionery; Cocoa confectionery; Pan masala; Ice-cream; Cakes/pastries; Ceramic tableware, sanitary-ware, tiles; Glass tableware; Steel furniture; Photographic goods; Electrical appliances; Office machines; Motor cars; Safes/strong boxes; Magnetic tapes; Marble slabs/tiles; Polishes/creams for cars and wood; Aluminium furniture; Playing cards; Imitation jewellery.

Category H-2

Inputs/Machinery and Equipment

Parts of refrigerating and air-conditioning machinery; Cinematograph films - exposed.

Final Products

Aerated waters; Matches; Fireworks; Polyurethane foam and articles; Rubber foam and articles; Linoleum; Floor coverings; Gramophones, music systems; Tape recorders; Mechanical lighters; Electronic games; Travel goods; Cutlery; Speciality papers; Cine projectors; Television cameras; Refrigerators; Perfumery and cosmetics; Silverware; Air-conditioners; VCRs/VCPs; Luxury glassware.

Source: *Report of the Technical Study Group on Central Excise Tariff*, Part I, 1985, Pp. 30-33, Ministry of Finance, Government of India, New Delhi.

EFFICIENCY DIFFERENTIALS IN WHEAT CULTIVATION AND THEIR IMPLICATION FOR DEVELOPMENT POLICIES

R.P. Sinha

This paper examines the efficiencies of resource use and changes in the input structure in temporal and spatial framework in respect of wheat for the five important states of the country during the period mid-seventies to mid-eighties. As a consequence of technical change there has been significant improvement in the yield of wheat as well as reduction in its unit cost in real terms in all the five states. In the process of technological development there has also occurred structural change in the input-mix. While the use of human and bullock labour has declined, the use of modern inputs such as fertilizers, machinery, etc., has increased significantly over the period. An analysis of disaggregated farm level data reveals as to how the technical and allocative efficiencies have been influenced by the technical change and entrepreneurial ability as reflected through the yield levels and allocation of resources leading to cost minimisation. The most technologically efficient farmers through increasing the intensity of input use were able to harvest much higher yield with lower estimates of cost of production as compared to the farmers of the least efficient category. In the case of allocative efficiency, the farmers belonging to the most efficient category were also able to realise higher yield with lower cost estimates vis-a-vis inefficient farmers and both, the estimates of yield and cost of production, happened to be lower in comparison to those of the yield efficient farmers. An attempt has also been made to estimate the return to investment and relative share of inputs in the cost of cultivation among the most and least efficient farmers with a view to devise policy instruments for the efficient resource utilization and maximisation of production at a lower unit cost. The analysis reveals as to how the most economically efficient farmers were able to obtain the highest profit as compared to the most efficient farmers of technical and allocative efficiencies. The relative share of various inputs in the cost of cultivation of most efficient farmers suggests that there exists enough potential for pushing up the yield levels at much lower cost through efficient utilization of resources.

As the new technology capable of shifting the supply curve to the right is embodied in physical inputs like seeds of High Yielding Varieties (HYVs), fertilizer and irrigation, the yield rates can be improved at the farm levels only when the desired investments are made by the farmers. The required investments will however depend much upon the expected profits: the higher the profitability of new investments, the larger would be the investment. Besides improvement in yield, efficient use of production inputs would also help in realising higher profits from the given technology. In both the cases, higher productivity will lower the unit cost and increase the level of profits. Notwithstanding the rapid increase in yield levels and expansion of output of wheat, the farmer's margin of profit is on the decline, as the prices of inputs have been rising at a faster rate. The fact of the situation is that the rate of growth of wheat has slowed down during the eighties. The continuous rise in prices of farm inputs as well as increase in the minimum support price may not be of much help in generating the desired level of investable surpluses and increasing the output of the commodity. In view of the importance of the wheat crop, it is essential to reduce its cost of production through increasing the yield level and improving the efficiency of resource use, thereby providing higher incomes for the producers, meeting the projected demand for wheat, and maintaining the comparative advantages in the exports of the commodity. It would, therefore, be interesting to examine how efficiently the factor inputs have been utilised in the cultivation of wheat and take corrective measures to help accelerate the growth in its yield

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The views expressed in the paper are personal views of the author and do not necessarily reflect those of the organisation to which he belongs.

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at a lower unit cost.

The main objectives of the present study are to examine: (a) how the yield, cost structure and returns to farmers in respect of wheat have behaved over time; (b) how the input structure in the production process of wheat has changed over time; what are the differences among the important wheat producing states and what are the major factors behind the cross-sectional variations; and (c) what is the scope for improving efficiency of input use in the production of wheat and increasing returns to the farmers.

PRODUCTION PERFORMANCE

India has witnessed a phenomenal increase in wheat production with the successful implementation of policies and programmes for its cultivation since the mid-sixties. Agricultural innovations, based on the interaction of new seeds, fertilizer and water, resulted in higher productivity for those areas which were endowed with assured supply of water and for those farmers who could adopt the new capital intensive technology. In the traditional technology the bulk of productivity growth came from the different kinds of relative shifts in area. When the new technology started shifting production function upwards, pure increase in yield became the major factor for productivity growth [Dharm Narain, 1977]. Since the new technology was accorded explicit recognition as a major input, the development strategy required a price policy that would encourage farmers to make greater investments to enable them to shift to a higher production possibility curve. Therefore, the farmers were assured of a remunerative price for the higher growth. The large increases in yield levels and guaranteed minimum price for wheat encouraged a shift in acreage in favour of wheat from other crops which had lagged behind such technological change. With the rapid improvement in unit yield and expansion in acreage, the wheat-production scenario of the country underwent a dramatic transformation from one of perennial shortage and heavy imports to near self-sufficiency and even exports on a modest scale.

The introduction of new production technology, delivery services and price support strategy followed by the Government not only helped the country to meet its current demand for wheat but also exhibited great promise for its growth. Wheat production which was 6.5 million tonnes in 1950-51 gradually increased to over 55 million tonnes by the early nineties with the progressive adoption of new technology. The area under wheat increased from around 10 million hectares in 1950-51 to 24.7 million hectares in 1983-84 and since then it has been stagnating around 24 million hectares. Although the productivity of wheat increased from 827 kg in 1964-65 to about 2,400 kg per hectare by the early nineties, the yield potential of this crop which is sufficiently high, could not be exploited as expected. This is evidenced through the wide variations in yield levels. The differences in agro-climatic endowments and infrastructural development have been the main contributory factors for the disparities in the rate of growth of production and productivity across the states. Even within a state, where agro-climatic conditions are uniform, there are differences at the farm level in diffusion of modern technology and rate of fertilizer use. The farm level variations are primarily related to resource endowments of the households and access to irrigation facilities. These two factors also influence access of the household to such complementary inputs such as institutional credit and extension information as well as the farmer's ability to bear the risk attached to the output. However, given the agro-climatic potential of the major wheat producing states, the growth in productivity of wheat could have been still higher than what has been achieved, had the resources, irrigation and technology been used more efficiently. In the estimated additional requirement of food grains to the tune of about 50 million tonnes by 2000 AD [IFPRI Research Report 81] the share of wheat will be around 21 million tonnes. This implies an incremental production of wheat of about 2 million tonnes per annum. Considering the limited scope of increase in area, an average increase of about 900 kg per hectare in wheat productivity by 2000 AD would be needed to achieve the projected level of production from the existing area under the crop. For the country, as a whole, it took about two and half

decades to increase the yield of wheat by 1,300 kg per hectare. And to push the yield from a relatively higher level of 2,400 kg in 1991-92 to 3,125 kg per hectare by 2000 AD is a challenging task but not impossible.

There are significant differences in the levels of wheat yield both within and across the states arising out of the variations in the agro-climatic potential of the region, use of seeds of high yielding varieties, fertilizers, proportion of area irrigated and quality of irrigation, rainfall and soil conditions. Farmers allocate resources to a crop to maximise their expected return. They respond to changes in input costs, output prices and crop yields in their acreage allocation decisions. Often the differences in infrastructural development and inadequate availability of credit do not permit farmers to make significant changes in resource allocation even if there are prospects of better returns from the crop in the short-run. As a consequence of these factors, the production performance of wheat in various states have been markedly different, from high level yield in Punjab to comparatively low yields in Madhya Pradesh. In this chapter an attempt has been made to analyse the growth of output of wheat as observed through growth rates in area and yield, both at the national level as also in some of the important states.

The development strategy, along with remunerative prices and a stable market for the produce, influenced the resource allocation decisions of the farmer, and changed the wheat production scenario in India. This is evident from the fact that the area under wheat increased from 9.75 million hectares in 1950-51 to 12.84 million hectares in 1966-67, 14.99 million hectares in 1967-68 and 24.11 million hectare in 1988-89 (Table 2.1). Between 1967-68 to 1988-89, the proportion of irrigated area under the crop, increased from 43 per cent to over 78 per cent (Table 2.2) and the coverage under HYVs to 84 per cent (Table 2.3) of the total area under wheat. The application of chemical fertilizers per unit of area also went up in all the states. The output of wheat expanded from 6.46 million tonnes in 1950-51 to 11.39 million tonnes in 1966-67, 16.54 million tonnes in 1967-68 and further to 55.09 million tonnes by 1991-92. The per hectare yield, on an average, increased from 663 kg in 1950-51 to 887 kg in 1966-67, 1,103 kg in 1967-68 and 2,400 kg by 1991-92 due largely to identification of varieties capable of responding to good soil fertility conditions and management of inputs. Both, the area shift in favour of wheat and improvement in per hectare yield, contributed significantly in the expansion of wheat production, which increased between 1967-68 and 1988-89 at a compound annual growth rate of 5.20 per cent while productivity rose at a rate of 3.11 per cent. As against this, the annual growth in production of wheat between 1950-51 and 1966-67 was 3.59 per cent and that in yield 1.50 per cent.

The analysis of growth in the production of wheat at the national level over a longer period (Table 2.4) indicates that as compared to the seventies (1969-70 to 1978-79) there has been some deceleration of growth during the eighties (1979-80 to 1988-89). The production of wheat during the seventies recorded a compound growth rate of 5.07 per cent per annum, wherein the contribution of area was at the rate of 2.75 per cent which was essentially based on high expectations of profitability from raising this crop, relative to substitutable crops. During the eighties, the production of wheat increased at a lower rate of 4.68 per cent per annum, wherein the contribution of yield was at the rate of 3.99 per cent per annum. Thus, the deceleration in the growth rate of production of wheat during the eighties occurred due to the slowing down of growth of area under the crop. It can be argued that expectations relating to high and increasing level of yield per hectare were mainly responsible for the growth in area allocation under wheat during the seventies. As the farmers' expectations about the level of yield are based on their knowledge of production response from different inputs, including irrigation, it is essential to create suitable conditions for future growth of the crop through expansion of irrigation facilities which would activate nutrient intake capacity of plants.

Although wheat production increased during the eighties at a lower rate in comparison to that during the seventies, yet the share of Haryana, Madhya Pradesh, Punjab, Rajasthan and Uttar Pradesh put together, which accounted for 80 per cent of total production during the seventies,

increased to 85 per cent during the eighties. While the growth rate of production in Uttar Pradesh, Haryana, Punjab and Madhya Pradesh increased from 5.32, 4.07, 4.02 and 2.64 during the seventies, to 5.71, 6.39, 4.42 and 7.02 per cent per annum, respectively, during the eighties, in the case of Rajasthan, the growth rate of production decelerated from 6.99 per cent during the seventies to 3.26 per cent per annum during the eighties due to decline in area caused by the substitution of wheat area for other rabi crops. Within Uttar Pradesh, production in the western part of the state increased from 3.88 per cent per annum during the seventies (1970-71 to 1979-80) to 5.34 per cent during the eighties (1979-80 to 1988-89); in the eastern part of the state it decelerated from 7.96 per cent to 6.75 per cent during the same period.

In the past two decades, the maximum expansion in wheat area occurred during the seventies, whereas highest improvement in productivity was witnessed during the eighties. In the 60 lakh hectares of additional acreage that came under wheat during the seventies, the contribution of Uttar Pradesh was nearly one-third; during the eighties the share of this state increased to about 60 per cent of the 19.4 lakh hectares of additional area that came under wheat. Within Uttar Pradesh the contribution from the eastern part of the state increased from 46 per cent during the seventies to 58 per cent during the eighties; in the western part of the state, it declined from 54 to 42 per cent. The contribution of Punjab in the incremental acreage under wheat also increased from 10 per cent during the seventies to 17 per cent during the eighties, that of Haryana from 8 to 18 per cent, Bihar from 11 to 21 per cent and Madhya Pradesh from 10 to 30 per cent. In these states it was the substitution of wheat for other competing crops that explained a large part of the additional acreage that came under wheat. The cropped area during the rabi season in these states had not increased as substantially as to account for the total increase of area under wheat. It may be mentioned here that a distinguishable shift had also taken place in the states of Rajasthan, Gujarat, Karnataka, Maharashtra and West Bengal, where during the seventies the area under wheat had increased significantly, but during the eighties, the wheat acreage started shifting in favour of oil seeds and other competing crops.

The analysis further reveals that while the growth rate of area under wheat in Madhya Pradesh increased from 0.62 per cent during the seventies to 1.51 per cent per annum during the eighties, in Uttar Pradesh, Punjab, Haryana, Bihar and West Bengal, it decelerated from 2.68, 2.15, 3.21, 4.50 and 7.27 during the seventies to 1.21, 1.38, 2.22, 2.45 and 0.47 per cent per annum, respectively, during the eighties. The growth rate of wheat, which was 4.37, 4.46, 2.66 and 4.68 per cent per annum, respectively, in Rajasthan, Gujarat, Karnataka and Maharashtra during the seventies, became negative during the eighties. Given the relative price environment prevailing for different crops, it is unlikely that any significant shift of acreage in favour of wheat would take place in the near future. Thus, the additional production of wheat in the near future has to obviously emerge mainly from the growth in yield per hectare.

The incremental yield of wheat on an average increased from 360 kg during the seventies to 809 kg per hectare during the eighties. Uttar Pradesh, Haryana and Punjab recorded substantial increases in growth rates of yield from 2.57, 0.84, and 1.83 per cent per annum during the seventies to 4.45, 4.08 and 3.00 per cent per annum, respectively, during the eighties. Within Uttar Pradesh, which accounts for nearly one-third of the country's area under wheat, the growth rate of yield in the eastern part of the state improved from 2.55 per cent per annum during the seventies (1970-71 to 1979-80) to 4.60 per cent per annum during the eighties (1979-80 to 1988-89) and in the western part, from 1.02 to 3.39 per cent per annum during the same period. In Rajasthan also, there has been an acceleration in the growth rate of yield from 2.51 to 4.85 per cent per annum, but the area under wheat in this state has been on the decline during the eighties. In Bihar and Madhya Pradesh, there was a significant step up in the growth rate of yield from 1.69 and 2.01 per cent per annum during the seventies to 3.74 and 5.43 per cent per annum, respectively, during the eighties due to increasing adoption of modern technology. Notwithstanding these increases, the

yield levels in these two states continued to remain substantially lower than the national average. The low yields in Madhya Pradesh were, among other things, due to the low coverage (52 %) of area under higher yielding varieties, lower rate of fertilizer application and only 39 per cent of the wheat area being irrigated. Besides, high temperature, particularly at the flowering and grain formation stage also reduced the yield of wheat. The major constraint in the realisation of higher yields of wheat in Bihar lay in delayed sowings and prevalence of high temperatures at the time of grain formation.

There are wide variations across the states in the proportion of wheat area being irrigated and also in per hectare use of fertilizers. The level of use of HYVs, fertilizers and irrigated area in Punjab, Haryana, Uttar Pradesh and Rajasthan, having productivity of more than 2,330 kg per hectare, is much higher than that in Madhya Pradesh. In the first three states, of the total area under wheat, 75 per cent was under HYV seeds, more than 88 per cent under irrigation and the application of fertilizers was greater than 100 kg per hectare.

There has been considerable increase in fertilizer (NPK) consumption particularly after the introduction of the new technology in the mid-sixties. Considering the higher nutrient removal and low nitrogen use efficiency, the present fertilizer use is almost half of the required level. Because of wide variation in agro-climatic and socio-economic conditions, fertilizer (NPK) use varied from 35 kg per hectare in Madhya Pradesh to 182 kg per hectare in Punjab during 1986-87. Multi-nutrient deficiency arising from imbalanced and inadequate use of plant nutrients is another serious constraint in increasing wheat yield. Although average fertilizer (NPK) use in wheat reached the level of 185 kg per hectare, it is mainly confined to the irrigated areas of Punjab. The farmers in rainfed areas do not use much fertilizer. Farmers in Bihar, Madhya Pradesh and Rajasthan suffer most from recurrent natural calamities such as floods and drought.

The wide differences in the use of various inputs have contributed to differences in the growth of production and productivity of wheat across the states. Inadequate availability of credit and uncertainty relating to future conditions arising out of natural calamities do not induce the farmers into making significant changes in resource allocation, even if there are prospects of more attractive returns from the crop in the short-run. This pattern of behaviour is also borne out by the slower adoption rate of crop technology by small and marginal farmers, who do not generate enough investable resources. The present use of fertilizers at the national level is very low compared to the recommended application of over 100 kg per hectare. Along with utilization of HYV seeds, it is essential to step up the use of chemical fertilizers and expansion of irrigated area to boost the productivity. There is also need to make available credit at easy terms to facilitate the farmers to buy the farm inputs like HYV seeds, fertilizers, etc., in time and use them for expanding production. It is also essential to maintain a favourable output-input ratio for adoption of growth accelerating technology.

CHANGES IN THE COST OF PRODUCTION AND INPUT STRUCTURE

Another aspect of technological progress is observed through the structural changes in the input mix in the production process. Such changes obviously depend upon substitution possibilities, relative prices and availability of different inputs. A study of changes in the structure of costs and input mix, therefore, becomes important because they have important implications on income, savings and investment, and as such on, the future growth prospects. An attempt has been made in the following paragraphs to examine the trends in the cost structure in the cultivation of wheat in important states.

An inter-state comparison of cost of production of wheat reveals the fact that there are large spatial variations in both, the levels of yield and cost estimates. One of the foremost reasons behind the differences in the cost estimates of wheat is the agro-climatic potential of the state. Because of the biological nature of production, it is possible that the levels of output obtained by different farm units may differ despite the use of the same input mix. Thus, in spite of the cost of cultivation per unit of land being the same the yield and the derived cost per unit of output may differ.

The cost of production data generated under the *Comprehensive Scheme for Studying the Cost of Cultivation/Production of Principal Crops in India*, by the Directorate of Economics & Statistics, Ministry of Agriculture, Government of India, have been used in this study to analyse the changes in the cost of production and input structure between mid-seventies and mid-eighties. The sampling design and the details of various cost concepts are given in Annexure 'A'. The analysis is mainly confined to the mid-seventies (triennia ending 1976-77) and mid-eighties (triennia ending 1986-87). The selection of the period was mainly determined by the availability of cost of production data for the comparable periods. Further, instead of basing observations on yearly data, which fluctuate significantly depending upon weather conditions, most of the comparisons are based on triennium averages which are fairly insulated from weather induced variations. It may also be mentioned that both the triennia considered for the study, viz., 1976-77 and 1986-87, included two normal years and one good year in terms of monsoon performance and wheat production. The share of each item was estimated according to the level of technology adopted in different states for which yield levels have been used as proxy. The Table 3.1 presents yield levels and estimates of cost of production of wheat per quintal at 1974-75 input prices (Annexure B) in the five major wheat growing states during the two periods.

The level of yield per unit of area is influenced by two factors, viz., agro-climatic factors, or non-economic factors unrelated to any decisions made by the farmers, and economic factors depending upon the farmers' decisions and use of resources. Between mid-seventies and mid-eighties, on an average, the highest incremental yield of 8.84 quintals per hectare was estimated in Punjab, followed by 6.01 quintals in Haryana, 3.35 quintals in Rajasthan and 3.20 quintals in Uttar Pradesh. There was hardly any increase in Madhya Pradesh, which could be attributed to the very low level of technology adoption. The yield for the five states, on an average, increased from 20.13 quintals during the mid-seventies to 24.44 quintals per hectare during the mid-eighties. During the first period, the per hectare yield was 24.28 and 22.73 quintals in Punjab and Haryana, respectively, as against only 12.03 quintals in Madhya Pradesh. In Uttar Pradesh the yield was 21.60 quintals and it was 19.99 quintals per hectare in Rajasthan during the same period. In Punjab and Haryana, where the yield levels of wheat were already relatively high and the farmers were better off, due to rapid diffusion of new technology during the mid-eighties, the unit yield on an average increased to 33.12 quintals in Punjab and to 28.74 quintals per hectare in Haryana. By the end of the same period, it increased to 24.80 quintals in Uttar Pradesh and 23.34 quintals per hectare in Rajasthan. In Madhya Pradesh, it increased marginally to 12.19 quintals per hectare. Besides the agro-climatic conditions, the observed productivity differences across the states were due to amounts and proportions of different factors of production used and/or from the differences in efficiency with which they had been used.

Cost Structure

Like yields, the estimates of unit cost of production also showed substantial inter-state variations. The cost of production (C_2) per quintal at constant prices, from the mid-seventies to the mid-eighties declined by 34 per cent (from Rs 96 to Rs 64) in Rajasthan followed by 23 per cent (from Rs 94 to Rs 72) in Uttar Pradesh, by 15 per cent (from Rs 91 to Rs 78) in Haryana, by 10 per cent each in Punjab and Madhya Pradesh (from Rs 98 to Rs 88 and from Rs 105 to Rs 94, respectively). The cost estimates for all the five states, on an average, declined by 18 per cent, i.e., from Rs 97 to Rs 79 per quintal. The analysis of the behaviour of the unit cost of production of wheat at constant prices during mid-seventies and mid-eighties reveals a declining trend in all the states. From the analysis one finds that technological progress is accompanied by a reduction in real cost of production.

In so far as net income was concerned, it increased in all the states between the two periods. It increased from 79 per cent in a high productivity state like Haryana to 214 per cent in a low productivity state like Madhya Pradesh. The net income for all the five states, on an average,

increased from Rs 801 during the mid-seventies to Rs 1,550 per hectare during the mid-eighties, showing a rise of 94 per cent. The above observation suggests that there is scope for bringing down the unit cost of production via improvement in per hectare yields, as also for maximising the net income, more so in a low productivity state like Madhya Pradesh.

With the increased investment in resources and higher intensity of input use, the per hectare cost of cultivation of wheat for all the five states at 1974-75 prices, on an average, moved up from Rs 2,226 during the mid-seventies to Rs 2,296 during the mid-eighties, marking an increase of three per cent. The increase in per hectare cost of cultivation was maximum in Punjab (27 per cent) followed by Haryana (8 per cent) and Madhya Pradesh (2 per cent). However, in Uttar Pradesh the unit cost of cultivation declined by 13 per cent and that in Rajasthan by 11 per cent due to reduced intensity in the use of human labour, particularly family labour, bullock labour owing to their part substitution by machine labour, as well as reduced investment in capital inputs.

The relationship between the estimates of cost of production and yield appears to be interesting at the state level. During the mid-eighties, Madhya Pradesh with a yield of 12.19 quintals per hectare, had the highest estimate of cost of production (C_2) at Rs 94.48 per quintal in comparison to the lowest cost estimate of Rs 63.83 per quintal in Rajasthan having a yield of Rs 23.34 quintals per hectare during the same period. However, Punjab with a higher yield of 33.12 quintals per hectare had a cost estimate of Rs 88.06 per quintal as against the cost estimate of Rs 78.02 per quintal for Haryana with lower yield of 28.74 quintals per hectare. What is intriguing is the high estimates of cost in Punjab than that for Haryana, despite the fact that the former state had a higher yield of 4.38 quintals than the latter. In fact the cost estimates in Punjab should have been lower as the yields were higher due to the widespread use of seeds of HYVs and availability of better irrigation facilities. It seems that the diffusion of technology had reached at a fairly high level in that state. Continued dependence on Punjab for future growth of wheat is, therefore, likely to lead to greater pressures for a higher price for the commodity.

The proportions of different items of input in the cost of cultivation of wheat both for mid-seventies and mid-eighties for the five states, are given in Table 3.2. One finds from the table that there has been a marginal decline in the share of fixed cost in Haryana and Uttar Pradesh. In Haryana, this can be attributed mainly due to decline in rent, land revenue and rental value of owned land, whereas in Uttar Pradesh it was due to reduced share of rental value of owned land, land revenue and reduced investment in capital inputs. The remaining three states, experienced an increase in the share of fixed cost due to increased share of rent, rental value of owned land and capital cost. However, due to substitution of labour by capital, the resultant share of human and bullock labour, the two major component of operational cost, showed a general decline in all the states.

Input Structure

Apart from seed and land, the other important inputs in wheat cultivation are human labour, bullock labour, machine labour, fertilizer and irrigation. The estimates of cost of cultivation also provide estimates of physical quantities of human labour, bullock labour and fertilizer. These data along with the monetized value of machine and irrigation and interest on fixed capital, evaluated at 1974-75 prices, for both the periods, mid-seventies and mid-eighties, for all the five states are given in Table 3.3.

It is observed from the table that labour absorption in wheat cultivation has been quite different across the states, in both the periods, depending upon the intensity of labour use. In the first period it was as high as 102.36 mandays in Uttar Pradesh and as low as only 62.62 mandays in Punjab. In the second period, these figures for the two states came down to 71.34 and 55.27 mandays, registering a fall of 31 and 7 per cent, respectively. In fact, the labour absorption between the two periods in all the states, put together, on an average declined by 26 per cent from 78.33 to 57.67 mandays. This phenomenon

can be explained in terms of substitution between human labour and machine labour. Due to substitution of labour by machinery, the cost of family labour component declined between 19 and 43 per cent except in Rajasthan, where it increased by 6 per cent.

In the case of bullock labour too, there is substantial inter-state variation as evidenced by the data in Table 3.3. It ranged from 34.22 in Uttar Pradesh to 12.01 pair days in Punjab in the first period which declined to 15.18 and 3.12 pair days respectively in the second period. The overall average of the five states also came down from 22.63 to 10.92 pair days, that is by 52 per cent. The significant reduction in the use of bullock labour can again be explained in terms of bullock labour being substituted by machine labour. Area of mechanisation has been limited to high productivity states like Punjab and Haryana where a smaller proportion of human and bullock labour is being employed.

The expenses on account of irrigation for all the five states, on an average, declined by 42 per cent, i.e., from Rs 160.32 during the mid-seventies to Rs 92.32 per hectare during the mid-eighties. Among the states, the maximum decline of 53 per cent was observed in Rajasthan followed by 51 per cent in Haryana, 46 per cent in Punjab and 40 per cent in Uttar Pradesh. In the case of Madhya Pradesh, with the increase in irrigated area, the expenses between the two periods on an average basis was higher by 209 per cent. The decline in the estimated expenses of irrigation between the two periods in the four states could be attributed to the undergoing change in the pattern of irrigation. As a consequence of development of irrigation potential, there has been expansion of area irrigated by canals, whose cost is substantially lower than any other sources. Further, with the progress of rural electrification, more and more tubewells are being run by electric motor, the electricity charges are generally on a flat rate and the tariff is heavily subsidised. Because of limitations as discussed below, the figure for expenses on account of irrigation, as given in the table, are of a lower order of precision.

In general, mechanization at the initial stages reduces the bullock labour intensity and at a later stage operates as a substitute for human labour. In the absence of data on physical quantities, the cost estimates for machine labour and irrigation have been converted at 1974-75 prices, using appropriate input price indices (Annexure B). These input price indices are essentially based on prices of a number of inputs which are used for private irrigation and operation of farm machinery. They do not fully reflect the nature of irrigation charges for Government irrigation and electricity rates. As such the indices have an upward bias. Modern technology being capital intensive, high productivity states, exhibited higher use of machine labour. The cost of machine labour between the two periods increased by 94 per cent in Punjab, followed by 92 per cent in Haryana, 57 per cent in Uttar Pradesh, 27 per cent in Rajasthan and the lowest being 8 per cent in Madhya Pradesh. In value terms, the cost of machine labour per hectare increased between the two periods from Rs 134 to Rs 261 in Punjab, from Rs 123 to Rs 236 in Haryana, from Rs 59 to Rs 154 in Uttar Pradesh, from Rs 98 to Rs 125 in Rajasthan and from Rs 29 to Rs 32 in Madhya Pradesh, at 1974-75 prices. For all the five states put together, on an average, it increased from Rs 89 to Rs 162, marking an increase of 82 per cent.

The application of fertilizer, one of the major inputs, has gone up in all the states between the two periods. The fertilizer use intensity, on an average has gone up by 80 per cent, i.e., from 54.12 to 97.66 kg per hectare. The inter-state variation continues to be high and the level which ranged from 25.80 kg in Madhya Pradesh to 99.35 kg in Punjab in the first period, respectively, increased to 33.39 kg and 170.86 kg by the second period. In absolute terms, the highest increase of 97.20 kg of fertilizer observed in Haryana was 227 per cent higher than an increase of 9 per cent recorded by Madhya Pradesh. A comparison of state-wise levels of yield given in Table 3.1, and that of fertilizer consumption given in Table 3.3, indicate a close association between the yield levels and fertilizer use intensity and their corresponding changes.

Due to increased investment in capital inputs, the interest on fixed capital on an average has gone up between the two periods by 22 per cent, i.e., from Rs 152.15 to Rs 184.95 per hectare. It shows an increase in Punjab, Haryana and Madhya Pradesh. In Uttar Pradesh and Rajasthan, it however declined by 31 and 5 per cent, respectively.

The above discussion clearly brings out the fact that the input structure in wheat cultivation shows remarkable inter-state variations. There is strong evidence of human labour and bullock labour being substituted by labour-saving inputs. Of all the factors, productivity changes are best explained by application of fertilizer. The findings indicate that technological change differ across the states and is cost saving. Due to technological change, the unit yield increased by 21 per cent and cost of production declined by 18 per cent. Keeping pace with the technological change, the demand for machine labour witnessed an increase of 82 per cent, fertilizer by 80 per cent and capital inputs by 22 per cent. The net income on an average also increased by 94 per cent.

The analysis of the cost structure of wheat production for the two periods shows that there exists a considerable scope for reducing the unit cost of production of wheat. The per quintal cost estimates based on A_2+FL (family labour) concept, i.e., total cost excluding the proportionate share of rental value of owned land and interest on fixed capital, for the first period when compared with the corresponding estimates for the second period, at 1974-75 prices, shows a decline of about 35 per cent in Rajasthan, 30 per cent in Uttar Pradesh, 13 per cent each in Haryana and Madhya Pradesh and 11 per cent in Punjab. (For explanation and details of the concept see Annexure 'A'.) The average of all the five states exhibited a decline of about 21 per cent in the cost of production estimates. Such costs, however, vary annually and are influenced by the weather, apart from technological and entrepreneurial ability.

This remarkable production performance can be attributed to the ability of the farm economy as a system to diffuse technological progress and to the intensity of input application with changing economic signals. In a large measure, market infrastructure and research support provide the back up for the strength of the farm economy. While comparing the level of costs in the low productivity states like Madhya Pradesh with those of high productivity states like Punjab and Haryana, one finds that the costs of production are higher in Madhya Pradesh. This indicates that the yield differential in high productivity states more than compensates for the increased cost of cultivation resulting from the intensity of input use. This raises the pertinent question as to whether some of the material inputs necessary for high productivity could not be more profitability used as well directed to low productivity areas where substantial increases in output can be expected to take place at the margin.

ECONOMIC EFFICIENCY

The economic efficiency of a farm is generally attributed to the entrepreneurial ability of the cultivator in carrying out various farm activities with a view to maximizing production and profit. Farming activity to be efficient depends more on how and when the inputs are gathered and applied rather than just how much of them are applied for crop production. An efficient farmer requires a specific combination of inputs in appropriate quantities for proper and timely application in the cultivation of a crop for maximising the level of output and profit. On the other hand, an inefficient farmer may use more inputs to achieve the given level of production through its untimely and disproportionate application. While the technical (production) efficiency implies attainment of maximum production from the given package of practices, the allocative (cost) efficiency refers to when factors of production are used in such a combination that leads to maximization of output at minimum cost. The farmer's efficiency depends more on his ability to gather quality inputs and apply them in timely and proper fashion. The entrepreneurial ability is linked with production efficiency because the managerial abilities of the farmer are reflected in the efficient use of factors of production which leads to higher production and return to investment. Thus, when the farmer succeeds in realising maximum output at minimum cost it leads him to the attainment of profit (economic) efficiency.

An attempt has been made in this section to assess the efficiency of input use, among differentiated groups of farmers on the basis of yield and estimates of cost of production of wheat for the states of Punjab, Haryana, Uttar Pradesh, Rajasthan and Madhya Pradesh estimated during mid-seventies and mid-eighties, making use of disaggregated data of sample farms as generated by the *Comprehensive Scheme for Studying the Cost of Cultivation/Production of Principal Crops in India*, as mentioned earlier. State-wise analysis has been carried out to study as to how the technical and allocative efficiencies are influenced by the technological change and entrepreneurial ability as reflected through the yield levels and allocation of resources leading to cost minimisation across the states. An attempt has also been made to estimate the returns to investment and the relative share of inputs in the cost of cultivation among the most and the least efficient farmers separately in each state so as to devise policy instrument for the efficient resource utilization and maximization of production at a lower unit cost.

Analytical Frame-Work

It has been established that the variations in adoption rates of the new agricultural technology are due to differences in the success of seeds of high yielding varieties (HYV) while the adoption of technology is guided by (i) adequate irrigation facilities, (ii) access to capital, (iii) price environment, etc. [Mellor, 1976]. This section also tries to examine whether the modern technology is economically efficient, and if there were any deficiencies in the system. As enunciated in the earlier paragraphs, the study addresses itself to test the differences in absolute and relative efficiency on the basis of the major variable inputs. As regards technical efficiency, it examines maximum output from the given package of practices. In the present analysis an accounting approach has been followed for studying different criteria of efficiency among differentiated group of farmers. Such analysis is expected to help in examining the desirability, or otherwise, of development of policies of the Government with a view to increasing the over-all efficiency of input use and that of the farms.

For the purpose of assessing technical (production) efficiency, all the sample wheat farms for each of the five states were arranged in descending order on the basis of their yield per hectare. The top 20 per cent and bottom 20 per cent farms were categorized as the most and the least efficient ones, respectively. As the level of yield per unit of area is a very good indicator to measure technical efficiency, the analysis which tries to study the input intensities of differentiated group of farmers, is expected to provide the extent to which the yield level could be raised.

In order to study the allocative (cost) efficiency, the sample farms were rearranged in descending order on the basis of per hectare cost of production (cost C_2). Here bottom 20 per cent with the lowest unit cost and top 20 per cent with the highest unit cost, were categorized as the most and the least cost efficient farms. It may however be noted that the unit cost of production is a good indicator for measuring cost efficiency as it helps in identifying cost minimizing input combinations, where most of the inputs are variable and some (land, etc.) are fixed [Sampath, 1979]. Further, by computing unit cost of production, the value of different factors of production that enters into the analysis helps in providing an insight in to resource allocation [Misra, 1993]. This is important, because the efficiency of resource use differs from one set of cost estimates to another set of estimates.

The difference in efficiency for any group of farmers may be due to technical and/or allocative efficiency. Notwithstanding these differences, the farmer's interest lies in maximizing his level of profit, i.e., return over the expenses incurred in the process of wheat cultivation. To achieve this goal, the farmer is required to use the package of inputs in such a combination that results in the maximization of output at the minimum of cost. The achievement of this profit (economic) efficiency, i.e., the joint attainment of both technical and cost efficiencies would largely depend upon the entrepreneurial ability of the farmer. In order to assess the economic efficiency, return over investment, i.e., gross value of output minus per hectare cost of cultivation, excluding interest on

fixed capital and rental value of owned land, - in other words all actual expenses in cash and kind incurred in production by farmer including the rent paid for leased-in-land and imputed value of family labour (cost A_2+FL), - of all sample farms were arranged in descending order according to their value. In this case, 20 per cent farmers with highest return were categorized as the most, and the 20 per cent with lowest return as the least, economically efficient farmers.

State-wise analysis has been attempted with a view to study as how the various criteria of efficiencies are influenced by the level of technology adoption, intensities of input use and variation in nature of resource endowments as well as the changing nature of constraints with the pace of developments in different states. In this context, it may be mentioned that among the important wheat growing states, Punjab and Haryana represent the category of high level of technology adoption. In these two states farmers, on an average, made larger investments for achieving higher levels of yield. The variation in yield levels in these two states is expected to be smaller than those states with lower degree of technology adoption. Uttar Pradesh belongs to that of medium level of technology adoption, while Rajasthan and Madhya Pradesh belong to the category of low level of technology adoption where yield variability is expected to be greater.

The above proposition may be valid among differentiated groups of farmers in each state, particularly when the efficiency is judged on the basis of yield levels reflecting the technological development, herein referred to as technical or production efficiency. For instance, it is expected that the variations in yield may be lower among the technically efficient farmers than those of the least efficient farmers. In the case of the most efficient farmers because of large scale adoption of technology, the farmers are supposed to have lower variations in yield than the least efficient group of farmers would have. But the position may be different in the states having lower scale of technology adoption.

Once the farmers have been differentiated on the basis of unit costs, the most efficient farmers may show lower variations not only in yield level, but also in the cost of production than the least efficient farmers. Farmers' response to variations in cost of production, however, may not be much different in the highly advanced and less advanced states for the reason that categorization of such farmers becomes a more homogeneous category by themselves.

As soon as the farmers start adopting the new technology such as fertilizers, seeds of high yielding varieties, irrigation, etc., it helps them to raise the productivity of resources. It also increases the scope of substitution of inputs having elastic supply with that of land, being inelastic in supply. This, quite often, results in high returns from resources as compared to their acquisition costs. In such a situation, the variations in the cost of production of even efficient farmers in less technologically developed states may turn out to be higher than those for efficient farmers of technologically developed states.

Farmers' decision to allocate resources are primarily guided by economic considerations, i.e., his motive to maximize output and profit from the available technology. Once the farmer achieves this objective through the joint achievement of technical and allocative efficiencies, he ends up in the achievement of profit efficiency. Under this situation the returns over expenses (cost A_2+FL) are expected to be highest for the most efficient farmers than those for the least efficient farmers because of the highest yield per unit of land and the lowest estimates of cost of cultivation due to judicious allocation of resources.

Technical Efficiency

The level of yield would depend upon the nature of the shift in the production function as well as the availability conditions for inputs. Depending upon the level of adoption of technology, intensity of input use, access to resources endowments, constraints and agro-climatic conditions, a great deal of variation in unit yield is noticeable among differentiated quintiles of farmers across the

states during both the periods of study in mid-seventies and mid-eighties. The farmers of Punjab belonging to the category of the most efficient sample holdings during the crop-season 1974-75 (Table 4.1A) realized an yield of 35.65 quintals in comparison to 18.39 quintals per hectare harvested by farmers of the least efficient category. It was possible for farmers of the most efficient category to realize 17.26 quintals of incremental yield from the same unit of land due to higher intensity of input use as reflected through additional application of 63 kg of fertilizers, 12 quintals of organic fertilizer and an extra expense of Rs 12 on irrigation than those put in by the least efficient farmers. In realizing this incremental yield, the expenses on account of irrigation, fertilizers and seeds in the case of the most efficient group of farmers was higher by Rs 340 in comparison to that by the least efficient group of farmers. By 1984-85, the most efficient category of farmers of sample holdings were able to further push up their yield to an average level of 47.02 quintals as against 23.72 quintals per hectare produced by the least efficient category of farmers. This 23.30 quintals increase in unit yield as realized by the most efficient group of farmers came largely due to additional use of 64 kg of fertilizers and increased expenditure of Rs 38 on irrigation in comparison to those put in by the farmers belonging to the least efficient category. The additional investment in irrigation, fertilizers and seeds by the farmers of the most efficient quintile, was Rs 301 more than that put in by farmers of the least efficient group.

The farmers belonging to the most efficient category of sample holdings of Haryana, another progressive state of India, realized (Table 4.1B) an yield of 28.02 quintals in comparison to an yield of 14.93 quintals per hectare harvested by farmers of the least efficient category during 1974-75. The farmers of the most efficient quintiles could realize an incremental yield of 13.09 quintals from one hectare of land as a result of additional application of about 13 kg of fertilizer and two quintals of organic fertilizers as well as through an added expenses of Rs 128 on irrigation relative to farmers of the least efficient quintiles. In realizing this incremental yield, farmers of the most efficient category incurred an additional expense of Rs 207 on irrigation, fertilizers and seeds in relation to that put in by the least efficient farmers. By 1984-85, the yield of the most efficient category of farmers increased and averaged at 34.66 quintals in contrast to 17.40 quintals per hectare realized by farmers of least efficient category. Despite lower expenses of Rs 67 on irrigation, farmers of most efficient quintile could realize an additional yield of 17.26 quintals from one hectare of land primarily due to about 31 kg additional application of fertilizers in comparison to those by the least efficient category of farmers. The additional expenses on irrigation, fertilizers and seeds by the most efficient farmers on an average worked out to be Rs 590 more than those incurred by the category of least efficient farmers.

In Uttar Pradesh, the farmers belonging to the most efficient quintile of sample farms (Table 4.1C) harvested 35.54 quintals of wheat in comparison to only 14.92 quintals per hectare by farmers of the least efficient category during 1974-75. This realization of 20.62 quintals of higher yield by the most efficient category of farmers of the state was largely made possible by increasing the intensities of input use as reflected through, among others, by additional use of about 23 kg of fertilizers, 13 quintals of organic fertilizer and extra investment of Rs 14 on irrigation. The efficient category of farmers, on an average, incurred an additional expense of Rs 209 on irrigation, fertilizers and seeds. Although the average yield in the state increased by 7.03 quintals per hectare during 1984-85 over that in 1975-76, yet the yield levels, both for the most efficient and the least efficient farmers of sample holdings, during 1984-85 worked out to be lower than those realised during 1975-76. The explanation for this behaviour lies in the fact that the sample holdings, as also the sampling design for the two points of time, are not comparable. During 1984-85, the yield of the most efficient category of farmers at 35.00 quintals was 182 per cent higher than 12.42 quintals realized by the least efficient farmers. Among other factors, this higher realization in yield came largely through an additional expenditure of Rs 476 on irrigation, fertilizers and seeds which is inclusive of 140 per cent additional expense on irrigation and about

53 kg extra application of fertilizers than those incurred by the farmers belonging to the least efficient category.

The level of yield exhibited a great deal of variation in Rajasthan (Table 4.1D) between the most and the least efficient quintiles both during 1974-75 and 1984-85. In 1974-75, the farmers belonging to the most efficient category of sample holdings had an average yield of 36.92 quintals in comparison to an yield of only 9.36 quintals per hectare obtained by the farmers of the least efficient category. Despite 38 per cent lower expenses on irrigation, the most efficient farmers could realize a higher yield of 27.56 quintals, among other things, by the application of additional fertilizer of about 42 kg and 32 quintals of organic fertilizer than those put in by farmers of the least efficient category. The most efficient category of farmers incurred an additional expenditure of Rs 128 on irrigation, fertilizers and seeds and succeeded in harvesting higher yield than the least efficient category of farmers. As in the case of Uttar Pradesh, the average yield of Rajasthan for the year 1984-85 increased by 3.45 quintals per hectare over that of 1974-75. But due to change in sampling design and sample holdings, the average yield, both for the most efficient and the least efficient category of farmers, worked out to be lower in 1984-85 than that in 1974-75. During 1984-85, farmers of the most efficient category realized an yield of 34.71 quintals in comparison to only 8.03 quintals per hectare obtained by farmers of the least efficient quintiles. The additional yield of 26.68 quintals could be achieved, among other things, by investing Rs 117 more on irrigation, fertilizers and seeds which is inclusive of additional application of fertilizer by about 41 kg than those put in by the least efficient farmers.

In Madhya Pradesh the disaggregated data (Table 4.1E) relating to cost estimate for the seventies is available only for the year 1970-71, when the adoption of new technology for wheat cultivation in the state was in its early stages. The holding-wise data, as available for 1970-71, reveal that the average yield of farmers belonging to the most efficient category of sample holding was 12.87 quintals in comparison to only 3.60 quintals per hectare for the least efficient farmers. The farmers of the most efficient category of the state relatively could get 9.27 quintals of more yield, by making an additional investment of Rs 51 on irrigation, fertilizers and seeds, which is inclusive of 57 per cent additional expenditure on critical inputs like plant nutrients, irrigation and seeds than those put in by the least efficient farmers. With further diffusion of technology, the sample holdings of the state belonging to the category of most efficient farmers could realize an yield of 25.05 quintals in comparison to an yield of only 6.69 quintals harvested by the least efficient farmers during the year 1984-85. This realization of higher yield of 18.36 quintals by the most efficient category of farmers was made possible by additional investment of Rs 746 on critical inputs like seed, water and plant nutrients than those put in by least efficient ones.

A study of the above analysis of yield and cost of cultivation (Cost C_2) pertaining to production efficient farmers suggests that the sample holdings belonging to the most efficient category of farmers in comparison to the least efficient category of farmers across the states (Table 4.4) were able to obtain an incremental yield ranging from 9.27 to 27.56 quintal per hectare between them at an additional investment of Rs 180 to Rs 1,138 in the respective cost of cultivation during the mid-seventies. During the mid-eighties, the most yield efficient farmers realised between 17.26 and 26.68 quintals higher yield by incurring higher investment between Rs 602 and Rs 1,565 in the respective cost of cultivation per hectare in comparison to those for the least efficient farmers. Despite the additional investment, the cost of production of wheat of most efficient farmers across the states worked out to be lower between Rs 20 and Rs 126 per quintal during the mid-seventies and between Rs 33 and Rs 109 per quintal during the mid-eighties owing to incremental yield recording a higher rate of increase than those of the inefficient group of farmers. During both the periods, the average fertilizer use was significantly different between the quintiles, so was the operational costs, fixed costs and total cost of cultivation. Similarly, the cost of machine labour, irrigation and investment on fixed capital was generally more on farms having higher yield. The per hectare incremental

cost between the most efficient and the least efficient quintiles needs to be seen against the per hectare incremental yield between the two quintiles. The inter-state variability in yield may also be due to agro-climatic potential of the state, spatial variation in nature of resource endowments as well as the changing nature of constraints with the pace of development. The variation in yield within a state suggests that the farmers having relatively poor access to inputs, extension information and credit were slow in adopting new technology. However, the analysis provides an insight to the potential that exists of the available technology in pushing up the yield levels of wheat at much lower cost of production via increasing the intensity of input use and achieving a higher rate of increase in the per hectare yield.

Cost Efficiency

Similar to the yield efficient holdings, the estimates of cost of production of cost efficient holdings exhibited a great deal of inter-state variations depending upon the input intensities, access to infrastructural facilities and agro-climatic conditions during both the period of study. Even within a state, the estimates of cost of production exhibited wide variation from one quintile to another.

The average cost of production for the most efficient farmers of sample holdings of Punjab (Table 4.2A) was estimated at Rs 68.74 per quintal than the estimated cost of Rs 111.69 per quintal for the least efficient farmer during the crop season of 1974-75. The yield of the most efficient farmers on an average was as high as 28.57 quintals in comparison to 21.41 quintals per hectare achieved by the least efficient ones. The additional expenses by the most efficient group of farmers on seeds, water and plant nutrients, the yield augmenting inputs, was also lower by Rs 210 than that by the least efficient group during the period. For the period 1984-85, the average cost for the most efficient category of farmers estimated at Rs 88.06 per quintal was lower than the estimated cost of Rs 148.17 per quintal for the least efficient sample farmers. In this case, the cost efficiency was achieved both by pushing up the yield level to 40.40 quintals per hectare than the realised yield of 25.56 quintals by the least efficient farmers and also through the judicious use of inputs like seed, water and plant nutrients. The additional investment on these inputs in the case of most cost efficient farmers was Rs 284 lower than that by the least efficient category of farmers. The above analysis of yield and cost structure for both the periods shows as to how, through the judicious allocation of resources, cost efficiency can be achieved and yield levels be pushed up.

In another progressive state Haryana, the average cost of production for the most efficient farmers (Table 4.2B) estimated at Rs 60.08 was lower than the estimated cost of Rs 122.00 per quintal for the least efficient category of farmers for the year 1974-75. This cost minimisation could be achieved as the most efficient farmers were able to harvest an average yield of 26.21 quintals of wheat from one hectare of land in comparison to 16.84 quintals realised by the least efficient farmers. The additional expenditure on inputs like seed, water and plant nutrients by the efficient group was lower by Rs 182 in comparison to the least efficient group. In 1984-85, the cost estimates of the most efficient farmers of sample holdings at Rs 79.03 per quintal worked out to be lower than the estimated cost of Rs 191.88 per quintal for the least efficient farmers. The achievement of this cost efficiency was made possible as the farmers of the most efficient group made a lower investment of Rs 476 on seed, water and plant nutrients and realised an yield of 31.58 quintal per hectare, in comparison to the least efficient farmers harvesting only 20.84 quintals of grain.

The average cost estimate of the most efficient farmers relating to sample holdings of Uttar Pradesh (Table 4.2C) for the year 1975-76 at Rs 64.81 was lower than that of the least efficient farmers, being estimated at Rs 148.39 per quintal. The investment by the farmers belonging to the most efficient category harvesting an average yield of 27.67 quintals on critical inputs like seed, water and plant nutrients was however higher by Rs 32 in comparison to that incurred by the least efficient farmers realising an average yield of only 15.13 quintals per hectare. During 1984-85, the cost of the most efficient farmers, estimated

at Rs 80.50 per quintal, was lower than the estimated cost of Rs 185.46 for the least efficient farmers. The investment by the most efficient farmers with average yield of 29.92 quintals (as compared to 14.72 quintals per hectare by the least efficient farmers) on critical inputs like seed, water and plant nutrients was lower by Rs 186 in comparison to that incurred on these inputs by the least cost efficient farmers.

The cost of production of sample holdings in Rajasthan belonging to the category of most efficient farmers (Table 4.2D) in 1974-75 estimated at Rs 71.13 per quintal was lower than the estimated cost of Rs 254.73 for the least efficient farmers. In this case, the most efficient farmers were able to achieve cost efficiency owing to the realization of an yield of 26.87 quintals, which happened to be higher than the yield of only 8.85 quintals per hectare harvested by the least efficient farmers and the investment by the farmers of the most efficient category in yield raising inputs like irrigation, fertilizers and seeds on per hectare basis was Rs 338 lower than that incurred by the least efficient farmers. In 1984-85, i.e., after a decade, the average cost estimate of the most efficient farmers at Rs 72.34 per quintal worked out to be lower than the estimated cost of Rs 240.33 by the least efficient farmers. In bringing about this cost efficiency the most efficient farmers were able to realize an yield of 29.44 quintals as against 11.08 quintals by the least efficient farmers. The investment by the farmers belonging to the most efficient category on seed, water and plant nutrients, however worked out to be lower by Rs 602 per hectare than that incurred by the least efficient category.

The available data relating to 1970-71 for Madhya Pradesh show that the estimated cost of the most efficient farmers (Table 4.2E) at Rs 26.67 worked out to be lower than the estimated cost of Rs 93.44 per quintal for the least efficient farmers. The per hectare yield level of 9.52 quintals realised by the most efficient category of farmers of the sample holdings of the state was 4.87 quintals higher than that of the least efficient category of farmers. It is interesting to note that higher yield with lower cost of production achieved by the cost efficient category of farmers was made possible with a lower investment of Rs 9 on critical inputs like seed, water and fertilizers in comparison to that by the farmers of the least efficient category. In 1984-85, the farmers of the most efficient category of sample holdings produced wheat at an estimated cost of Rs 74.78, which was lower than the estimated cost of Rs 184.01 per quintal produced by the least efficient farmers. The cost efficiency was achieved due to harvesting 9 quintals of more grain from one hectare of land and by making investment on yield raising inputs like seed, water and fertilizers which worked to be Rs 344 lower than that incurred by the least cost efficient category of farmers.

The relationship between the estimates of cost of cultivation (Cost C_2) and yield (Table 4.5) of the cost efficient farmers suggests that the most cost efficient category of farmers of the five states, despite the lower investment between Rs 204 and Rs 432 on cost of cultivation, were able to realise an yield which between them was 4.87 to 18.02 quintals per hectare higher than those of the least efficient farmers during the seventies. In the eighties, the most cost efficient farmers between them were able to realise an yield between 9.00 to 18.36 quintals per hectare higher than the least efficient farmers. Their investment on cost of cultivation was also lower between Rs 446 and Rs 724 than those of the least efficient farmers. As a result of both, the higher yield and lower estimates of cost of cultivation, the corresponding cost of production (Cost C_2) relating to the most cost efficient farmers was lower between Rs 67 and Rs 184 per quintal during the seventies and between Rs 109 and Rs 168 per quintal during the eighties than those of the least efficient farmers. It is appropriate to examine the cost efficiency in the light of the differences in yield and the extent of resource use by the farmers in different quintals in the five states. The role of spatial variation in the nature of resource endowments and agro-climatic potential across the states is also important in explaining the difference in the ladder of efficiency. However, the analysis provides an insight into the potential that exists of the available technology of wheat cultivation in pushing up the yield through efficient allocation of resources. A comparison of data relating to input costs and yield at household

level with proper categorisation suggests that once farmers succeed in getting the yield raised at sufficiently high level through efficient use of resources which helps him in cost minimisation relative to others, it results in making him cost efficient.

Profit Efficiency

Attainment of technical efficiency or cost efficiency in isolation does not lead to profit maximization. In fact, when a farmer tries to maximize his production at a much lower cost of output relative to others, he succeeds in maximizing his profit or achieving profit efficiency. Depending upon his entrepreneurial capabilities, nature of resource endowments and agro-climatic potential of the state, the level of profit is expected to exhibit inter-farm variations across the states.

The return to investment (gross value of output - cost A_2+FL) of the most efficient farmers of sample holdings of Punjab (Table 4.3A), on an average, worked out to be higher by Rs 1,599 per hectare than that of the least efficient farmers during 1974-75. It was possible for the most efficient farmers to achieve this economic efficiency through harvesting an incremental yield of 13.35 quintals per hectare by incurring an additional investment of Rs 26 on cost (A_2+FL) of cultivation than that of the least efficient farmers. The expenses of the most efficient category of farmers on seeds, water and plant nutrients were, however, lower by Rs 220 per hectare than those of the farmers of the least efficient category. In 1985-86, the return to investment of the most efficient category of farmers was higher by Rs 4,238 per hectare in comparison to the level of profit of the least efficient category of farmers. In this case the level of efficiency was achieved through pushing up the level of yield which was 20.04 quintals per hectare higher and incurring a lower investment of Rs 365 per hectare on the cost (A_2+FL) of cultivation, in comparison to the least efficient farmers. The total cost on seed, water and plant nutrients was, however, higher by Rs 87 than that for the least efficient category. The above analysis clearly shows as to how through judicious allocation of resources, it is possible to maximize the yield at a lower cost of cultivation, reduce the unit cost of production and maximize the levels of profit.

In Haryana, return to investment of the most efficient category of farmers in comparison to the least efficient farmers during 1974-75 (Table 4.3B) was higher, on an average, by Rs 2,398 per hectare. The farmers of most efficient category could achieve this efficiency through harvesting a higher yield of 9.79 quintals as well as by incurring a lower investment of Rs 496 per hectare on cost of cultivation on the basis of cost A_2+FL, in comparison to the farmers of the least efficient category. The expenses of the most efficient category of farmers on seeds, water and plant nutrients were also lower by Rs 175 than those incurred by the farmers of the least efficient category. The level of profit of the most efficient category of farmers increased to Rs 5,286 per hectare in 1984-85. The achievement of this return over investment was made possible through realization of an yield level which was higher by 13.38 quintal per hectare as well as through keeping down the cost of cultivation per hectare, which on the basis of cost A_2+FL was lower by Rs 995 in comparison to that of the least efficient category of farmers. The expenses on seeds, water and plant nutrients put together were also lower by Rs 298 than those put in by the least profit efficient farmers.

During 1975-76, the return over investment of the most efficient category of farmers of Uttar Pradesh (Table 4.3C), in relation to that of the least efficient category, was higher, on an average, by Rs 2,678 per hectare due to realization of 19.14 quintals of additional yield and a lower investment of Rs 198 on cost of cultivation on the basis of cost A_2+FL. The expenses on inputs like seeds, water and plant nutrients were, however, higher by Rs 115 than those incurred by the farmers of the least efficient category. During 1984-85, the profit level of farmers of the most efficient category was higher by Rs 3,809 per hectare, in relation to the profit earned by the farmers of least efficient category, due to per hectare yield being 18.11 quintals higher and the cost of cultivation on the basis of cost A_2+FL being lower by Rs 274. The average expenditure incurred on inputs like seeds, water and plant

nutrients by the farmers of the most efficient category were, however, higher by only Rs 6, in relation to those incurred by the least efficient category of farmers.

In respect of farmers of the most efficient category of Rajasthan, the level of profit during 1974-75 (Table 4.3D) was higher by Rs 4,395 per hectare, in comparison to that of the least efficient category of farmers. The higher profit was made possible due to harvesting of a crop which, on an average, was 26.41 quintals per hectare higher and was realised through incurring an additional investment of Rs 312 on cost of cultivation on the basis of cost A_2+FL than that by the farmers of the least efficient category. The expenses of the most efficient category of farmers on inputs like seeds, water and plant nutrients put together were also higher by Rs 255 per hectare than those by the least efficient category of farmers. In 1984-85, the level of profit of the most efficient category of farmers, in relation to the least efficient category of farmers, was higher by Rs 5,917 per hectare due to the level of yield being higher by 20.58 quintals and the cost of cultivation on the basis of cost A_2+FL being lower by Rs 866. The expenses in respect of seeds, water and plant nutrients put together for most efficient farmers were also lower by Rs 473 than those put in by the least efficient category of farmers.

The available data relating to Madhya Pradesh for the year 1970-71 (Table 4.3E) show that the average profit of farmers of the most efficient category was higher by Rs 795 per hectare, in comparison to that of the farmers of the least efficient category. This profit efficiency was made possible due to the achievement of an yield which was higher by 7.71 quintals per hectare and cost of cultivation on the basis of cost A_2+FL being lower by Rs 72. The cost on seeds, water and plant nutrients put together in respect of the most efficient farmers was, however, higher by only Rs 12 than those put in by the least efficient farmers. In 1984-85, the profit of farmers of the most efficient category of sample holdings was Rs 3,405 per hectare higher than those of the least efficient farmers, due to per hectare yield being higher by 15.14 quintals, despite the cost of cultivation on the basis of cost A_2+FL being higher by Rs 68 than those of the least efficient farmers. The expenses on seeds, water and plant nutrients put together in respect of the most efficient category of farmers were also higher by Rs 170 than those incurred by the farmers of the least efficient group.

The relationship between the cost of cultivation (cost A_2+FL) and yield data (Table 4.6) across the five states suggests that investment of the farmers of the sample holdings belonging to the most profit efficient category, in comparison to the least efficient farmers, ranged from as low as Rs 496 to as high as Rs 292, whereas the corresponding yield was higher in the range of 9.79 and 26.41 quintals per hectare during the seventies. In the eighties, the cost of cultivation (A_2+FL) of the most profit efficient farmers varied from as low as Rs 995 to as high as Rs 68, whereas the corresponding yield was higher between 13.38 and 15.14 quintals, in comparison to least efficient farmers across the states. Owing to general increase in the level of yields and decline in cost A_2+FL in respect of the most efficient category of farmers, the returns over investment ranged between Rs 796 and Rs 4,395 during the seventies and between Rs 3,405 and Rs 5,917 during the eighties. The percentage rate of return over investment (A_2+FL) (Table 4.7) during the mid-seventies in respect of the most efficient farmers was 250 in Haryana followed by 226 in Rajasthan, 208 in Madhya Pradesh, 135 in Punjab and 132 in Uttar Pradesh. During the mid-eighties, the percentage rate of return was found to be the highest at 275 in Madhya Pradesh followed by 240 each in Rajasthan and Haryana, 187 in Punjab and 182 in Uttar Pradesh. The above analysis clearly brings out the fact that there existed enough scope for maximising returns over investment through increasing the levels of yield and reducing the cost of cultivation by efficient use of resources. It is, therefore, essential to create favourable conditions to the extent possible with a view to harnessing the production potential that exists of the available technology, as well as substantially increasing the levels of profit of the wheat farmers of India.

Coefficient of Variation

In respect of technically efficient farmers (Table 4.8), the coefficient of variation in yield among the most efficient farmers was higher than those for the least efficient farmers in the states of Uttar Pradesh, Rajasthan and Madhya Pradesh, where the adoption of the new technology of wheat cultivation had been at lower levels during the seventies. In the case of Punjab and Haryana, where adoption of the new technology was at a higher level and irrigation infrastructure was better developed, the variations in yield among the most efficient group of farmers were lower than those for the least efficient group. Due to the changing nature of constraints on the pace of development and further diffusion of technology, the coefficient of variations in yield among the farmers of the most efficient category became lower than those for the least efficient farmers in all the states during the eighties. This was obviously due to the fact that farmers of the most efficient category, being more conscious of technological development, made serious efforts to adopt full package of inputs for maximizing yield and as such formed a more homogeneous category.

In the case of cost efficient farmers (Tables 4.9), the coefficient of variation in the per unit cost of production among the most efficient category of farmers of Punjab and Haryana was lower, whereas in Uttar Pradesh, Rajasthan and Madhya Pradesh it was higher than that for the least efficient farmers during the seventies. In the eighties, the most efficient farmers of all the five states had higher coefficient of variations in the per unit cost of production than the least efficient farmers. This was obviously due to the fact that farmers of the most efficient category, being cost conscious tried to make serious efforts in reducing the cost of production.

The coefficient of variation in return to investment (Table 4.10), in the case of profit efficient farmers, both during the seventies and the eighties, was lower among the most efficient farmers, in comparison to the farmers belonging to the least efficient category. It was lower among the progressive states of Punjab and Haryana, in comparison to the other three states. With the progressive adoption of technology, the coefficient of variation of profit has tended to narrow down, implying thereby that efficient farmers belonging to progressive states made serious efforts to maximize the return over investment and thus tried to form a homogeneous group by themselves.

Cost of Production

During the mid-seventies, the most yield efficient farmers of Rajasthan, after having incurred an additional cost of Rs 1,138 on the cost of cultivation (Cost C_2), were able to realise an incremental yield of 27.56 quintals per hectare, in comparison to that realized by the least efficient farmers. The cost of production for the farmers of the most efficient group worked out at Rs 80.12, in comparison to the estimated cost of Rs 206.11 per quintal for the least efficient group of farmers. In the case of Uttar Pradesh and Punjab, the most efficient farmers obtained an incremental yield of 20.62 quintals and 17.26 quintals through an additional investment of Rs 871 and Rs 1,093, respectively, on cost of cultivation per hectare in relation to the least efficient farmers. The cost of production for the most efficient group of farmers, worked out at Rs 74.38 and Rs 82.59 per quintal for Uttar Pradesh and Punjab, was lower, in comparison to the respective cost of Rs 137.96 and Rs 102.67 per quintal estimated for the least efficient group. In the case of Haryana and Madhya Pradesh, the increase in yield per hectare among the most yield efficient farmers had been only 13.09 and 9.27 quintals, respectively, in comparison to that for the least efficient farmers. While the incremental cost of cultivation per hectare of the most yield efficient farmers over that for the least efficient farmers had been higher by Rs 608 in Haryana, it was only Rs 180 in the case of Madhya Pradesh. In the case of Haryana, the cost of production of the most efficient group worked out at Rs 74.49 which was lower than the estimated cost of Rs 104.89 per quintal for the least efficient group. Whereas for Madhya Pradesh, the estimated cost for the most efficient

group at Rs 35.75 was lower than the estimated cost of Rs 81.41 per quintal for the least efficient group of farmers.

Due to further increase in intensities of input use, the per hectare yield differentials between the most efficient and the least yield efficient group of farmers of Rajasthan worked out to 26.68 quintals at an estimated incremental cost of cultivation (cost C_2) of Rs 1,565 per hectare during the mid-eighties. The cost of production for the farmers of the most efficient group of Rajasthan was estimated at Rs 84.35 which was lower in comparison to the estimated cost of Rs 193.47 per quintal for the least efficient group. In the case of Uttar Pradesh, while the differential in yield and cost of cultivation was 22.58 quintals and Rs 1,377 per hectare, respectively, the cost of production for the most efficient group of farmers was estimated at Rs 94.44 which was lower in comparison to the cost of Rs 170.87 per quintal for the least efficient category of farmers. For Madhya Pradesh, while the differential in yield and cost of cultivation between the two groups of farmers was estimated at 18.36 quintal and Rs 1,747 per hectare, the cost of production estimates for the most efficient group of farmers, estimated at Rs 93.88 was lower than Rs 152.37 per quintal, estimated for the least efficient group of farmers. In so far as Punjab is concerned, the yield and cost of cultivation differential between the most and the least efficient group of farmers for the mid-eighties worked out to 23.30 quintals and Rs 1,697 per hectare, respectively, whereas the estimates of cost of production for the most efficient farmers stood at Rs 99.26, which was lower than that for the least efficient ones, being estimated at Rs 132.07 per quintal. Similarly, in respect of Haryana, while the respective differentials were 17.26 quintals and Rs 602 per hectare, the cost estimate for the most efficient group of farmers at Rs 96.06 worked out to be much lower than Rs 155.47 per quintal for the least efficient farmers.

The scenario becomes interesting when the cost of production estimates are judged on the basis of cost (allocative) efficiency. For the cost efficient farmers, who were able to minimize the cost of production per unit of produce, not only the cost of cultivation per hectare happened to be lower than those of the least efficient farmers, but the yield differentials also happened to be quite large. For instance, during the seventies, while the investment in the cost of cultivation of the most cost efficient farmers of Rajasthan and Madhya Pradesh was lower by Rs 432 and Rs 204, respectively, than those of the least efficient farmers, the incremental yield of 18.02 and 4.87 quintals per hectare, respectively, produced by the most efficient farmers, was higher than that harvested by the least efficient group. In the case of Haryana, the cost of cultivation per hectare of the most efficient farmers was lower by Rs 472, in comparison to that of the least efficient farmers, but the yield of the most efficient farmers was higher by 9.37 quintals. The situation in Punjab and Uttar Pradesh was no different, as the most cost efficient farmers had made a lower investment of Rs 471 and Rs 357, respectively, in the cost of cultivation than those of the least cost efficient farmers, but the incremental yield of the most cost efficient farmers at 7.16 and 12.54 quintals, respectively, was higher than those of the least efficient farmers.

With the increase in intensity of input use, the per hectare yield and cost of cultivation differentials between the most and the least efficient farmers became more widened by the mid-eighties. Although the cost of cultivation of the most cost efficient farmers of Rajasthan and Madhya Pradesh was lower by Rs 724 and Rs 446, respectively, than those of the least cost efficient farmers, yet the most efficient group of farmers were able to harvest a higher yield of 29.44 and 19.00 quintals, in comparison to that harvested by the least efficient farmers of these two states. The most cost efficient farmers of Uttar Pradesh, while making a lower investment of Rs 404 in the cost of cultivation, were able to realize a crop of 29.92 quintals per hectare, which was higher than 14.72 quintals harvested by the farmers of the least cost efficient group. In respect of Punjab and Haryana, although the investment of most cost efficient farmers in cost of cultivation was lower by Rs 300 and Rs 1,693, respectively, yet they succeeded in harvesting a higher crop of 40.40 and 31.58 quintals than that harvested by the least cost efficient group of farmers. As a consequence of cost minimisation and yield maximization, the cost of production for the farmers of the most cost

efficient group for Rajasthan, Madhya Pradesh, Uttar Pradesh, Punjab and Haryana, worked out lower at Rs 72.34, Rs 74.78, Rs 80.50, Rs 88.06 and Rs 79.03 per quintal, in comparison to the respective cost of production of Rs 240.33, Rs 184.01, Rs 185.46, Rs 148.17 and Rs 191.88 per quintal for the least efficient group of farmers.

The comparison of the cost of cultivation between the most and the least efficient farmers categorized on the basis of production and cost efficiency reveals interesting results. Once efficiency is defined on the basis of production, the relationship between estimates of cost of cultivation and yield exhibits a behaviour as expected, in the sense that both the yield and cost of cultivation were higher among the most efficient farmers than those of the least efficient farmers in all the states, as the yield efficient farmers made an effort to maximize their yield through increasing the intensity of input use. On the other hand, the efficiency when measured on the basis of cost efficiency, the cost efficient farmers were able to obtain higher yield with lower estimates of cost of cultivation, in comparison to the least efficient farmers in all the states. This suggests that the farmers of the most cost efficient category were able to exploit the yield potential of the existing technology at a higher level as well as minimize the cost of variable inputs through judicious allocation of resources, in comparison to the least cost efficient category of farmers. In case of profit efficiency, the most efficient farmers, through joint achievement of production and cost efficiency, were not only able to realize higher profit in comparison to the least profit efficient farmers, but were also able to obtain highest levels of profit. Return to investment needs to be given a thrust to act as a catalyst to private capital formation. It is important to harness the potential that exists of the available technology.

Productivity of Inputs

While examining the pattern of input use of the production efficient farmers (Table 4.4), one finds that the pattern of input use has been quite different across the states in both the periods. In the first period, while the differential in human labour absorption in respect of the most efficient category in comparison to the least efficient category was higher by 17.47 mandays in Madhya Pradesh followed by 9.19 in Punjab and 2.56 in Haryana, it was lower by 2.68 in Uttar Pradesh and by 18.98 mandays in Rajasthan. In the second period, the corresponding differentials were 25.74, 9.95, 7.61, 9.53 and 35.54 mandays. In fact, with the higher differentials in the yield, the labour absorption by the most efficient category of farmers relative to the least efficient farmers, on an average, exhibited an increase in all the states during the eighties, suggesting thereby that there exists close association between the level of yield and intensity of human labour use.

Like human labour, there is substantial inter-state variation in the case of bullock labour use also (Table 4.4). While the differential in bullock labour use in respect of the most efficient category, in comparison to the least yield efficient category, was higher during the first period by 7.20 pair days in Madhya Pradesh, it was lower by 1.53 in Uttar Pradesh, 2.59 in Punjab, 4.41 in Haryana and 14.12 pair days in Rajasthan. In the second period, while the differential in bullock labour use in favour of the most efficient category was lower by 0.01 pair days in Madhya Pradesh, 9.02 pair days in Uttar Pradesh and 1.17 pair days in Punjab, it was higher by 1.90 pair days in Haryana and 5.50 pair days in Rajasthan. The substantial reduction in the intensity of bullock labour use in Uttar Pradesh and Madhya Pradesh during the mid-eighties can be explained in terms of the most efficient farmers going in for higher degree of substitution of bullock labour by machine labour.

The level of fertilizer use among the five states happened to be the highest in Punjab during both the periods. The differential in respect of the most efficient category, as compared to the least efficient category, at 63.14 kg was the highest in Punjab, followed by 42.42 in Rajasthan, 23.37 in Uttar Pradesh, 12.66 in Haryana and 8.55 kg per hectare being the lowest in Madhya Pradesh during the first period. By the mid-eighties, the corresponding differential was 64.18, 40.57, 52.58, 31.43 and 76.72 kg. The inter-state variation continued to be high among the most production efficient categories, as the fertilizer

application in absolute quantity, on an average, during the mid-eighties varied from 204.66 kg in Punjab, 127.29 in Haryana, 111.56 kg in Uttar Pradesh, 95.91 kg in Madhya Pradesh to 48.43 kg in Rajasthan. The yield levels and level of fertilizer application indicate a close association between the yield levels and intensity of fertilizer use and their corresponding changes (Table 4.1A to 4.1E). At one extreme, were Rajasthan and Madhya Pradesh, where fertilizer application was at low levels and at the other, Punjab and Haryana, which had reached a high level of modernisation.

While the differential in machine labour cost in favour of the most efficient category than the least efficient category, was higher by Rs 154 in Rajasthan, it was lower by Rs 42 in Haryana during the first period and it varied from Rs 281 in Punjab to Rs 69 in Madhya Pradesh during the mid-eighties. From inter-state comparison, one finds (Table 4.4) that machine labour in general resulted in reducing the bullock labour intensity during the mid-seventies; at a later stage during the mid-eighties it helped in substituting human labour. The production efficient farmers of all the states, excepting Rajasthan and Madhya Pradesh, appeared to be in the second stage of development.

In respect of irrigation charges, while the differential in favour of the most efficient category over the least efficient category during the first period was higher by Rs 128 in Haryana, it was lower by Rs 121 in Rajasthan; during the mid-eighties, it was higher by Rs 334 in Madhya Pradesh and lower by Rs 67 in Haryana. In any case, the irrigation costs and their changes, as given in Tables 4.4, do not indicate a close positive association with the yield levels and the changes therein due to large scale inter-state variability in the source and quality of irrigation.

The foregoing analysis clearly reveals that there existed significant differences in the input structure between the most and the least efficient categories of farmers during both the periods and across the states. Depending upon the intensity of input use, the spatial variation in the nature of resource endowments, and changing nature of constraints on the pace of development, the productivity of inputs (Table 4.11) shows remarkable inter-state differences between the most and the least efficient categories of farmers during both the periods.

The pattern of input use in respect of cost efficient farmers had also been quite different across the states in both the periods. It may be seen from Table 4.4 that the investment in cost of cultivation (Cost C_2) by the most production efficient farmers of Punjab, Haryana, Uttar Pradesh, Rajasthan and Madhya Pradesh during the seventies was higher by about Rs 1,093, Rs 608, Rs 871, Rs 1,138 and Rs 180 per hectare, respectively, than those by the least efficient farmers. During the eighties, the production efficient farmers of these states invested in cost of cultivation, on per hectare basis, Rs 1,697, Rs 602, Rs 1,377, Rs 1,565 and Rs 1,747 more, respectively, than what the least efficient farmers did, in order to maximize yields. This is evident from the fact (Table 4.5) that the most cost efficient farmers of Punjab, Haryana, Uttar Pradesh, Rajasthan and Madhya Pradesh had made during the seventies a lower investment of about Rs 471, Rs 472, Rs 357, Rs 432 and Rs 204 per hectare on total cost of cultivation than that by the least cost efficient farmers. During the eighties, the most efficient farmers of these states made a lower investment of Rs 300, Rs 1,693, Rs 404, Rs 724 and Rs 446, respectively, on per hectare cost of cultivation than those by the least efficient farmers. The relative importance of cost of cultivation (Cost C_2) to the most cost efficient farmers than to the least efficient farmers in all the states, in a way, gave supportive evidence that it was not the total cost of cultivation, but the entrepreneurial ability that explained the difference in the ladder of efficiency on which different farmers stand.

While discussing the pattern of input use of the profit efficient farmers, one finds that the structure of input use has been quite different across the states in both the periods. In the first period, the differential in human labour absorption in respect of the most profit efficient farmers, in comparison to the least profit efficient farmers (Table 4.6), was lower by 21.08 mandays in Rajasthan, followed by 18.28 in Uttar Pradesh, 12.76 in Haryana, 8.33 in Punjab and 0.86 mandays in Madhya Pradesh. In the second period,

while the differentials were lower by 22.92 mandays in Rajasthan, 9.43 in Uttar Pradesh and 4.76 in Haryana, they were higher by 1.37 in Punjab and by 2.53 mandays in Madhya Pradesh.

Like human labour, there existed substantial inter-state variation in the case of bullock labour use (Table 4.6). The differential in bullock labour use in respect of the most profit efficient farmers, in comparison to the least profit efficient farmers, during the first period was lower by 22.28 pair days in Rajasthan, 7.42 in Uttar Pradesh, 6.67 in Punjab, 6.04 in Haryana and 1.23 pair days in Madhya Pradesh. In the second period, the corresponding use was lower by 10.11, 10.61, 3.73, 1.40 and 6.71 pair days, respectively.

In the case of fertilizer use, while the differential in respect of the most efficient category, in comparison to the least profit efficient farmers, during the first period, was higher by 36.26 kg in Rajasthan followed by 19.38 in Uttar Pradesh, 16.75 in Punjab, 0.82 in Madhya Pradesh, it was lower by 21.77 kg in Haryana. During the second period, while the differential was lower by 0.81 kg in Rajasthan, it was higher by 11.52 kg in Uttar Pradesh, 39.53 in Punjab, 43.29 in Madhya Pradesh and 0.82 kg in Haryana.

For machine labour, while the differential in respect of the most profit efficient farmers, in comparison to the least profit efficient farmers, was higher by Rs 166.59 in Rajasthan during the seventies, it was lower by Rs 117.88 in Haryana. In the second period, while the corresponding differential was higher by Rs 140.90 in Rajasthan, it was lower by Rs 524.92 in Haryana. Similarly, in the case of irrigation while the differential during the seventies was higher by Rs 14.56 in Punjab, it was lower by Rs 176.84 in Haryana. During the second period the differential was lower in all the states, ranging from Rs 1.15 in Uttar Pradesh to Rs 340.55 in Rajasthan.

Thus there existed wide inter-state variations in the structure of input use as also in its productivity (Table 4.11) during both the periods. The farmers belonging to the most efficient category during both the periods made efforts to maximize the levels of their profit through realizing higher level of yield and cutting down the cost of cultivation through judicious allocation of resources.

While comparing the relative cost structure of inputs, based on production efficiency and cost efficiency of the most efficient farmers, with those of the least efficient farmers, it may be seen that the relative structure of inputs differed much for both the measures of efficiency, among the most and the least efficient farmers. In their effort to maximize yield, the investment of the most production efficient farmers on total costs was higher between Rs 180 and Rs 1,138 per hectare, as compared to the least efficient farmers during the seventies. In the mid-eighties, the investment of the most yield efficient farmers, was higher between Rs 602 and Rs 1,747 per hectare on total cost, in comparison to the least efficient farmers. In respect of cost efficiency, the investment of the most efficient farmers during the seventies was lower between Rs 204 and Rs 472 per hectare and during the mid-eighties it was lower between Rs 300 and Rs 1,693 per hectare, in comparison to those of the cost inefficient farmers. While the investment of the farmers of the most profit efficient category, on the basis of cost A_2+FL, was higher by Rs 292 in Rajasthan during the seventies, it was lower by Rs 496 in Haryana. During the eighties, while it was higher by Rs 68 in Madhya Pradesh, the investment was lower by Rs 995 per hectare in Haryana, in comparison to the least profit efficient farmers.

While comparing the cost estimates and yield based on the technical efficiency, it may be seen (Table 4.12) that the most production efficient farmers, by making an additional investment between Rs 180 and Rs 1,138 on total cost of cultivation across the states during the seventies, were able to harvest an incremental output, which was between 9.27 and 27.56 quintals per hectare higher over that harvested by the least production efficient farmers. As a consequence of a much higher rate of increase in yield than the rate of investment in the cost of cultivation, the respective per unit cost of production of the most efficient farmers worked out to be lower between 56 and 61 per cent and the per hectare additional return to investment (gross value of output minus cost A_2+FL) was found to be between Rs 631 and Rs 4,239 higher, in comparison to those of the least production efficient farmers across the states. During the eighties, the most production

efficient farmers, through increasing the intensity of input use, incurred an additional expenditure on total cost of cultivation between Rs 602 and Rs 1,747 and realized an incremental yield between 17.26 and 18.36 quintals per hectare, in comparison to that of the least production efficient farmers. As a result of rate of increase in yield, exceeding the increased rate of investment in the cost of cultivation, the respective per unit cost of production turned out to be lower by 38 per cent and the profit was found to be higher between Rs 2,883 and Rs 3,177, in comparison to those of the least efficient farmers. The above analysis, and also the coefficients of input productivity as given in Table 10, clearly bring forth the scope of increasing the level of production and profit as well as reducing the per unit cost of production through increasing the intensity of input use and enhancing the efficiency of resource use.

In respect of cost efficiency, the most efficient farmers during the seventies, through judicious allocation of resources, were not only able to cut down the per hectare cost of cultivation between Rs 204 and Rs 472 but were also able to harvest a crop, which was between 4.87 and 9.37 quintals higher, in comparison to that of the least efficient farmers across the five states. As a result of lower estimates of cost of cultivation and higher levels of yield, the respective per unit cost of production turned out to be lower between 70 and 51 per cent and return to investment worked out to be higher between Rs 583 and Rs 2,318, in comparison to the levels of least cost efficient farmers. During the mid-eighties, the most cost efficient farmers, through judicious allocation of their resources, were able to cut down the per hectare cost of cultivation between Rs 300 and Rs 1,693 and yet realize a crop, which was between 14.84 and 10.74 quintals higher, in comparison to the levels of the least cost efficient farmers across the five states. As a consequence of lower estimates of cost of cultivation and increase in yield, the per unit cost of production turned out to be lower between 41 and 59 per cent and the respective returns to investment to be higher between Rs 3,104 and Rs 3,375 per hectare than those of the least efficient farmers. It is seen from the above analysis that there exists enough scope for substantially increasing the levels of yield and profit, minimizing the cost of cultivation as well as reducing the unit cost of production through judiciously deploying the factors of production.

As evidenced by the data (Table 4.12), the most profit efficient farmers during the seventies, in comparison to the least profit efficient farmers, incurred an expenditure on cost of cultivation, which was higher by Rs 1,107 in Rajasthan and lower by Rs 23 in Madhya Pradesh for raising a crop, which was higher by 26.41 and 7.71 quintals per hectare, respectively. As a consequence of the rate of increase in yield being higher than the rate of increase in the cost of cultivation, the respective per quintal cost of production turned out to be lower by 60 and 65 per cent and return to investment higher by Rs 4,395 and Rs 796 per hectare than those of the least efficient farmers. In the mid-eighties, the estimated cost of cultivation of the most efficient farmers in comparison to that of the least efficient farmers across the states was higher by Rs 732 in Punjab and lower by Rs 858 in Haryana and the respective increase in yield was 20.04 and 13.38 quintals per hectare. As a result of much higher increase in the yield than the rate of increase in the estimated cost of cultivation, the respective per unit cost of production turned out to be lower by 35 and 18 per cent and the level of profit to be higher by Rs 4,238 and Rs 5,286 per hectare than those for the least profit efficient farmers. The above analysis reveals that the joint achievement of production and cost efficiencies helps in maximization of yield, reduction in unit cost of production and increasing the levels of profit.

The foregoing analysis shows that there exists enough scope for increasing the levels of yield and reducing the unit cost of production; this is needed for making the grain available for mass consumption at cheaper prices and also to have comparative advantage in the international trade of the commodity. The achievement of higher yields at a lower unit cost of production would obviously lead to higher margin of profit, a necessity for the Indian farmers for generating surplus for investment and capital formation for future growth of their farm economy. The inter-state variations in the level of yield, unit cost and

levels of profit during both the periods were mainly attributable to spatial variations in the nature of resource endowments, agro-climatic potential of the states and uneven development of both, the potential and supply infrastructure. Even within a state, there were differences at the farm level in the diffusion of available technology of wheat cultivation and in the quality of seeds, water and plant nutrients. These farm level variations were primarily related to resource endowments of the households which influenced the access of the farm households to such complementary inputs as institutional credit and extension information as well as farmer's ability to bear the risk attached to the productivity of input use.

SUMMARY

The introduction of new seed-fertilizer-water technology for the cultivation of wheat during the mid-sixties, along with the development of rural infrastructure, helped India in realising large increases in yield levels. This apart, the positive price policy pursued by the Government which *inter-alia* provided an assurance to the farmer that the entire quantity of the produce would be purchased at the minimum support price. This assurance encouraged the farmers to make investment on the farm for the adoption of new technology of wheat cultivation. As a consequence of these developments, more so in areas endowed with assured irrigation facilities, the growth rate of production of wheat accelerated, thereby facilitating the country to gradually achieve a fair degree of self-sufficiency in the production of food grains. The benefits of the new technology could be achieved only by those farmers who were able to make the desired investment on their farms. This apart, efficient use of production inputs were also helpful in realising higher profitability from the given technology. In either case, higher productivity resulted in lowering the unit cost. Notwithstanding the rapid increase in the yield levels and expansion of output of wheat, the farmer's margin of profit has been on the decline, as the prices of farm inputs have been rising at a faster rate. Therefore, the continuous increase in the prices of farm inputs as well as rise in the minimum support price may not be of much help in generating the desired level of investable surpluses. It is, therefore, essential to reduce the cost of production through increasing the efficiency of resource use, for meeting the projected demand and also for higher incomes for the producers as well as for maintaining the comparative advantage in the exports of the commodity.

Inspite of the large increases in yield levels, the production potential of the existing high yielding varieties of wheat seeds remains unexploited. This is evidenced through the wide variations in the yield levels observed within a state. The differences in agro-climatic conditions, resource endowments and infrastructural development have been the major factors for the uneven rate of growth of production and productivity, across the states. An analysis of the growth performance relating to the past two decades reveals that there has been some deceleration in the growth of production of wheat during the eighties in comparison to that during the seventies. While during the seventies, the growth in production came primarily through the growth in area under the crop, it was the growth in yield that became the major source of growth in production during the eighties. Thus the production during the eighties decelerated due to slowing of growth in area under the crop. Given the relative price environment prevailing in the country, it is unlikely that any significant shift of area in favour of wheat would take place in the near future. Therefore, the additional production of wheat has obviously to come from the improvement of yield levels. Since the expansion of irrigated area and of higher levels of fertilizer use has mainly contributed to the diffusion of technology and resultant improvement in the levels of yield, it is important to create suitable conditions for the growth of yield.

Another aspect of the technological change in the production process of wheat cultivation relates to the undergoing structural change in the input mix. The analysis of the behaviour of the unit cost of production of wheat, undertaken for the mid-seventies and mid-eighties for the states of Punjab, Haryana, Uttar Pradesh, Rajasthan and Madhya Pradesh, reveals a declining trend at constant prices in all the states. Even when accounting for yield variability in different years,

the declining trend in real cost is significant. The above observation suggests the scope for bringing down the unit cost of production via improvement in per hectare yields as also for maximising the income, more so in the low productivity states. Although the area under mechanisation has been wider in the high productivity states of Punjab and Haryana, where small proportion of human and bullock labour is being employed, yet depending upon the degree of substitution of labour by capital, the resultant share of human and bullock labour, the two major components of operational cost, showed a general decline in all the states. Of all the factors, productivity changes are best explained by application of fertilizer. While comparing the level of costs in the low productivity states with those of the high productivity states, one finds that the costs of production are higher in low productivity states. This indicates that the yield differential in high productivity states more than compensates for the increased cost of cultivation resulting from the intensity of input use. This raises the pertinent question as to whether some of the yield-augmenting inputs could not be more profitably used, as well as directed to low productivity areas, where substantial increases in output can be expected to take place at the margin. What is intriguing is the high estimates of cost of production in Punjab than those for Haryana, despite the fact that the observed yield in the former state was significantly higher than that in the latter during the mid-eighties. In fact, the cost estimates in Punjab should have been lower due to wider diffusion of technology and higher level of yield. It seems that the diffusion of technology has reached a fairly high level in Punjab. The emerging implication is that the continued dependence on this state for future growth of wheat is likely to lead to greater pressures for higher price for the commodity.

An analysis of disaggregated data of the production efficient farmers reveals a great deal of variation in unit yield among the differentiated quintals of farmers across the states, during both the periods of study in the mid-seventies and mid-eighties. The variations in yield are indicative of the uneven development of potential and infrastructural support. The efficiency gap between the most efficient and the least efficient category suggests that the farmers having poor access to inputs, extension information and credit were slow in adopting the new technology. Once efficiency is defined on the basis of production, the relationship between estimates of cost of cultivation and yield exhibits a behaviour as expected in the sense, that both the yield and cost of cultivation were higher among the most efficient farmers than those of the least efficient farmers in all the states, as the production efficient farmers made an effort to maximise their yield through higher intensity of input use. The analysis provides an insight into the potential that exists for the new technology in pushing up the yield levels of wheat via increasing the intensity of input use and achieving a higher rate of increase in the per hectare yield.

Similar to production efficient farmers, the estimates of cost of production of cost efficient farmers exhibited a great deal of inter-state variations. Even within a state, the estimates of cost of production exhibited wide variation from one quintile to another quintile. The relationship between the estimates of cost of cultivation and yield of the cost efficient farmers suggests that the most efficient category of farmers of the five states, despite much lower investment on cost of cultivation, were able to realise an yield which was considerably higher than those of the least efficient category of farmers during both the periods. The efficiency, when measured on the basis of cost efficiency, the cost efficient farmers were able to obtain higher yield with lower estimates of cost of production, in comparison to the least efficient farmers in all the states. This suggests that the farmers of the most cost efficient category were able to exploit the yield potential of the new technology at a higher level as well as to minimise the cost of production through judicious allocation of resources, in comparison to the least efficient category of farmers.

Attainment of technical efficiency or cost efficiency in insolation does not lead to profit maximisation. In fact, when a farmer tries to maximise his output at a much lower cost of production, relative to others, he succeeds in maximising his profit or achieving profit efficiency. The most efficient category of farmers, through joint achievement of production and cost efficiency, were not only able to realise higher profits in

comparison to the least profit efficient farmers, but were also able to obtain highest levels of profit. An analysis of the disaggregated data of the profit efficient farmers exhibited inter-farm variations across the states, suggesting that there existed higher scope for increasing the levels of yield and reducing the cost of cultivation through efficient use of resources. It is, therefore, essential to create favourable conditions for harnessing the potential that exists of the available technology, as well as for substantially increasing the levels of profit of the Indian wheat farmers.

The achievement of higher yield at lower unit cost of cultivation would obviously lead to higher margin of profit, which is very much required for generation of investable surplus and capital formation for future growth of the farm economy. The farm level variations are primarily related to resource endowments of the households which influence the access of the farm households to such complementary inputs as institutional credit and extension information as well as farmer's ability to bear risk attached to the productivity of input use.

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TABLE 2.1. WHEAT: AREA, PRODUCTION AND YIELD

Area: '000 Hectares
Production: '000 Tonnes
Yield: Kg/Hectare

State		1966-67	1967-68	1968-69	1976-77	1977-78	1978-79	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92
Bihar	Area	809	1,054	1,095	1,945	1,847	1,806	1,840	2,116	2,112	1,988	1,965	1,963
	Production	365	914	1,259	2,470	2,294	2,502	2,861	3,257	3,557	3,270	3,560	3,566
	Yield	451	867	1,150	1,270	1,242	1,385	1,555	1,539	1,684	1,645	1,812	1,816
Gujarat	Area	461	553	503	727	684	620	315	192	649	619	717	409
	Production	457	700	621	1,072	1,221	1,192	662	351	1,513	1,102	1,444	906
	Yield	992	1,266	1,235	1,475	1,785	1,923	2,102	1,828	2,331	1,780	2,014	2,214
Haryana	Area	738	845	895	1,348	1,360	1,482	1,782	1,731	1,827	1,859	1,850	1,808
	Production	1,054	1,466	1,522	2,735	2,845	3,398	5,055	4,861	6,225	5,913	6,440	6,502
	Yield	1,428	1,735	1,701	2,029	2,092	2,293	2,837	2,808	3,407	3,181	3,481	3,596
Himachal Pradesh	Area	269	311	313	289	318	329	372	375	373	371	376	378
	Production	250	262	259	208	378	398	451	351	513	544	602	596
	Yield	930	842	827	720	1,189	1,210	1,212	936	1,375	1,467	1,599	1,576
Jammu & Kashmir	Area	161	187	200	186	190	207	238	243	243	226	245	245
	Production	112	142	210	157	186	204	212	246	246	262	297	297
	Yield	696	759	1,050	844	979	986	891	1,012	1,012	1,159	1,214	1,214
Karnataka	Area	298	305	310	366	379	389	271	267	238	248	198	203
	Production	47	133	160	233	231	264	142	141	166	89	125	144
	Yield	158	436	516	637	609	679	524	528	697	360	630	712
Madhya Pradesh	Area	2,130	2,661	3,056	3,144	3,554	3,778	3,502	3,667	3,667	3,284	3,834	3,267
	Production	1,031	1,882	2,008	2,308	3,102	3,523	4,264	4,546	4,797	4,120	5,833	4,673
	Yield	484	707	657	734	873	933	1,218	1,240	1,308	1,255	1,521	1,430
Maharashtra	Area	876	891	873	1,188	1,215	1,187	736	733	879	842	873	628
	Production	367	360	428	938	962	951	536	633	1,043	907	919	626
	Yield	418	404	490	790	792	801	728	864	1,187	1,077	1,052	997
Punjab	Area	1,615	1,804	2,086	2,579	2,617	2,736	3,189	3,131	3,158	3,251	3,272	3,233
	Production	2,494	3,352	4,520	6,272	6,642	7,423	9,458	11,084	11,580	11,681	12,155	12,295
	Yield	1,544	1,858	2,167	2,432	2,538	2,713	2,966	3,540	3,667	3,593	3,715	3,803
Rajasthan	Area	961	1,264	1,162	1,799	1,833	1,991	1,843	1,533	1,770	1,650	1,814	1,779
	Production	872	1,319	1,178	2,301	2,610	2,874	3,402	2,909	3,964	3,400	4,309	4,478
	Yield	907	1,044	1,014	1,279	1,424	1,443	1,846	1,898	2,240	2,060	2,375	2,517
Uttar Pradesh	Area	4,394	4,970	5,239	6,624	6,760	7,391	8,405	8,485	8,702	8,638	8,568	8,626
	Production	4,230	5,841	6,087	8,940	9,884	11,458	16,236	16,789	19,611	17,684	18,600	20,156
	Yield	963	1,175	1,162	1,350	1,462	1,550	1,932	1,979	2,254	2,047	2,171	2,337
West Bengal	Area	55	79	150	,515	484	521	398	374	300	327	269	269
	Production	46	71	300	1,051	1,037	998	683	674	625	569	530	530
	Yield	821	899	2,000	2,041	2,143	1,916	1,716	1,802	2,083	1,742	1,970	1,970
All India	Area	12,838	14,998	15,958	20,922	21,456	22,641	23,131	23,063	24,109	23,502	24,167	22,980
	Production	11,393	16,540	18,651	29,010	31,749	35,508	44,323	46,169	54,110	49,850	55,135	55,087
	Yield	887	1,103	1,169	1,387	1,480	1,568	1,916	2,002	2,244	2,121	2,281	2,397

Source : Directorate of Economics & Statistics, Ministry of Agriculture.

TABLE - 2.2. WHEAT: IRRIGATED AREA

('000 hectares)

State	1966-67	67-68	68-69	69-70	70-71	71-72	72-73	73-74	74-75	75-76	76-77	77-78
1	2	3	4	5	6	7	8	9	10	11	12	13
Andhra Pradesh	4	4	5	7	7	10	11	12	15	14	15	15
Bihar	378	405	521	556	672	764	804	788	945	1,271	1,405	1,318
Gujarat	273	353	359	330	330	414	300	318	301	462	389	398
Haryana	512	512	666	708	914	976	1,016	1,016	991	1,084	1,204	1,208
Himachal Pradesh	47	49	52	53	53	60	60	54	54	55	56	56
Jammu & Kashmir	21	26	26	26	26	36	40	44	44	47	51	50
Karnataka	13	15	19	24	26	46	23	35	44	76	77	81
Madhya Pradesh	221	282	340	421	521	652	687	675	613	790	821	903
Maharashtra	211	221	235	260	275	299	248	336	371	546	601	517
Punjab	1,160	1,262	1,661	1,803	1,942	2,040	2,126	2,058	1,961	2,186	2,381	2,379
Rajasthan	636	757	801	814	1,003	1,013	1,026	1,108	1,017	1,144	1,274	1,319
Uttar Pradesh	2,598	2,531	3,021	3,413	3,988	4,054	4,254	4,191	4,586	4,886	5,270	5,364
West Bengal	27	32		32	32	32	32	32	32	32	32	32
Delhi	25	18	35	36	39	45	43	40	47	42	57	39
All India	6,128	6,471	7,782	8,582	9,924	10,404	10,751	10,747	11,066	12,689	13,669	13,723

State	1978-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89	89-90
1	14	15	16	17	18	19	20	21	22	23	24	25
Andhra Pradesh	15	11	10	12	13	13	10	9	8	6	9	8
Bihar	1,298	1,225	1,269	1,214	1,316	1,469	1,472	1,446	1,453	1,720	1,769	1,664
Gujarat	403	479	474	496	516	516	500	508	353	353	278	278
Haryana	1,320	1,395	1,378	1,452	1,622	1,686	1,630	1,623	1,717	1,696	1,782	1,817
Himachal Pradesh	55	60	57	60	62	61	65	64	63	64	64	68
Jammu & Kashmir	54	51	47	52	52	56	57	54	58	58	55	57
Karnataka	83	68	60	66	64	68	79	63	76	68	84	81
Madhya Pradesh	980	782	977	979	1,149	1,272	1,291	1,352	1,405	1,436	1,677	1,543
Maharashtra	559	500	490	321	481	576	549	484	340	377	377	377
Punjab	2,512	2,625	2,567	2,656	2,808	2,921	2,920	2,949	3,022	2,978	3,022	3,119
Rajasthan	1,544	1,634	1,391	1,398	1,716	1,780	1,475	1,486	1,662	1,374	1,591	1,522
Uttar Pradesh	5,928	6,072	6,649	6,419	6,958	7,130	7,130	7,117	7,244	7,457	7,656	7,603
West Bengal	32	32	32	112	170	223	223	221	221	221	221	221
Delhi	46	45	43	38	47	43	42	37	40	37	10	33
All India	14,870	15,028	15,516	15,547	17,046	17,886	17,500	17,472	17,704	17,890	18,634	18,430

Source : Directorate of Economics & Statistics, Ministry of Agriculture.

TABLE - 2.3. WHEAT: AREA UNDER HIGH YIELDING VARIETIES

('000 hectares)

State	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79
1	2	3	4	5	6	7	8	9	10	11	12	13
Bihar	182	301	437	880	1,213	1,640	1,650	871	1,229	1,417	1,800	1,950
Gujarat	161	167	17	101	68	130	315	329	452	506	460	460
Haryana	101	259	440	630	796	1,000	1,018	990	1,087	1,200	1,170	1,180
Himachal Pradesh	11	23	69	109	125	130	200	189	212	260	250	268
Jammu & Kashmir	28	36	44	57	60	97	112	124	140	152	165	180
Madhya Pradesh	45	81	149	201	291	436	632	725	803	1,000	1,200	1,300
Maharashtra	14	63	152	211	207	310	377	403	976	1,001	1,000	1,200
Punjab	639	1,012	1,502	1,589	1,695	1,880	1,970	1,956	2,195	2,376	2,350	2,400
Rajasthan	126	190	288	368	467	600	669	726	826	910	950	1,050
Uttar Pradesh	1,587	2,515	1,640	1,938	2,200	3,200	3,362	4,152	4,638	4,800	5,200	5,500
West Bengal	28	82	175	336	365	345	297	411	562	600	600	700
All India	2,942	4,793	5,005	6,542	7,858	10,000	10,911	11,194	13,458	14,522	15,540	16,500

State	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86P	1986-87	1987-88	1988-89	1989-90(P)	1990-91	1991-92
1	14	15	16	17	18	19	20	21	22	23	24	25	26
Bihar	1,400	1,400	1,800	1,650	1,900	2,000	1,500	2,100	2,100	1,653	2,000	1,500	2,000
Gujarat	460	475	468	454	546	450	293	252	163	527	550	450	624
Haryana	1,350	1,360	1,437	1,584	1,675	1,610	1,612	1,710	1,653	1,750	1,810	1,830	1,830
Himachal Pradesh	246	269	260	284	285	310	310	320	275	335	337	340	330
Jammu & Kashmir	180	180	190	189	179	194	190	196	192	209	230	235	240
Madhya Pradesh	600	1,000	493	1,418	1,515	1,598	1,840	1,000	1,875	1,900	2,200	2,000	2,675
Maharashtra	973	814	877	793	1,079	728	841	875	960	750	630	635	640
Punjab	2,774	2,757	2,883	3,036	3,107	3,090	3,110	3,178	3,116	3,152	3,100	3,240	2,800
Rajasthan		1,028	918	1,170	1,391	1,274	1,333	1,374	975	1,350	1,350	1,421	1,475
Uttar Pradesh	5,192	6,211	6,193	6,409	6,944	7,100	7,408	7,431	7,691	7,930	8,000	8,200	8,600
West Bengal	566	283	389	266	329	336	305	397	374	300	300	265	360
All India	14,010	16,104	16,751	17,837	19,347	19,090	19,075	19,192	19,692	20,175	20,843	20,411	21,934

Source : Directorate of Extension, Ministry of Agriculture.

TABLE 24. WHEAT: COMPOUND RATES OF GROWTH

Per cent per annum

State	1950-51 TO 1966-67			1967-68 TO 1988-89			1969-70 TO 1978-79			1979-80 TO 1988-89		
	Area	Prodn	Yield	Area	Prodn	Yield	Area	Prodn	Yield	Area	Prodn	Yield
Bihar				2.48	4.58	2.05	4.50	6.26	1.69	2.45	6.28	3.74
Gujarat				-0.59	1.75	2.35	4.46	6.93	2.36	-8.37	-7.46	1.00
Haryana				3.45	6.39	2.85	3.21	4.07	0.84	2.22	6.39	4.08
Himachal Pradesh				1.09	2.12	1.02	0.10	1.92	2.03	0.92	2.82	1.88
Jammu & Kashmir				1.18	1.68	0.49	0.03	0.26	0.23	2.56	2.20	-0.35
Karnataka				-0.92	0.28	1.21	2.66	10.56	7.70	-4.25	-4.98	-0.76
Madhya Pradesh				0.92	3.99	3.04	0.62	2.64	2.01	1.51	7.02	5.43
Maharashtra				0.05	3.95	3.89	4.68	14.05	8.96	-4.73	-3.80	0.98
Punjab				2.43	5.25	2.75	2.15	4.02	1.83	1.38	4.42	3.00
Rajasthan				1.75	5.22	3.40	4.37	6.99	2.51	-1.52	3.26	4.58
Uttar Pradesh				2.73	6.14	3.31	2.68	5.32	2.57	1.21	5.71	4.45
West Bengal				2.12	3.28	1.14	7.27	7.58	0.29	0.47	2.44	1.96
All-India	2.06	3.59	1.50	2.03	5.20	3.11	2.75	5.07	2.26	0.67	4.68	3.99

GROWTH RATES OF WHEAT IN UTTAR PRADESH

(Per cent per annum)

	1970-71 to 1979-80			1979-80 to 1988-89		
	Area	Prodn	Yield	Area	Prodn	Yield
Eastern Uttar Pradesh	5.27	7.96	2.55	2.06	6.75	4.60
Western Uttar Pradesh	2.82	3.88	1.02	1.88	5.34	3.39
Total Uttar Pradesh	3.79	5.24	1.41	1.97	5.9	3.86

TABLE 3.1. ESTIMATES OF COST OF PRODUCTION OF WHEAT (AT 1974-75 PRICES)

State	Period	Yield (Qtl.)	Cost per hectare (C_2) (Rs)	Cost per quintal (C_2) (Rs)	Operational Cost (A_2+FL) (Ha) (Rs)	Operational Cost (A_2+FL) (qtl) (Rs)	Gross value of output (Rs)	Net Income (Rs)
Punjab	1974-75 -							
	1976-77	24.28	2,639.15	97.62	1,759.63	65.27	3,136.89	497.74
	1984-85 -							
	1986-87	33.12	3,345.19	88.06	2,208.18	58.16	4,412.68	1,067.49
Haryana	1974-75 -							
	1976-77	22.73	2,392.98	91.29	1,587.81	60.61	3,257.33	864.35
	1984-85 -							
	1986-87	28.74	2,572.87	78.02	1,745.34	52.86	4,117.28	1,544.41
Uttar Pradesh	1974-75 -							
	1975-76	21.60	2,472.01	94.01	1,722.09	65.48	3,440.56	968.55
	1984-85 -							
	1986-87	24.80	2,158.55	72.20	1,538.45	45.61	3,915.63	1,757.08
Madhya Pradesh	1974-75 -							
	1975-76	12.03	1,430.09	104.5	1,912.63	66.67	1,506.90	76.81
	1984-85 -							
	1986-87	12.19	1,454.23	94.48	892.47	58.04	1,695.15	240.92
Rajasthan	1974-75 -							
	1975-76	19.99	2,197.91	96.03	1,547.35	67.41	3,794.73	1,596.82
	1984-85 -							
	1986-87	23.34	1,947.60	63.82	1,344.29	44.05	5,089.93	3,142.33
Average	Mid-Seventies	20.13	2,226.43	96.69	1,505.90	65.09	3,027.28	800.85
	Mid-Eighties	24.44	2,295.69	79.32	1,545.75	51.74	3,846.13	1,550.45

* The Cost concepts have been modified to meet diverse needs of its users, including the farmers. The new enlarged cost classification which has been adopted from 1981-82 is given below:

Cost A_1: All actual expenses in cash and kind incurred in production by owner operator.
Cost A_2: Cost A_1 + rent paid for leased-in land.
Cost B_1: Cost A_1 + interest on value of owned capital assets (excluding land).
Cost B_2: Cost B_1 + rental value of owned land (net of land revenue) and rent paid for leased-in land.
Cost C_1: Cost B_1 + imputed value of family labour.
Cost C_2: Cost B_2 + imputed value of family labour.

TABLE 3.2. PER CENT SHARE OF DIFFERENT ITEMS IN COST OF CULTIVATION
(AT CURRENT PRICE)

Item	Punjab		Haryana		Uttar Pradesh		Madhya Pradesh		Rajasthan	
	1974-75 - 76-77	1984-85 - 86-87	1974-75 - 76-77	1984-85 - 86-87	1974-75 - 75-76	1984-85 - 86-87	1974-75 - 75-76	1984-85 - 86-87	1974-75 - 75-76	1984-85 - 86-87
Operational cost	61.32	58.49	62.20	65.91	67.19	69.09	60.94	57.97	69.13	61.53
Human labour	18.38	16.06	19.03	14.27	17.11	18.33	19.72	16.32	19.48	18.63
Bullock labour	9.16	2.64	13.97	5.47	17.20	11.86	11.98	12.31	11.52	10.36
Machine labour	5.56	12.42	5.28	13.15	2.57	9.57	2.21	3.34	4.74	7.96
Seeds	4.25	4.10	6.23	7.75	7.14	6.48	12.47	9.77	9.51	6.78
Fertilizer & manure	16.70	16.15	7.05	15.11	14.73	13.94	11.46	7.46	9.08	6.32
Insecticides	0.04	1.49	0.00	1.36	0.00	0.01	0.00	0.01	0.07	0.01
Irrigation	5.38	3.80	9.06	7.08	6.76	7.18	1.44	7.36	12.71	10.03
Interest on Working Capital	1.91	1.81	1.48	1.75	1.68	1.76	1.52	1.45	1.74	1.40
Fixed cost	38.68	41.51	37.80	34.09	32.81	30.91	39.06	42.03	30.87	38.47
Rental value	27.20	25.29	25.90	23.18	24.47	24.10	30.26	30.16	20.74	21.21
Rent	2.99	5.53	1.84	0.04	0.10	0.33	0.00	0.08	0.61	5.95
Land revenue	0.38	0.07	0.60	0.25	0.52	0.24	0.56	0.21	0.30	0.20
Depreciation	2.27	2.26	1.65	1.63	1.85	1.60	2.31	3.15	0.66	0.88
Interest on Fixed Capital	6.09	8.60	7.31	8.94	5.87	4.60	6.07	8.39	8.83	10.27

Intt. on WC = Interest on Working Capital. Intt. on FC = Interest on Fixed Capital.

TABLE 3.3. CHANGES IN COST STRUCTURE (AT 1974-75 PRICES)

State	Period	Human Labour			Bullock Labour		Machine labour cost	Fertilizer		Interest on fixed capital	Irrigation charges
		Man days	Total labour cost (Rs)	Family labour cost (Rs)	Pair days	Cost (Rs)	(Rs)	Nutrient (Kg)	Cost (Rs)	(Rs)	(Rs)
Punjab	1974-75										
	1976-77	62.62	451.06	216.16	12.01	213.20	134.39	99.35	521.54	160.98	134.84
	1984-85										
	1986-87	55.27	398.14	169.09	3.12	55.44	261.18	170.86	896.94	287.83	72.97
Haryana	1974-75										
	1976-77	70.03	388.93	267.32	17.27	305.07	123.31	42.81	200.61	173.63	215.96
	1984-85										
	1986-87	47.35	262.96	152.52	6.30	111.33	236.18	140.01	656.14	230.40	106.20
Uttar	1974-75										
Pradesh	1975-76	102.36	414.36	284.49	34.22	413.00	59.28	62.68	274.94	145.02	161.87
	1984-85										
	1986-87	71.34	288.77	173.56	15.18	183.14	153.83	100.29	439.91	99.74	97.56
Madhya	1974-75										
Pradesh	1975-76	65.03	254.65	138.39	27.23	180.01	29.45	25.80	166.38	87.20	19.07
	1984-85										
	1986-87	46.11	178.90	112.39	17.85	118.02	31.76	33.39	215.36	122.81	58.96
Rajasthan	1974-75										
	1975-76	91.02	432.06	251.19	22.43	226.26	98.18	39.98	173.01	194.12	269.84
	1984-85										
	1986-87	68.27	324.09	266.04	12.13	122.40	124.81	43.73	189.37	183.98	125.89
Average	Mid-Seventies	78.33			22.63		88.92	54.12		152.15	160.32
	Mid-Eighties	57.67			10.90		161.55	97.66		184.95	92.32

TABLE 4.1A. TECHNICAL EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF YIELD)

	Punjab									
	1974-75 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	10	10	10	10	10	59	59	59	59	59
Area (ha)	5.26	2.87	3.27	4.05	3.45	3.35	3.28	2.74	2.76	2.62
Yield per ha (qtls.)	35.65	30.95	27.47	24.39	18.39	47.02	38.94	34.60	30.86	23.72
Input output ratio	1.37	1.23	1.30	1.34	1.10	1.63	1.55	1.45	1.35	1.23
Net income (Rs/ha)	1,177.31	730.22	777.92	764.69	212.44	3,453.00	2,620.90	2,055.94	1,533.21	854.60
Return over Investment (Rs)	2,483.41	1,717.78	1,664.76	1,693.72	970.31	5,344.41	4,135.16	3,454.16	2,830.26	1,953.95
Cost per ha (Rs)										
Cost A_1	1,650.34	1,675.89	1,347.03	1,110.29	1,215.31	2,738.94	2,498.80	2,467.38	2,378.99	2,038.90
Cost A_2+FL	1,891.18	2,135.80	1,746.26	1,327.17	1,346.20	3,579.36	3,287.37	3,148.66	3,120.28	2,674.01
Cost C_2	3,197.28	3,123.36	2,633.10	2,256.20	2,104.07	5,470.77	4,801.63	4,546.88	4,417.33	3,773.36
Operational cost	1,803.27	1,992.61	1,598.48	1,291.53	1,345.24	3,164.01	2,922.86	2,861.11	2,835.72	2,238.15
Fixed cost	1,394.01	1,130.75	1,034.62	964.67	758.83	2,306.76	1,878.77	1,685.77	1,581.61	1,535.21
Value of Output (Rs)										
Main product	4,028.61	3,497.48	3,104.17	2,757.01	2,078.64	7,613.05	6,368.91	5,601.98	5,018.89	3,842.12
By product	345.98	356.10	306.85	263.88	237.87	1,310.72	1,053.62	1,000.84	931.65	785.84
Gross value of output	4,374.59	3,853.58	3,411.02	3,020.89	2,316.51	8,923.77	7,422.53	6,602.82	5,950.54	4,627.96
Cost per Quintal (Rs)										
Cost A_1	42.63	49.14	44.63	41.55	59.30	49.69	55.06	60.50	65.02	71.36
Cost A_2+FL	48.85	62.63	57.85	49.66	65.69	64.94	72.44	77.21	85.28	93.59
Cost C_2	82.59	91.59	87.23	84.42	102.67	99.26	105.80	111.49	120.73	132.07
Input Costs (Rs)										
Human labour	537.29	740.53	488.61	446.59	388.30	918.57	846.10	879.33	884.07	810.54
Family labour	152.93	316.72	251.45	181.24	129.93	425.07	424.06	393.73	456.73	199.25
Bullock labour	115.45	279.27	290.29	213.76	168.41	147.02	152.60	200.41	291.49	214.57
Machine labour	176.72	115.26	97.67	105.62	161.79	797.20	681.78	697.42	554.95	516.60
Irrigation	97.60	125.82	136.74	105.97	85.33	220.50	212.24	182.06	243.12	182.47
Fertiliser & manure	666.94	549.63	378.07	237.72	337.94	983.96	909.08	832.03	839.69	720.57
Seeds	105.72	101.68	103.56	101.85	107.34	220.17	206.01	217.42	211.71	220.99
Rent	87.91	143.19	147.78	35.64	0.96	415.35	364.51	287.55	284.56	435.86
Capital Costs	243.56	177.36	115.17	117.19	143.32	535.07	408.90	377.60	334.68	328.49
Labour & Material Inputs										
Human labour (hrs)	522.48	625.30	517.68	490.58	448.93	491.20	467.08	450.74	449.81	411.62
Bullock labour (pair hrs)	39.82	100.53	113.54	88.68	60.51	26.93	27.19	32.94	47.13	36.26
Fertilizer (Kgs.)	132.39	107.24	69.60	53.37	69.25	204.66	181.14	170.89	169.99	140.48
Manure (qtls.)	12.18	9.81	4.56	4.59	0.00	5.06	10.89	3.60	6.99	15.23
Seed (Kgs.)	82.02	80.44	78.42	77.29	82.28	108.48	105.89	104.32	104.89	110.14

TABLE 4.1B. TECHNICAL EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF YIELD)

	Haryana									
	1974-75 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	10	10	10	10	10	33	33	33	33	33
Area (ha)	2.74	5.6	4.58	1.84	3.2	2.45	2.66	2.88	3.09	2.12
Yield per ha (qtls)	28.02	23.81	21.59	19.38	14.93	34.66	29.27	26.80	24.78	17.40
Input output ratio	1.60	1.79	1.37	1.27	1.13	1.66	1.57	1.33	1.32	1.01
Net income (Rs/ha)	1,454.07	1,565.35	819.82	580.44	238.67	2,522.06	2,263.76	1,188.85	1,268.17	37.46
Return over Investment (Rs)	2,343.52	2,367.09	1,603.44	1,206.57	734.40	3,721.57	3,381.76	2,215.35	2,359.40	838.66
Cost per ha (Rs)										
Cost A_1	1,277.71	1,059.79	1,227.74	1,116.94	971.69	2,213.14	2,388.10	2,163.64	2,381.48	1,879.38
Cost A_2+FL	1,529.65	1,175.89	1,404.94	1,513.53	1,315.14	2,621.12	2,866.79	2,595.66	2,887.49	2,417.74
Cost C_2	2,419.10	1,977.63	2,188.56	2,139.66	1,810.87	3,820.63	3,984.79	3,622.16	3,978.72	3,218.94
Operational cost	1,529.65	1,175.89	1,391.68	1,481.65	1,220.08	2,621.12	2,866.79	2,595.66	2,887.49	2,380.33
Fixed cost	889.45	801.74	796.88	658.01	590.79	1,199.51	1,118.00	1,026.50	1,091.23	838.61
Value of Output (Rs)										
Main product	3,341.66	2,953.35	2,570.89	2,314.60	1,772.47	5,527.14	5,543.50	4,127.18	4,629.58	2,736.69
By product	531.51	589.63	437.49	405.50	277.07	815.55	705.05	683.83	617.31	519.71
Gross value of output	3,873.17	3,542.98	3,008.38	2,720.10	2,049.54	6,342.69	6,248.55	4,811.01	5,246.89	3,256.40
Cost per Quintal (Rs)										
Cost A_1	39.34	37.10	48.60	49.04	56.28	55.64	72.38	69.26	84.80	90.77
Cost A_2+FL	47.10	41.17	55.61	66.46	76.18	65.90	86.89	83.09	102.82	116.77
Cost C_2	74.49	69.24	86.63	93.95	104.89	96.06	120.78	115.94	141.67	155.47
Input Costs (Rs)										
Human labour	377.22	324.08	375.79	452.21	312.59	579.07	701.81	593.01	689.23	663.08
Family labour	251.94	116.11	63.94	364.71	248.39	407.98	478.69	432.02	506.01	500.95
Bullock labour	331.79	140.49	276.42	449.78	301.49	359.55	508.16	254.10	263.46	287.12
Machine labour	100.76	249.65	123.86	85.25	142.30	467.86	416.15	610.19	733.30	377.50
Irrigation	206.41	88.24	185.67	112.14	78.82	324.14	311.93	415.33	390.81	391.41
Fertiliser & manure	229.73	100.75	153.45	91.58	143.52	651.32	697.66	587.32	609.46	478.81
Seeds	200.67	209.89	205.69	214.78	206.98	333.11	386.22	353.32	397.04	379.33
Rent	0.00	0.00	13.26	31.88	95.06	0.00	0.00	0.00	0.00	37.41
Capital Costs	138.38	87.22	132.89	117.69	95.81	536.51	429.75	418.77	437.46	307.55
Labour & Material Inputs										
Human labour (hrs)	498.70	437.20	505.01	664.46	478.20	467.87	439.42	408.51	433.89	406.99
Bullock labour (pair hrs)	125.81	61.28	137.05	229.16	161.05	80.63	100.61	58.04	61.44	65.40
Fertilizer (Kgs)	43.40	22.99	34.48	17.28	30.74	127.29	142.48	116.16	118.34	95.86
Manure (qtls)	2.78	0.00	1.39	8.62	0.38	0.00	0.00	0.00	7.58	1.02
Seed (Kgs)	103.42	106.62	102.45	107.51	103.70	112.86	109.49	113.61	112.48	101.79

TABLE 4.1C. TECHNICAL EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF YIELD)

	Uttar Pradesh									
	1975-76 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	20	20	20	20	20	128	128	128	128	128
Area (ha)	1.02	1.16	1.56	1.36	0.86	1.25	1.20	1.19	1.42	1.21
Yield per ha (qtls)	35.54	25.79	21.77	19.09	14.92	35.00	28.25	24.74	20.49	12.42
Input output ratio	1.31	1.21	1.04	1.00	0.73	1.64	1.42	1.32	1.15	0.94
Net income (Rs/ha)	1,020.50	513.04	92.44	3.71	-649.24	2,489.25	1,500.70	1,059.26	499.23	-141.75
Return over Investment (Rs)	2,197.55	1208.99	999.03	836.55	-91.66	3,660.00	2,491.05	1,947.65	1,393.22	466.78
Cost per ha (Rs)										
Cost A_1	1,597.16	1,439.89	1,277.79	1,165.43	1,339.34	2,256.28	2,119.39	1,959.76	1,878.38	1,465.17
Cost A_2+FL	2,079.71	1,797.82	1,540.08	1,428.03	1,828.56	2,713.15	2,615.90	2,453.43	2,348.95	1,898.22
Cost C_2	3,256.76	2,493.77	2,446.67	2,260.87	2,386.14	3,883.90	3,606.25	3,341.82	3,242.94	2,506.75
Operational cost	2,079.71	1,792.04	1,540.08	1,428.03	1,819.02	2,713.15	2,610.62	2,433.54	2,342.22	1,898.22
Fixed cost	1,177.05	701.73	906.59	832.84	567.12	1,170.75	995.63	908.28	900.72	608.53
Value of Output (Rs)										
Main product	3,471.59	2,435.09	2,106.48	1,900.33	1,498.35	5,423.68	4,334.61	3,824.25	3,171.61	2,002.19
By product	805.67	571.72	432.63	364.25	238.55	949.47	772.34	576.83	570.56	362.81
Gross value of output	4,277.26	3,006.81	2,539.11	2,264.58	1,736.90	6,373.15	5,106.95	4,401.08	3,742.17	2,365.00
Cost per Quintal (Rs)										
Cost A_1	36.47	45.22	48.69	51.23	77.44	54.86	63.68	68.83	77.70	99.87
Cost A_2+FL	47.50	56.46	58.69	62.77	105.73	65.97	78.59	86.17	97.16	129.39
Cost C_2	74.38	78.31	93.24	99.38	137.96	94.44	108.35	117.37	134.14	170.87
Input Costs (Rs)										
Human labour	625.21	456.07	408.55	370.66	620.20	825.19	742.86	765.30	714.36	596.54
Family labour	482.55	352.15	262.29	262.60	479.68	456.87	491.23	473.78	463.84	433.05
Bullock labour	595.80	608.60	574.98	463.41	676.40	438.19	557.00	518.29	517.31	531.54
Machine labour	113.47	49.52	70.61	78.95	16.70	461.81	348.96	278.56	269.18	184.96
Irrigation	107.73	181.56	139.44	109.28	93.83	370.57	393.92	304.24	305.66	154.15
Fertiliser & manure	374.72	295.78	194.22	178.36	185.38	600.26	558.71	485.16	488.70	357.41
Seeds	133.27	149.94	112.54	124.63	127.81	243.04	243.81	244.57	247.48	226.35
Rent	0.00	5.78	0.00	0.00	9.54	0.00	5.28	19.89	6.73	0.00
Capital Costs	236.67	98.83	136.54	133.77	115.13	279.79	217.92	222.13	235.56	172.98
Labour & Material Inputs										
Human labour (hrs)	932.46	836.22	642.49	771.04	953.93	609.76	654.10	644.02	621.40	533.49
Bullock labour (pair hrs)	328.75	341.93	212.56	266.85	340.95	108.17	144.43	143.05	150.75	180.34
Fertilizer (Kgs)	57.09	48.72	42.19	33.88	33.72	111.56	99.80	90.49	87.25	58.98
Manure (qtls)	35.13	29.65	0.00	12.54	21.84	8.87	10.95	6.25	8.39	10.49
Seed (Kgs)	119.41	122.65	105.64	115.77	114.51	127.89	127.39	130.83	124.12	114.12

TABLE 4.1D. TECHNICAL EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF YIELD)

	Rajasthan									
	1974-75 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	18	18	18	18	18	69	69	69	69	69
Area (ha)	1.88	1.41	1.10	2.67	2.73	0.77	0.75	0.94	1.00	1.16
Yield per ha (qtls)	36.92	23.73	16.41	12.76	9.36	34.71	26.49	19.68	14.73	8.03
Input output ratio	1.88	1.63	1.31	0.97	0.79	2.12	1.65	1.39	1.22	1.02
Net income (Rs/ha)	2,911.34	1,711.83	694.44	-81.31	-458.57	4,046.21	2,198.81	1,248.23	618.24	35.67
Return over Investment (Rs)	4,296.72	2,660.02	1,326.93	560.99	58.33	5,025.09	2,989.10	1,852.08	1,111.63	394.35
Cost per ha (Rs)										
Cost A_1	1,625.83	1,420.58	1,221.49	1,383.33	1,325.66	1,527.78	1,507.63	1,433.96	1,330.15	1,043.60
Cost A_2+FL	1,935.51	1,755.99	1,607.09	1,775.03	1,666.31	2,630.06	2,588.96	2,620.10	2,321.94	1,685.59
Cost C_2	3,320.89	2,704.18	2,239.58	2,417.33	2,183.21	3,608.94	3,379.25	3,223.95	2,815.33	2,044.27
Operational cost	2,041.08	1,709.27	1,602.09	1,762.96	1,662.40	2,406.29	2,500.12	2,413.38	2,216.28	1,620.52
Fixed cost	1,279.81	994.91	637.49	654.37	520.81	1,202.65	879.13	810.57	599.05	423.75
Value of Output (Rs)										
Main product	5,551.00	3,905.28	2,534.82	2,040.41	1,523.98	6,210.40	4,576.39	3,606.03	2,744.70	1,580.66
By product	681.23	510.73	399.20	295.61	200.66	1,444.75	1,001.67	866.15	688.87	499.28
Gross value of output	6,232.23	4,416.01	2,934.02	2,336.02	1,724.64	7,655.15	5,578.06	4,472.18	3,433.57	2,079.94
Cost per Quintal (Rs)										
Cost A_1	39.22	52.94	64.31	94.69	125.15	35.71	46.69	58.75	72.18	98.77
Cost A_2+FL	46.69	65.44	84.61	121.51	157.31	61.47	80.18	107.35	126.01	159.52
Cost C_2	80.12	100.78	117.91	165.47	206.11	84.35	104.66	132.09	152.78	193.47
Input Costs (Rs)										
Human labour	624.79	468.94	490.18	491.57	414.87	1,022.82	1,102.14	1,093.50	962.51	680.78
Family labour	304.13	288.69	380.60	379.63	336.74	878.51	992.49	979.42	886.13	576.92
Bullock labour	243.14	279.89	425.83	419.72	470.56	412.02	478.85	365.81	435.44	313.98
Machine labour	179.46	61.09	26.68	21.96	25.87	357.98	295.65	205.36	177.49	119.09
Irrigation	203.20	360.73	168.49	381.65	324.56	347.85	294.46	473.16	450.35	376.43
Fertiliser & manure	372.02	222.68	205.23	104.85	99.53	246.65	299.05	239.65	153.78	91.81
Seeds	234.10	247.35	226.53	273.03	257.26	250.16	246.82	263.14	242.23	259.18
Rent	5.55	46.72	5.00	12.07	3.91	223.77	88.84	206.72	105.66	65.07
Capital Costs	237.52	265.31	146.37	265.85	240.36	319.03	345.24	400.73	367.07	355.82
Labour & Material Inputs										
Human labour (hrs)	680.93	747.88	873.55	1022.68	832.75	798.67	831.85	822.67	700.63	514.31
Bullock labour (pair hrs)	197.94	203.16	306.88	331.30	310.92	140.53	173.73	131.92	232.25	96.55
Fertilizer (Kgs)	59.39	34.19	30.81	13.34	16.97	48.43	51.52	45.49	25.25	7.86
Manure (qtls)	34.48	19.60	19.98	8.76	2.54	0.00	3.72	5.67	3.17	6.33
Seed (Kgs)	107.86	112.14	110.92	136.25	121.36	133.13	128.54	131.07	118.67	119.98

TABLE 4.1E. TECHNICAL EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF YIELD)

	Madhya Pradesh									
	1970-71 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	53	53	53	53	53	77	77	77	77	77
Area (ha)	4.12	4.41	5.16	6.2	6.56	1.33	1.91	1.8	2.26	2.16
Yield per ha (qtls.)	12.87	8.98	7.91	5.35	3.60	25.05	16.45	12.11	9.71	6.69
Input output ratio	2.17	1.80	1.74	1.42	1.01	1.81	1.40	1.45	1.47	1.16
Net income (Rs/ha)	606.99	353.66	279.57	142.08	3.11	2456.43	977.61	815.13	670.94	208.37
Return over Investment (Rs)	670.52	401.28	324.97	142.43	39.59	3752.03	1891.63	1457.64	1187.69	575.36
Cost per ha (Rs)										
Cost A_1	363.21	322.01	269.51	274.67	245.12	1,424.89	1,271.69	899.47	712.34	674.18
Cost A_2+FL	456.70	391.84	333.25	337.56	303.72	1,735.31	1,541.13	1,181.61	915.75	917.21
Cost C_2	520.23	439.46	378.65	337.91	340.20	3,030.91	2,455.15	1,824.12	1,432.50	1,284.20
Operational cost	456.70	389.30	333.25	337.56	303.72	1,734.01	1,541.13	1,181.61	905.13	902.08
Fixed cost	63.53	50.16	45.40	0.35	36.48	1,296.90	914.02	642.51	527.37	382.12
Value of Output (Rs)										
Main product	996.83	702.08	572.86	415.25	295.77	4,257.83	2,789.26	2,093.01	1,703.43	1,184.76
By product	130.39	91.04	85.36	64.74	47.54	1,229.51	643.50	546.24	400.01	307.81
Gross value of output	1,127.22	793.12	658.22	479.99	343.31	5,487.34	3,432.76	2,639.25	2,103.44	1,492.57
Cost per Quintal (Rs)										
Cost A_1	24.96	31.74	29.65	44.42	58.66	44.14	62.81	58.90	59.41	79.99
Cost A_2+FL	31.38	38.63	36.67	54.59	72.68	53.75	76.12	77.38	76.38	108.83
Cost C_2	35.75	43.32	41.66	54.64	81.41	93.88	121.27	119.45	119.47	152.37
Input Costs (Rs)										
Human labour	150.36	124.64	110.75	106.45	109.77	495.84	398.44	383.04	307.16	354.28
Family labour	93.49	67.29	63.74	62.89	58.6	309.12	269.44	282.14	192.79	227.90
Bullock labour	122.90	119.51	90.99	74.34	73.30	265.28	265.39	346.65	260.95	269.75
Machine labour	1.79	1.96	1.75	1.18	4.73	98.77	99.16	30.57	40.36	29.56
Irrigation	6.11	3.08	1.54	0.01	0.00	394.51	456.95	147.20	74.29	60.18
Fertiliser & manure	37.28	10.79	4.87	5.54	4.18	445.16	241.45	157.90	82.16	83.99
Seeds	95.98	86.67	85.92	87.52	84.46	231.79	219.95	203.69	197.10	181.18
Rent	0.00	2.54	0.00	0.00	0.00	1.30	0.00	0.00	10.62	15.13
Capital Costs	57.16	40.64	36.58	30.51	33.57	396.20	330.06	232.53	172.27	161.32
Labour & Material Inputs										
Human labour (hrs)	424.74	369.98	334.36	272.93	285.02	552.16	441.32	391.90	315.37	346.27
Bullock labour (pair hrs)	194.94	177.97	157.11	138.99	137.34	141.29	153.21	179.75	128.58	141.35
Fertilizer (Kgs)	8.60	3.34	0.54	0.00	0.05	95.91	49.96	26.36	58.46	19.19
Manure (qtls)	25.34	1.74	1.36	1.86	1.44	0.82	0.81	5.87	2.03	1.30
Seed (Kgs.)	109.19	108.64	107.96	106.76	98.56	110.48	104.91	104.29	104.50	97.17

TABLE 4.2A. ALLOCATIVE EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF COST OF PRODUCTION)

	Punjab									
	1974-75 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	10	10	10	10	10	59	59	59	59	59
Area (ha)	3.30	3.72	3.78	3.92	4.18	2.35	2.58	2.75	3.15	3.87
Yield per ha (qtls)	21.41	28.79	29.97	28.12	28.57	25.56	33.05	35.37	38.58	40.40
Input output ratio	1.01	1.15	1.29	1.39	1.64	1.10	1.29	1.45	1.58	1.84
Net income (Rs/ha)	30.76	467.19	837.04	975.49	1,386.61	439.59	1,393.02	2,109.79	2,682.39	3,529.68
Return over Invstment (Rs)	838.89	1,500.60	2,029.60	1,977.30	2,178.12	1,748.95	2,783.72	3,709.40	4,223.12	4,852.74
Cost per ha (Rs)										
Cost A_1	1,501.88	1,767.94	1,345.67	1,293.20	1,090.16	2,476.35	2,555.18	2,486.05	2,384.86	2,187.37
Cost A_2+FL	1,816.45	2,079.16	1,666.84	1,521.40	1,362.73	3,193.83	3,485.18	3,128.42	3,107.85	2,879.88
Cost C_2	2,624.58	3,112.57	2,859.40	2,523.21	2,15[illegible]24	4,503.19	4,875.88	4,728.03	4,648.58	4,202.94
Operational cost	1,738.75	1,993.15	1,539.34	1,472.95	1,286.92	2,951.62	3,037.58	2,896.70	2,817.48	2,537.01
Fixed cost	885.83	1,119.42	1,320.06	1,050.26	867.32	1,551.57	1,838.30	1,831.33	1,831.10	1,665.93
Value of Output (Rs)										
Main product	2,419.26	3,253.00	3,386.46	3,179.07	3,228.11	4,156.92	5,359.87	5,775.12	6,255.31	6,545.25
By product	236.08	326.76	309.98	319.63	312.74	785.86	909.03	1,062.70	1,075.66	1,187.37
Gross value of output	2,655.34	3,579.76	3,696.44	3,498.70	3,540.85	4,942.78	6,268.90	6,837.82	7,330.97	7,732.62
Cost per Quintal (Rs)										
Cost A_1	63.91	55.80	41.14	41.79	34.79	81.48	66.10	59.36	52.75	45.83
Cost A_2+FL	77.30	65.63	50.95	49.16	43.49	105.09	90.16	74.70	68.74	60.34
Cost C_2	111.69	98.24	87.41	81.53	68.74	148.17	126.14	112.90	102.81	88.06
Input Costs (Rs)										
Human labour	503.34	602.46	500.84	491.75	453.85	922.85	948.85	826.84	892.63	768.27
Family labour	236.87	225.21	193.67	179.75	196.76	475.27	482.40	410.65	432.62	349.64
Bullock labour	236.10	267.54	175.19	184.63	194.70	294.21	268.98	168.05	168.01	151.60
Machine labour	171.30	155.54	101.86	129.67	98.69	641.29	632.87	738.41	658.44	551.11
Irrigation	109.60	150.19	100.65	95.96	95.04	266.69	247.85	227.30	161.49	146.28
Fertiliser & manure	479.20	583.81	459.88	375.28	272.12	799.66	846.27	896.10	871.06	842.30
Seeds	99.93	104.59	113.55	102.33	101.55	227.29	213.40	225.10	213.95	214.39
Rent	77.70	86.01	127.50	48.45	75.81	242.21	447.60	231.72	290.37	342.87
Capital Costs	171.59	181.07	211.22	114.40	118.21	449.19	460.58	416.87	334.25	320.86
Labour & Material Inputs										
Human labour (hrs)	567.10	562.54	502.18	487.37	485.79	446.59	472.61	448.66	464.47	431.67
Bullock labour (pair hrs)	86.86	103.24	67.43	73.25	72.30	47.48	41.55	29.30	29.03	31.00
Fertilizer (Kgs)	96.50	110.70	94.80	70.89	58.97	152.63	177.56	183.60	175.70	170.59
Manure (qtls)	3.41	8.45	11.00	4.37	3.90	17.22	3.55	4.65	8.90	6.51
Seed (Kgs)	79.56	82.16	83.08	78.67	76.98	112.01	105.53	107.44	104.86	105.42

TABLE 4.2B. ALLOCATIVE EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF COST OF PRODUCTION)

	Haryana									
	1974-75 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	10	10	10	10	10	33	33	33	33	33
Area (ha)	2.75	4.82	4.05	3.16	3.18	2.09	2.78	3.21	2.99	2.12
Yield per ha (qtls.)	16.84	22.32	21.63	20.72	26.21	20.84	24.66	25.95	29.87	31.58
Input output ratio	0.96	1.28	1.48	1.58	2.08	0.82	1.39	1.33	1.69	1.99
Net income (Rs/ha.)	-101.58	654.34	1,016.37	1,046.79	2,042.36	-814.56	1,532.38	1,167.92	2,490.61	2,903.93
Return over Investment (Rs)	505.80	1,499.74	1,760.41	1,665.76	2,823.83	355.66	2,644.84	2,172.00	3,613.64	3,730.64
Cost per ha (Rs)										
Cost A_1	1,306.18	1,309.94	1,099.47	987.04	950.73	2,876.85	2,265.90	2,144.69	2,089.34	1,648.95
Cost A_2+FL	1,762.14	1,531.30	1,355.03	1,173.45	1,116.71	3,443.91	2,806.94	2,550.50	2,493.02	2,094.37
Cost C_2	2,369.52	2,376.70	2,099.07	1,792.42	1,898.18	4,614.13	3,919.40	3,554.58	3,616.05	2,921.08
Operational cost	1,721.89	1,520.86	1,297.41	1,141.57	1,116.71	3,443.91	2,769.53	2,550.50	2,493.02	2,094.37
Fixed cost	647.63	855.84	801.66	650.85	781.47	1,170.22	1,149.87	1,004.08	1,123.03	826.71
Value of Output (Rs)										
Main product	1,966.47	2,628.86	2,664.34	2,424.54	3,268.76	3,292.89	4,835.49	4,072.19	5,386.69	4,976.82
By product	301.47	402.18	451.10	414.67	671.78	506.68	616.29	650.31	719.97	848.19
Gross value of output	2,267.94	3,031.04	3,115.44	2,839.21	3,940.54	3,799.57	5,451.78	4,722.50	6,106.66	5,825.01
Cost per Quintal (Rs)										
Cost A_1	67.25	50.90	43.47	40.68	30.09	119.64	81.50	71.27	61.70	44.61
Cost A_2+FL	190.73	59.50	53.58	48.36	35.34	143.22	100.96	84.75	73.62	56.66
Cost C_2	122.00	92.35	82.99	73.87	60.08	191.88	140.97	118.12	106.79	79.03
Input Costs (Rs)										
Human labour	486.89	412.78	367.31	286.68	280.00	788.37	682.37	568.55	643.60	543.41
Family labour	415.71	210.92	197.94	154.53	165.98	567.06	503.63	405.81	403.68	445.42
Bullock labour	402.35	251.52	274.85	259.84	311.38	414.46	303.70	305.89	297.57	297.76
Machine labour	230.88	156.20	118.93	95.75	107.07	870.78	470.93	501.84	420.36	341.16
Irrigation	145.80	208.26	125.73	123.39	68.10	495.88	378.40	323.58	350.00	285.74
Fertiliser & manure	161.06	208.50	142.18	136.64	70.66	648.68	684.73	604.16	568.64	518.36
Seeds	219.38	208.19	202.61	202.62	205.20	433.99	397.81	388.56	330.01	298.65
Rent	40.25	10.44	57.62	31.88	0.00	0.00	37.41	0.00	0.00	0.00
Capital Costs	125.67	155.06	91.98	123.57	75.72	584.80	448.52	321.08	438.13	337.31
Labour & Material Inputs										
Human labour (hrs)	630.14	519.23	497.76	478.47	457.96	443.67	442.89	409.35	456.95	403.81
Bullock labour (pair hrs)	180.07	118.13	127.37	156.29	132.48	85.96	68.72	73.92	70.31	67.21
Fertilizer (Kgs.)	31.00	44.67	28.21	29.81	15.21	121.75	139.67	122.86	110.68	105.24
Manure (qtls.)	9.00	0.00	0.00	1.39	2.78	8.59	0.00	0.00	0.00	0.00
Seed (Kgs.)	109.69	103.69	103.20	103.98	103.14	111.61	109.33	105.68	113.20	110.41

TABLE 4.2C. ALLOCATIVE EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF COST OF PRODUCTION)

	Uttar Pradesh									
	1974-75 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	20	20	20	20	20	128	128	128	128	128
Area (ha)	0.63	1.25	1.24	1.52	1.38	1.80	1.19	1.32	1.25	1.58
Yield per ha (qtls.)	15.13	20.38	22.64	27.00	27.67	14.72	22.28	25.98	27.68	29.92
Input output ratio	0.67	0.94	1.04	1.19	1.43	0.85	1.11	1.30	1.51	1.94
Net income (Rs/ha)	-859.25	-145.70	93.68	509.67	959.67	-486.07	415.15	1,070.35	1,693.10	2,661.58
Return over Investment (Rs)	-264.74	715.99	1,029.80	1,563.11	1,704.88	286.29	1,414.18	2,056.40	2,619.68	3,523.79
Cost per ha (Rs)										
Cost A_1	1,535.12	1,385.25	1,307.23	1,256.95	1,255.34	1,926.00	2,079.06	2,087.96	1,942.64	1,634.84
Cost A_2+FL	1,998.31	1,748.01	1,680.18	1,642.36	1,491.17	2,449.75	2,629.45	2,604.61	2,380.14	1,955.42
Cost C_2	2,592.82	2,609.70	2,616.30	2,695.80	2,236.38	3,222.11	3,628.48	3,590.66	3,306.72	2,817.63
Operational cost	1,985.99	1,748.01	1,678.35	1,638.40	1,491.17	2,449.75	2,622.72	2,582.02	2,380.14	1,952.84
Fixed cost	606.83	861.69	937.95	1,057.40	745.21	772.36	1,005.76	1,008.64	926.58	864.79
Value of Output (Rs)										
Main product	1,501.15	2,067.94	2,271.90	2,620.06	2,562.98	2,318.10	3,426.70	3,992.25	4,284.66	4,683.57
By product	232.42	396.06	438.08	585.41	633.07	417.94	616.93	668.76	715.16	795.64
Gross value of output	1,733.57	2,464.00	2,709.98	3,205.47	3,196.05	2,736.04	4,043.63	4,661.01	4,999.82	5,479.21
Cost per Quintal (Rs)										
Cost A_1	87.86	57.05	48.41	38.05	36.38	110.86	79.08	68.84	60.14	46.71
Cost A_2+FL	114.37	71.98	62.22	49.72	43.22	141.00	100.01	85.87	73.69	55.86
Cost C_2	148.39	107.47	96.88	81.61	64.81	185.46	138.01	118.38	102.37	80.50
Input Costs (Rs)										
Human labour	608.75	463.27	487.12	498.28	399.53	755.80	800.73	799.81	662.07	620.45
Family labour	450.87	362.76	371.12	381.45	235.83	523.75	543.66	494.06	437.50	318.00
Bullock labour	747.27	593.18	521.73	529.31	474.66	660.02	585.67	516.92	462.83	335.30
Machine labour	34.00	116.84	60.28	100.72	18.66	223.33	316.02	319.30	363.80	318.89
Irrigation	120.54	139.84	134.91	132.40	104.30	297.06	320.68	339.84	360.73	209.67
Fertiliser & manure	229.20	196.05	237.24	236.16	287.30	486.99	577.11	543.60	478.18	401.63
Seeds	134.05	127.64	137.97	128.07	124.26	238.31	248.17	257.29	234.84	225.48
Rent	12.32	0.00	1.83	3.96	0.00	0.00	6.73	22.59	0.00	2.58
Capital Costs	122.64	105.87	183.77	170.01	136.66	240.07	230.33	247.70	212.32	197.90
Labour & Material Inputs										
Human labour (hrs)	1022.92	811.28	798.16	788.44	669.75	605.23	688.54	650.40	595.77	519.20
Bullock labour (pair hrs)	381.23	272.18	256.14	294.41	257.36	179.82	166.18	145.41	134.51	100.43
Fertilizer (Kgs.)	44.46	33.57	39.48	49.22	45.60	81.57	97.34	101.75	90.38	76.56
Manure (qtls.)	21.01	20.55	21.21	7.16	20.48	10.52	14.16	6.62	6.38	7.29
Seed (Kgs.)	120.71	113.26	114.03	118.20	109.26	116.50	126.50	128.92	128.10	123.56

TABLE 4.2D. ALLOCATIVE EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF COST OF PRODUCTION)

	Rajasthan									
	1974-75 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	18	18	18	18	18	69	69	69	69	69
Area (ha)	1.67	2.62	2.72	1.47	1.63	0.71	1.10	0.86	0.84	1.06
Yield per ha (qtls.)	8.85	13.18	17.60	24.50	26.87	11.08	15.40	22.48	24.81	29.44
Input output ratio	0.64	0.96	1.30	1.63	2.13	0.80	1.26	1.50	1.86	2.45
Net income (Rs/ha)	-938.83	-100.09	769.07	1,752.43	2,426.79	-668.92	745.33	1,629.86	2,557.26	3,814.62
Return over Investment (Rs)	-381.30	542.11	1,600.19	2,727.35	3,247.29	-361.66	1,340.56	2,335.75	3,323.57	4,662.24
Cost per ha (Rs)										
Cost A_1	1,611.26	1,505.45	1,405.54	1,455.69	1,004.26	1,640.21	1,360.14	1,482.87	1,297.07	1,088.24
Cost A_2+FL	2,018.69	1,930.47	1,713.80	1,785.10	1,323.81	3,051.47	2,249.19	2,582.40	2,205.09	1,787.63
Cost C_2	2,576.22	2,582.67	2,544.92	2,760.02	2,144.31	3,358.73	2,844.42	3,288.29	2,971.40	2,635.25
Operational cost	1,978.22	1,903.17	1,693.65	1,726.18	1,285.42	2,857.95	2,123.72	2,428.56	2,055.71	1,719.78
Fixed cost	598.00	679.50	851.27	1,033.84	858.89	500.78	720.70	859.73	915.69	915.47
Value of Output (Rs)										
Main product	1,432.54	2,140.54	2,952.02	4,003.35	4,075.29	2,132.55	2,882.81	4,022.09	4,440.34	5,212.61
By product	205.39	331.74	361.97	505.10	496.81	557.26	706.94	896.06	1,088.32	1,237.26
Gross value of output	1,367.39	2,472.58	3,313.99	4,512.45	4,571.10	2,689.81	3,589.75	4,918.15	5,528.66	6,449.87
Cost per Quintal (Rs)										
Cost A_1	159.29	98.90	71.14	52.71	33.31	117.36	70.93	53.95	41.99	29.87
Cost A_2+FL	199.61	126.82	86.74	64.64	43.91	218.35	117.29	93.95	71.38	49.07
Cost C_2	254.73	169.66	123.80	99.94	71.13	240.33	148.33	119.63	96.19	72.34
Input Costs (Rs)										
Human labour	481.10	560.47	484.87	493.02	458.73	1330.91	862.15	1752.71	888.50	736.04
Family labour	391.45	425.02	308.26	291.28	301.99	1217.74	763.58	945.69	758.64	631.54
Bullock labour	555.58	474.15	342.64	286.07	253.88	474.41	417.72	524.12	334.25	273.14
Machine labour	25.13	24.81	35.31	149.21	65.06	170.65	197.30	205.96	273.32	303.36
Irrigation	431.91	397.97	330.58	280.19	101.72	664.52	455.05	359.49	328.68	141.85
Fertiliser & manure	133.33	139.85	175.51	273.08	238.77	234.40	159.88	242.18	206.84	188.55
Seeds	298.76	256.80	279.64	229.91	185.94	274.18	251.90	251.57	242.92	240.99
Rent	15.98	0.00	0.00	37.53	17.55	193.52	125.47	153.84	149.38	67.85
Capital Costs	302.85	242.47	283.59	265.51	79.44	402.93	450.26	377.10	354.64	204.21
Labour & Material Inputs										
Human labour (hrs)	927.24	1126.62	887.83	720.18	544.45	927.75	693.03	804.97	688.86	564.20
Bullock labour (pair hrs)	337.97	371.75	273.83	205.39	174.28	165.39	148.23	260.56	109.09	96.22
Fertilizer (Kgs.)	17.32	19.50	28.61	43.02	32.70	23.35	34.61	44.39	38.62	37.72
Manure (qtls.)	8.32	15.79	16.43	18.11	29.39	12.93	3.75	1.35	0.76	0.10
Seed (Kgs.)	137.72	128.48	129.49	105.41	91.63	126.17	123.11	130.92	122.63	128.59

TABLE 4.2E. ALLOCATIVE EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF COST OF PRODUCTION)

	Madhya Pradesh									
	1970-71 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	53	53	53	53	53	77	77	77	77	77
Area (ha)	4.44	5.27	5.94	4.24	6.47	1.41	1.81	1.82	2.34	2.06
Yield per ha (qtls.)	4.65	6.79	7.88	8.77	9.52	10.00	13.05	13.28	14.69	19.00
Input output ratio	0.90	1.38	1.67	2.07	2.93	0.97	1.28	1.52	1.72	2.24
Net income (Rs/ha)	-51.52	172.17	268.54	398.91	568.21	-67.33	620.98	993.38	1,319.02	2,262.43
Return over Investment (Rs)	7.15	223.81	312.78	414.61	590.31	576.59	1,365.71	1,709.31	2,076.55	3,136.20
Cost per ha (Rs)										
Cost A_1	336.28	311.27	296.61	306.42	222.93	1,264.74	1,149.29	945.19	870.53	752.82
Cost A_2+FL	439.43	398.98	357.71	355.89	272.23	1,632.66	1,444.12	1,180.30	1,077.15	956.77
Cost C_2	498.10	450.62	401.95	371.59	294.33	2,276.58	2,188.85	1,896.23	1,834.68	1,830.54
Operational Cost	439.43	398.98	357.71	355.89	269.69	1,617.53	1,432.20	1,180.30	1,077.15	956.77
Fixed cost	58.67	51.64	44.24	15.70	24.64	659.05	756.65	715.93	757.53	873.77
Value of output (Rs)										
Main product	389.57	549.09	601.49	671.86	743.99	1,785.72	2,261.92	2,300.76	2,502.84	3,177.05
By product	57.01	73.70	69.00	98.64	118.55	423.53	547.91	588.85	650.86	915.92
Gross value of output	446.58	622.79	670.49	770.50	862.54	2,209.25	2,809.83	2,889.61	3,153.70	4,092.97
Cost per Quintal (Rs)										
Cost A_1	63.09	40.42	33.77	30.47	20.20	102.23	70.90	56.67	47.03	30.76
Cost A_2+FL	82.44	51.81	40.72	35.39	24.67	131.97	89.08	70.77	58.19	39.09
Cost C_2	93.44	58.51	45.76	36.95	26.67	184.01	135.02	113.69	99.12	74.78
Input Costs (Rs)										
Human labour	166.02	134.39	115.30	99.65	87.97	489.23	411.47	366.30	337.42	334.34
Family Labour	103.15	87.71	61.1	49.47	46.76	352.79	282.91	235.11	206.62	203.95
Bullock labour	131.67	107.62	96.57	92.49	56.46	418.00	315.31	269.34	233.19	190.00
Machine labour	1.78	2.96	1.18	4.96	3.54	61.54	70.08	37.54	58.83	70.44
Irrigation	0.16	2.67	2.75	3.78	1.38	356.38	296.60	201.02	174.92	104.21
Fertiliser & manure	6.10	25.54	9.15	16.23	5.43	242.40	242.91	199.31	158.60	167.44
Seeds	92.82	88.93	87.32	88.02	83.13	201.12	222.10	210.15	215.82	184.52
Rent	0.00	0.00	0.00	0.00	2.54	15.13	11.92	0.00	0.00	0.00
Capital Costs	54.13	44.45	36.11	32.83	30.12	344.59	305.98	245.65	228.62	167.55
Labour & Material Inputs										
Human labour (hrs)	406.88	363.66	333.47	309.55	274.40	481.56	454.60	389.01	366.61	361.23
Bullock labour (pair hrs)	186.43	177.44	166.90	146.94	129.87	193.12	163.59	141.10	121.89	124.47
Fertilizer (Kgs.)	0.00	8.09	2.68	1.04	0.72	45.56	50.61	42.93	31.89	35.89
Manure (qtls.)	1.61	2.37	9.39	17.11	1.23	1.85	4.76	3.46	0.29	0.47
Seed (Kgs.)	105.20	108.45	107.05	110.21	100.50	100.54	107.21	103.96	105.48	104.16

TABLE 4.3A. PROFIT EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF RETURN TO INVESTMENT)

	Punjab									
	1974-75 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	10	10	10	10	10	59	60	60	60	60
Area (ha)	5.15	3.33	4.44	2.59	3.4	3.20	3.49	2.64	2.92	2.37
Yield per ha (qtls)	34.30	30.16	26.16	25.28	20.95	45.45	38.50	33.62	30.89	25.41
Input output ratio	1.41	1.40	1.35	1.19	1.01	1.75	1.56	1.47	1.30	1.14
Net income (Rs/ha)	1,226.01	1,072.51	842.71	500.15	15.72	3,746.90	2,653.90	2,061.27	1,339.21	606.15
Return over Investment (Rs)	2,431.83	2,036.13	1,831.38	1,392.12	833.05	5,716.73	4,290.13	3,444.00	2,632.21	1,478.91
Cost per ha (Rs)										
Cost A_1	1,483.82	1,378.31	1,088.05	1,548.79	1,499.88	2,458.17	2,513.17	2,296.46	2,472.10	2,320.87
Cost A_2+FL	1,798.39	1,689.53	1,409.22	1,776.99	1,772.45	3,049.83	3,064.02	2,972.71	3,241.16	3,414.62
Cost C_2	3,004.21	2,653.16	2,397.89	2,668.96	2,589.78	5,019.66	4,700.26	4,355.44	4,534.16	4,287.38
Operational cost	1,720.69	1,603.52	1,281.72	1,728.54	1,696.64	2,816.35	2,871.37	2,748.33	2,904.27	2,863.85
Fixed cost	1,283.51	1,049.64	1,116.17	940.42	893.13	2,203.31	1,828.88	1,607.11	1,629.89	1,423.54
Value of Output (Rs)										
Main product	3,876.25	3,407.42	2,957.59	2,857.16	2,367.48	7,409.74	6,262.68	5,453.81	4,996.36	4,115.86
By product	353.96	318.24	283.01	311.95	238.02	1,356.81	1,091.47	962.90	877.02	777.67
Gross value of output	4,230.22	3,725.67	3,240.60	3,169.11	2,605.50	8,766.55	7,354.16	6,416.71	5,873.38	4,893.53
Cost per Quintal (Rs)										
Cost A_1	39.64	41.80	37.96	55.23	65.06	45.71	55.59	57.74	68.15	77.63
Cost A_2+FL	48.04	51.24	49.16	63.36	76.88	56.71	67.78	74.75	89.36	114.21
Cost C_2	80.25	80.47	83.65	95.17	112.33	93.34	103.97	109.51	125.00	143.40
Input Costs (Rs)										
Human labour	503.34	602.46	500.84	491.75	453.85	822.20	824.22	824.09	916.73	941.03
Family labour	236.87	225.21	193.67	179.75	196.76	358.17	358.20	451.87	432.17	542.98
Bullock labour	236.10	267.54	175.19	184.63	194.70	120.28	177.00	222.85	207.63	320.86
Machine labour	171.30	155.54	101.86	129.67	98.69	691.93	715.86	595.66	658.61	553.11
Irrigation	109.60	150.19	100.65	95.96	95.04	196.09	190.70	167.84	216.82	275.85
Fertiliser & manure	479.20	583.81	459.88	375.28	272.12	920.26	862.31	860.93	845.54	746.49
Seeds	99.93	104.59	113.55	102.33	101.55	218.64	214.70	217.54	221.67	215.22
Rent	77.70	86.01	127.50	48.45	75.81	233.48	192.65	224.38	336.89	550.78
Capital Costs	171.59	181.07	211.22	114.40	118.21	485.35	441.20	326.40	368.22	353.30
Labour & Material Inputs										
Human labour (hrs)	484.52	559.86	473.89	535.59	551.12	467.50	450.56	444.14	448.71	456.58
Bullock labour (pair hrs)	41.92	93.63	84.49	87.73	95.30	23.09	29.99	38.02	34.28	52.94
Fertilizer (Kgs)	108.51	87.35	56.19	88.05	91.76	188.96	174.27	172.35	172.07	149.43
Manure (qtls)	13.41	11.25	3.07	0.00	3.41	5.81	5.50	11.43	9.77	8.66
Seed (Kgs)	76.88	78.86	77.15	86.73	80.82	107.79	106.37	105.68	108.02	106.72

TABLE 4.3B. PROFIT EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF RETURN TO INVESTMENT)

	Haryana									
	1974-75 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	10	10	10	10	10	33	33	33	33	33
Area (ha)	3.01	4.32	4.05	3.61	2.97	2.54	3.03	3.00	2.37	2.25
Yield per ha (qtls)	25.99	25.28	22.36	19.89	16.20	32.96	29.12	26.79	24.45	19.58
Input output ratio	2.02	1.60	1.40	1.26	0.97	2.35	1.51	1.32	1.14	0.84
Net income (Rs/ha)	2,036.65	1,288.73	870.83	518.77	-56.71	4,460.47	1,788.31	1,174.90	544.64	-688.03
Return over Investment (Rs)	2,880.82	2,159.90	1,569.35	1,162.55	482.90	5,488.53	2,879.66	2,283.87	1,661.2	3,203.45
Cost per ha (Rs)										
Cost A_1	964.91	1,128.10	1,219.23	1,078.24	1,262.89	1,864.11	2,043.27	2,176.37	2,242.92	2,699.06
Cost A_2+FL	1,154.00	1,287.74	1,489.31	1,357.39	1,650.21	2,284.65	2,445.53	2,577.06	2,802.35	3,279.20
Cost C_2	1,998.16	2,158.91	2,187.83	2,001.17	2,189.82	3,312.70	3,536.88	3,686.03	3,918.95	4,170.68
Operational cost	1,154.00	1,287.74	1,431.70	1,325.51	1,599.51	2,284.65	2,445.53	2,577.06	2,802.35	3,241.79
Fixed cost	844.16	871.17	756.13	675.66	590.31	1,028.05	1,091.35	1,108.97	1,116.59	928.89
Value of Output (Rs)										
Main product	3,371.33	2,907.08	2,616.56	2,203.64	1,854.36	6,905.89	4,627.02	4,201.50	3,855.13	2,974.54
By product	663.49	540.56	442.10	316.30	278.75	867.28	698.17	659.43	608.45	508.11
Gross value of output	4,034.82	3,447.64	3,058.66	2,519.94	2,133.11	7,773.18	5,325.18	4,860.93	4,463.58	3,482.65
Cost per Quintal (Rs)										
Cost A_1	31.02	40.86	46.64	47.40	67.77	50.24	60.97	70.22	79.24	117.74
Cost A_2+FL	37.10	46.64	56.97	59.67	88.56	61.57	72.97	83.15	99.00	79.17
Cost C_2	64.24	78.19	83.69	87.97	117.52	89.28	105.54	118.93	138.45	113.05
Input Costs (Rs)										
Human labour	342.25	344.21	359.78	375.99	419.65	540.00	625.31	598.39	674.80	787.80
Family Labour	189.09	159.65	212.46	247.27	336.62	420.54	402.26	400.69	559.43	542.73
Bullock labour	279.87	277.80	298.81	294.67	348.79	347.17	283.26	238.53	337.37	413.05
Machine labour	112.63	187.61	124.79	44.29	230.51	326.67	409.67	502.92	514.21	851.59
Irrigation	88.29	98.41	159.99	175.52	149.06	283.72	320.22	386.00	383.11	460.56
Fertiliser & manure	62.75	98.62	203.59	192.03	162.04	590.49	575.56	626.54	608.33	623.64
Seeds	199.32	203.13	212.60	208.63	214.33	310.62	329.16	387.74	423.20	398.31
Rent	0.00	0.00	57.62	31.88	50.70	0.00	0.00	0.00	0.00	37.41
Capital Costs	86.67	113.14	127.62	109.33	135.24	482.88	342.53	407.47	453.20	443.76
Labour & Material Inputs										
Human labour (hrs)	468.32	491.66	492.54	560.69	570.36	409.59	445.65	400.69	453.09	447.65
Bullock labour (pair hrs)	115.11	120.23	132.34	183.21	163.45	77.01	66.15	58.97	75.82	88.18
Fertilizer (Kgs)	13.30	22.81	40.94	36.78	35.07	118.04	114.68	125.23	124.96	117.22
Manure (qtls)	2.78	0.00	1.39	8.62	0.38	0.00	0.00	0.00	0.00	8.59
Seed (Kgs)	102.76	103.25	106.30	104.25	107.17	110.88	110.50	110.67	108.86	109.31

TABLE 4.3C. PROFIT EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF RETURN TO INVESTMENT)

	Uttar Pradesh									
	1975-76 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	20	21	21	21	20	128	128	128	128	128
Area (ha)	1.45	1.5	1.19	1.08	0.7	1.34	1.34	1.34	1.34	1.34
Yield per ha (qtls)	34.15	24.16	22.33	19.62	15.01	32.90	26.80	24.53	21.42	14.79
Input output ratio	1.39	1.20	1.11	0.94	0.66	1.86	1.49	1.31	1.11	0.84
Net income (Rs/ha)	1,156.86	479.21	269.67	-148.66	-859.78	2,855.88	1,622.69	1,054.98	388.85	-520.52
Return over Investment (Rs)	2,351.29	1386.68	999.57	595.61	-326.16	3,984.88	2,558.39	1,976.39	1,251.94	176.10
Cost per ha (Rs)										
Cost A_1	1,386.54	1,183.13	1,332.41	1,356.30	1,509.49	1,821.12	1,908.36	1,992.82	2,005.81	1,930.97
Cost A_2+FL	1,786.33	1,485.27	1,646.28	1,697.21	1,984.46	2,193.20	2,355.41	2,447.29	2,543.14	2,467.14
Cost C_2	2,980.77	2,392.74	2,376.18	2,441.48	2,518.07	3,322.20	3,291.11	3,368.70	3,406.24	3,163.75
Operational cost	1,786.33	1,485.27	1,642.51	1,695.47	1,972.14	2,193.20	2,352.83	2,447.29	2,532.67	2,448.29
Fixed cost	1,194.43	907.47	733.67	746.01	545.94	1,129.00	938.28	921.41	873.56	715.46
Value of Output (Rs)										
Main product	3,312.86	2393.10	2,194.27	1,917.23	1,415.76	5,220.53	4,212.75	3,791.42	3,247.71	2,254.40
By product	824.76	478.85	451.57	375.59	242.53	957.55	701.05	632.27	547.37	388.84
Gross value of output	4,137.62	2,871.95	2,645.84	2,292.82	1,658.29	6,178.08	4,913.80	4,423.69	3,795.08	2,643.24
Cost per Quintal (Rs)										
Cost A_1	32.51	40.80	49.48	57.81	85.88	46.77	61.05	69.64	80.15	111.36
Cost A_2+FL	41.89	51.22	61.13	72.34	112.90	56.33	75.35	85.52	101.62	142.28
Cost C_2	69.89	82.52	88.23	104.07	143.26	85.33	105.28	117.71	136.11	182.46
Input Costs (Rs)										
Human labour	562.81	424.98	432.77	418.83	625.52	681.19	710.43	724.17	769.57	753.236
Family labour	399.79	302.13	310.09	339.17	462.64	372.08	444.48	454.48	526.87	517.32
Bullock labour	505.61	501.67	546.78	616.18	709.81	344.03	486.30	484.92	600.74	638.14
Machine labour	92.92	56.11	73.34	65.15	34.50	366.52	329.87	309.19	272.19	263.29
Irrigation	109.48	135.07	103.84	147.81	133.75	274.05	312.35	353.48	310.37	275.20
Fertiliser & manure	371.80	147.14	258.86	208.45	227.68	497.48	446.60	520.67	532.08	489.34
Seeds	128.45	126.48	134.07	131.17	132.94	232.66	248.82	246.86	241.39	233.61
Rent	0.00	0.00	3.77	1.74	12.32	0.00	2.58	0.00	10.47	18.85
Capital Costs	193.35	176.48	125.27	101.40	111.58	242.22	224.87	219.70	231.24	209.78
Labour & Material Inputs										
Human labour (hrs)	843.13	695.64	755.08	820.95	989.35	541.73	611.08	627.88	660.02	617.16
Bullock labour (pair hrs)	299.03	241.26	273.26	303.16	358.39	97.87	138.07	139.32	167.67	182.73
Fertilizer (Kgs)	62.33	27.43	36.60	44.75	42.95	93.91	84.90	93.51	92.65	82.39
Manure (qtls)	27.90	8.15	38.15	1.55	21.01	6.26	7.08	11.50	8.55	11.49
Seed (Kgs)	114.35	117.88	111.22	117.39	116.48	124.73	126.62	126.91	128.35	116.76

TABLE 4.3D. PROFIT EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF RETURN TO INVESTMENT)

	Rajasthan									
	1974-75 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	18	18	18	18	18	69	69	70	69	69
Area (ha)	1.69	1.48	1.10	4.27	1.25	0.82	0.95	1.06	1.06	0.72
Yield per ha (qtls)	35.84	25.52	17.60	12.79	9.43	32.77	24.93	18.93	14.57	12.19
Input output ratio	1.81	1.64	1.27	1.04	0.76	2.37	1.78	1.53	1.23	0.78
Net income (Rs/ha)	3,043.39	1,660.27	638.05	92.38	-536.37	4,425.96	2,386.00	1,454.48	604.67	-745.45
Return over Investment (Rs)	4,425.93	2,251.67	1,277.24	647.36	30.75	5,407.14	3,224.35	2,102.95	1,126.53	-510.02
Cost per ha (Rs)										
Cost A_1	1,661.98	1,382.01	1,297.66	1,321.78	1,313.46	1,235.27	1,385.89	1,312.84	1,269.31	1,655.04
Cost A_2+FL	1,955.94	1,729.28	1,722.88	1,667.85	1,664.01	2,255.30	2,232.07	2,080.69	2,116.51	3,171.47
Cost C_2	3,338.48	2,590.68	2,362.07	2,222.83	2,231.13	3,236.48	3,070.42	2,729.16	2,638.37	3,406.90
Operational cost	1,933.30	1,655.58	1,702.37	1,630.97	1,627.14	2,067.23	2,196.37	1,998.20	2,014.04	2,891.33
Fixed Cost	1,405.18	935.10	659.70	581.86	603.99	1169.25	876.05	730.96	624.33	515.57
Value of Output (Rs)										
Main product	5,749.56	3,742.21	2,543.18	2,029.21	1,419.33	6,134.88	4,460.73	3,380.97	2,611.72	2,123.61
By product	632.31	508.74	456.94	286.00	203.43	1,527.56	995.69	802.67	631.32	537.84
Gross value of output	6,381.87	4,250.95	3,000.12	2,315.21	1,694.76	7,662.44	5,456.42	4,183.64	3,243.04	2,661.45
Cost per Quintal (Rs)										
Cost A_1	41.78	51.73	62.50	90.58	122.57	30.18	45.45	56.06	70.16	108.37
Cost A_2+FL	49.17	64.72	82.98	114.29	155.28	55.10	73.20	88.84	117.00	207.66
Cost C_2	83.92	96.97	113.77	152.33	208.20	79.07	100.69	116.53	145.84	223.07
Input Costs (Rs)										
Human labour	594.60	483.11	545.17	443.44	423.76	956.35	901.77	814.67	863.24	1,324.02
Family labour	290.60	300.55	423.03	328.99	346.64	831.96	810.48	685.36	744.73	1,236.29
Bullock labour	233.81	276.40	424.20	370.02	534.70	295.98	391.87	357.72	478.52	496.56
Machine labour	188.41	39.15	36.87	28.81	21.82	329.82	262.67	226.55	144.33	188.92
Irrigation	251.13	331.77	225.85	383.00	247.28	295.45	333.88	364.31	315.72	636.01
Fertiliser & manure	341.36	251.85	214.06	99.29	97.76	149.98	260.18	197.03	158.88	262.92
Seeds	270.33	232.10	210.64	262.18	263.00	244.87	251.00	243.77	256.67	264.31
Rent	3.36	46.72	2.19	17.08	3.91	188.07	35.70	82.48	102.47	280.14
Capital Costs	326.70	207.13	139.14	186.82	295.62	314.11	350.53	357.55	388.24	375.89
Labour & Material Inputs										
Human labour (hrs)	711.96	764.76	819.37	981.04	880.60	730.95	693.05	645.73	689.51	914.30
Bullock labour (pair hrs)	177.25	224.92	275.40	317.17	355.46	98.95	127.95	189.89	181.14	179.80
Fertilizer (Kgs)	52.89	38.73	34.06	12.40	16.63	28.46	48.55	35.32	36.60	29.27
Manure (qtls)	37.90	21.76	14.40	8.76	2.54	0.77	1.90	1.72	1.31	13.17
Seed (Kgs)	118.02	107.09	107.78	130.72	124.62	126.99	128.07	122.07	128.91	125.33

TABLE 4.3E. PROFIT EFFICIENCY: DISTRIBUTION OF INPUT COSTS PER HECTARE
(SAMPLE FARMS ARRANGED IN DESCENDING ORDER OF RETURN TO INVESTMENT)

	Madhya Pradesh									
	1970-71 Quintiles					1984-85 Quintiles				
Item	I	II	III	IV	V	I	II	III	IV	V
No. of Holdings	53	53	54	53	53	77	77	77	77	77
Area (ha)	4.96	4.93	4.88	6.18	5.44	1.53	1.90	2.11	2.39	1.53
Yield per ha (qtls)	12.11	8.68	7.33	5.38	4.40	24.13	15.03	11.62	10.07	8.99
Input output ratio	2.63	1.93	1.64	1.35	0.87	2.00	1.64	1.52	1.29	0.93
Net income (Rs/ha)	688.86	371.47	248.44	126.52	-56.93	2,674.99	1,276.65	852.35	475.07	-133.35
Return over Investment (Rs)	750.34	415.26	290.43	160.47	-45.18	3,926.13	2,082.61	1,442.79	1,026.98	520.97
Cost per ha (Rs)										
Cost A_1	299.36	298.69	273.68	262.20	338.36	1,174.03	977.72	795.95	890.97	1,129.70
Cost A_2+FL	360.83	356.96	344.79	326.44	432.87	1,429.21	1,200.42	1,051.13	1,113.68	1,361.42
Cost C_2	422.31	400.76	386.78	360.40	444.62	2,680.35	2,006.39	1,641.57	1,665.59	2,015.74
Operational Cost	360.83	354.42	344.79	326.44	432.87	1,429.21	1,199.13	1,051.13	1,112.38	1,361.42
Fixed cost	61.48	46.33	41.99	33.96	11.75	1,251.13	807.26	590.43	553.21	654.32
Value of Output (Rs)										
Main product	980.57	672.59	562.33	421.33	338.34	4,136.56	2,624.41	2,009.39	1,748.44	1,509.49
By product	130.60	99.63	72.89	65.59	49.35	1,218.78	658.63	484.53	392.22	372.90
Gross value of output	1,111.17	7,772.22	635.22	486.91	387.69	5,355.34	3,283.04	2,493.92	2,140.66	1,882.39
Cost per Quintal (Rs)										
Cost A_1	21.82	29.99	33.05	42.16	67.06	37.59	51.99	55.21	72.26	100.72
Cost A_2+FL	26.30	35.84	41.63	52.49	85.79	45.76	63.83	72.91	90.32	121.38
Cost C_2	30.78	40.23	46.70	57.95	88.11	85.81	106.68	113.86	135.09	179.72
Input Costs (Rs)										
Human labour	116.98	109.26	108.90	114.60	152.58	428.55	347.20	342.30	354.23	462.81
Family Labour	61.48	55.73	71.10	64.24	94.51	255.19	221.41	231.73	241.78	327.60
Bullock labour	90.62	100.39	96.71	81.38	114.65	230.07	231.13	253.64	304.05	389.13
Machine labour	3.55	0.00	0.00	5.74	2.14	69.45	77.16	52.97	66.80	32.05
Irrigation	3.82	4.52	2.08	0.13	0.16	294.33	222.12	153.11	132.99	330.59
Fertiliser & manure	13.81	21.21	12.01	7.05	8.35	350.77	217.41	106.88	166.83	168.77
Seeds	91.51	86.56	85.60	88.23	88.53	219.41	218.14	199.73	201.29	195.15
Rent	0.00	2.54	0.00	0.00	0.00	0.00	1.30	0.00	0.00	25.75
Capital Costs	54.21	34.26	35.23	28.82	45.65	365.72	253.05	200.30	178.11	295.21
Labour & Material Inputs										
Human labour (hrs)	365.27	336.57	308.71	303.74	372.13	481.47	392.58	352.65	359.08	461.23
Bullock labour (pair hrs)	173.00	162.24	147.30	140.87	182.82	132.05	131.73	145.31	149.36	185.74
Fertilizer (Kgs)	0.87	7.13	3.11	1.31	0.05	75.98	41.02	25.75	31.43	32.69
Manure (qtls)	16.60	9.36	1.42	2.13	2.21	0.47	3.00	2.29	3.35	1.72
Seed (Kgs)	108.34	106.92	105.49	106.22	104.02	109.44	102.54	104.16	105.91	99.31

TABLE 4.4. PER HECTARE DIFFERENTIAL IN YIELD, COST OF PRODUCTION AND INPUT STRUCTURE BETWEEN MOST AND LEAST EFFICIENT FARMERS ACCORDING TO TECHNICAL EFFICIENCY

State	Year	Yield (q/ha)	Cost C_2 (Rs/ql)	Human Labour (days)	Bullock Labour (pair days)	Fertiliser (kg)	Machine Labour (Rs)	Irrigation (Rs)	Cost C_2 (Rs/ha)
Punjab	1974-75	17.26	-20.08	9.19	-2.59	63.14	14.93	12.27	1,093
	1985-86	23.30	-32.81	9.95	-1.17	64.18	280.60	38.03	1,697
Haryana	1974-75	13.09	-30.40	2.56	-4.41	12.66	-41.54	127.59	608
	1984-85	17.26	-59.41	7.61	1.90	31.43	90.36	-67.27	602
Uttar Pradesh	1975-76	20.62	-63.58	-2.68	-1.53	23.37	96.77	13.90	871
	1984-85	22.58	-76.43	9.53	-9.02	52.58	276.85	216.42	1,377
Rajasthan	1974-75	27.56	-125.99	-18.98	-14.12	42.42	153.59	-121.36	1,138
	1984-85	26.68	-109.12	35.54	5.50	40.57	238.89	-28.58	1,565
Madhya	1970-71	9.27	-45.66	17.47	7.20	8.55	-2.94	6.11	180
Pradesh	1984-85	18.36	-58.49	25.74	-0.01	76.72	69.21	334.33	1,747

TABLE 4.5. PER HECTARE DIFFERENTIAL IN YIELD, COST OF PRODUCTION AND INPUT STRUCTURE BETWEEN MOST AND LEAST EFFICIENT FARMERS ACCORDING TO ALLOCATIVE EFFICIENCY

State	Year	Yield (q/ha)	Cost C_2 (Rs/ql)	Human Labour (days)	Bullock Labour (pair days)	Fertiliser (kg)	Machine Labour (Rs)	Irrigation (Rs)	Cost C_2 (Rs/ha)
Punjab	1974-75	7.16	-42.95	-10.16	-1.82	-37.53	-72.61	-14.56	-471
	1985-86	14.84	-60.11	-1.89	-2.06	17.96	-90.18	-120.41	-300
Haryana	1974-75	9.37	-61.92	-21.52	-5.95	-15.79	-123.81	-77.70	-472
	1984-85	10.74	-112.85	-4.98	-2.34	-16.51	-529.62	-210.14	-1,693
Uttar Pradesh	1975-76	12.54	-83.58	-44.15	-15.48	1.14	-15.34	-16.24	-357
	1984-85	15.20	-104.96	-10.75	-9.92	-5.01	95.56	-87.39	-404
Rajasthan	1974-75	18.02	-183.60	-47.85	-20.46	15.38	39.93	-330.19	-432
	1984-85	18.36	-167.99	-45.44	-8.65	14.37	132.71	-522.67	-724
Madhya	1970-71	4.87	-66.77	-16.56	-7.07	0.72	1.76	1.22	-204
Pradesh	1984-85	9.00	-109.23	-15.04	-8.58	-9.67	8.90	-252.17	-446

TABLE 4.6. PER HECTARE DIFFERENTIAL IN YIELD, RETURN TO INVESTMENT AND INPUT STRUCTURE BETWEEN MOST AND LEAST EFFICIENT FARMERS ACCORDING TO PROFIT EFFICIENCY

State	Year	Yield (q/ha)	Return to Investment (Rs/ql)	Human Labour (days)	Bullock Labour (pair days)	Fertiliser (kg)	Machine Labour (Rs)	Irrigation (Rs)	Cost C_2 A_2+FL (Rs/ha)
Punjab	1974-75	13.35	1599	-8.33	-6.67	16.75	72.61	14.56	26
	1985-86	20.04	4238	1.37	-3.73	39.53	138.82	-79.76	-365
Haryana	1974-75	9.79	2398	-12.76	-6.04	-21.77	-117.88	-60.77	-496
	1984-85	13.38	5286	-4.76	-1.40	0.82	-524.92	-176.84	-995
Uttar	1975-76	19.14	2678	-18.28	-7.42	19.38	58.42	-24.27	-198
Pradesh	1984-85	18.11	3809	-9.43	-10.61	11.52	103.23	-1.15	-274
Rajasthan	1974-75	26.41	4395	-21.08	-22.28	36.26	166.59	3.85	292
	1984-85	20.58	5917	-22.92	-10.11	-0.81	140.90	-340.56	-916
Madhya	1970-71	7.71	796	-0.86	-1.23	0.82	1.30	3.66	-72
Pradesh	1984-85	15.14	3405	2.53	-6.71	43.29	37.40	-36.26	68

TABLE 4.7. RATE OF RETURN OVER INVESTMENT

(in percentage)

State	Mid-seventies		Mid-eighties	
	ME	LE	ME	LE
Punjab	135.22	47.01	187.44	43.31
Haryana	249.64	29.26	240.24	6.20
Uttar Pradesh	131.63	(-)16.44	181.69	7.14
Rajasthan	226.28	1.85	239.75	(-)16.08
Madhya Pradesh	207.95	(-)10.44	274.71	38.27

$$\text{Rate of return over investment} = \frac{\text{Gross value of output} - \text{Cost } A_2 + FL}{\text{Cost } A_2 + FL} \times 100$$

ME = Most efficient category of farmers

LE = Least efficient category of farmers

TABLE 4.8. AVERAGE YIELD AND CO-EFFICIENT OF VARIATION (CV) ACCORDING TO TECHNICAL EFFICIENCY

State	Year	Most Efficient Farmers		Least Efficient Farmers	
		Yield (q/ha)	CV	Yield (q/ha)	CV
Punjab	1974-75	35.65	9.40	18.39	19.49
	1985-86	47.02	7.92	23.72	13.62
Haryana	1974-75	28.02	6.64	14.93	13.40
	1984-85	34.66	10.29	17.40	22.16
Uttar Pradesh	1975-76	35.54	16.98	14.92	14.33
	1984-85	35.00	12.63	12.42	32.75
Rajasthan	1974-75	36.92	29.61	9.36	11.77
	1984-85	34.71	15.46	8.03	35.48
Madhya Pradesh	1970-71	12.87	25.42	3.60	15.15
	1984-85	25.05	23.46	6.69	28.91

TABLE 4.9. AVERAGE COST OF PRODUCTION (C_2) AND CO-EFFICIENT OF VARIATION (CV) ACCORDING TO COST EFFICIENCY

State	Year	Most Efficient Farmers		Least Efficient Farmers	
		Yield (q/ha)	CV	Yield (q/ha)	CV
Punjab	1974-75	68.74	11.11	111.69	14.94
	1985-86	88.06	10.02	148.17	5.91
Haryana	1974-75	60.08	15.08	122.00	18.67
	1984-85	79.03	24.21	191.88	16.21
Uttar Pradesh	1975-76	64.81	20.23	148.39	12.46
	1984-85	80.50	49.10	185.46	13.59
Rajasthan	1974-75	71.13	21.09	254.73	12.96
	1984-85	72.34	105.36	240.33	15.40
Madhya Pradesh	1970-71	26.67	30.06	93.44	22.36
	1984-85	74.78	31.65	184.01	12.61

TABLE 4.10. AVERAGE RETURN TO INVESTMENT AND CO-EFFICIENT OF VARIATION (CV) ACCORDING TO PROFIT EFFICIENCY

State	Year	Most Efficient Farmers		Least Efficient Farmers	
		Return to Investment (Rs/ha)	CV	Return to Investment (Rs/ha)	CV
Punjab	1974-75	2,432	6.12	833	31.77
	1985-86	5,717	14.16	1,479	49.08
Haryana	1974-75	2,881	11.71	481	54.14
	1984-85	5,489	97.10	203	532.24
Uttar Pradesh	1975-76	2,351	25.08	-326	137.17
	1984-85	3,985	25.23	176	317.90
Rajasthan	1974-75	4,426	112.86	31	118.22
	1984-85	5,407	30.96	-510	132.57
Madhya Pradesh	1970-71	750	32.27	-45	410.95
	1984-85	3,926	34.46	521	292.32

TABLE 4.11. PRODUCTIVITY OF INPUTS

State	Input	Output	Technical Efficiency				Allocative Efficiency				Profit Efficiency			
			Mid-seventies		Mid-eighties		Mid-seventies		Mid-eighties		Mid-seventies		Mid-eighties	
			ME	LE	ME	LE	ME	LE	ME	LE	ME	LE	ME	LE
Punjab	A_2+FL	: GVO	2.31	1.72	2.49	1.73	2.60	1.46	2.68	1.55	2.35	1.47	2.87	1.43
	I+FM+S	: GVO	5.03	4.37	6.27	4.12	7.55	3.86	6.43	3.82	6.14	5.56	6.57	3.95
Haryana	A_2+FL	: GVO	2.53	1.56	2.42	1.35	3.53	1.29	2.78	1.10	3.50	1.29	3.40	1.06
	I+FM+S	: GVO	6.08	4.77	4.85	2.61	11.46	4.31	5.28	2.41	11.52	4.06	6.56	2.35
Uttar	A_2+FL	: GVO	2.06	0.95	2.35	1.25	2.14	0.87	2.80	1.12	2.32	0.84	2.82	1.07
Pradesh	I+FM+S	: GVO	6.95	4.27	5.25	3.20	6.20	3.58	6.55	2.68	6.79	3.35	6.15	2.65
Rajasthan	A_2+FL	: GVO	3.22	1.03	2.91	1.23	3.45	0.81	3.61	0.88	2.36	1.02	3.40	0.84
	I+FM+S	: GVO	7.70	2.53	9.06	2.86	8.68	1.89	11.29	2.29	7.40	2.79	11.10	2.29
Madhya	A_2+FL	: GVO	2.47	1.13	3.16	1.63	2.16	1.02	4.28	1.35	3.08	0.90	3.75	1.38
Pradesh	I+FM+S	: GVO	8.09	3.87	5.12	4.59	9.59	4.51	8.97	2.76	10.18	4.00	6.19	2.71

ME = Most Efficient Category of farmers
LE = Least Efficient Category of farmers
A_2+FL = Cost A_2 + imputed value of family labour
I+FM+S = Monetised value of irrigation + value of fertilizers & manures + value of seeds.
GVO = Gross value of output.

TABLE 4.12. DIFFERENTIAL BETWEEN MOST AND LEAST EFFICIENT FARMERS: COST ESTIMATES, YIELD AND RETURN TO INVESTMENT (PROFIT) ACCORDING TO EFFICIENCY CRITERIA

State	Efficiency Criteria	Cost of Cultivation (Rs/ha)		Yield (q/ha)		Cost of Production (Rs/q)		Profit (GVO-Cost A_2+FL) (Rs/ha)	
		I	II	I	II	I	II	I	II
Punjab	Technical Efficiency	1,093 (52)	1,697 (45)	17.26 (94)	23.30 (98)	-20.28 (-20)	-32.81 (-25)	1,513	3,390
	Cost Efficiency	-471 (-18)	-300 (-7)	7.16 (33)	14.84 (58)	-42.95 (-38)	-60.11 (-41)	1,339	3,104
	Profit Efficiency	414 (16)	732 (17)	13.35 (64)	20.04 (79)	-32.08 (-29)	-50.06 (-35)	1,599	4,238
Haryana	Technical Efficiency	608 (34)	602 (19)	13.09 (88)	17.26 (99)	-30.40 (-29)	-59.41 (-38)	1,610	2,883
	Cost Efficiency	-472 (-20)	-1,693 (-37)	9.37 (56)	10.74 (52)	-61.92 (-51)	-112.85 (-59)	2,318	3,375
	Profit Efficiency	-192 (-9)	-858 (-21)	9.79 (79)	13.38 (68)	-53.28 (-46)	-23.77 (-18)	2,398	5,286
Uttar	Technical Efficiency	871 (37)	1,377 (55)	20.62(138)	22.58 (182)	-63.58 (-46)	-76.43 (-45)	2,289	3,193
Pradesh	Cost Efficiency	-357 (-14)	-404 (-13)	12.54 (83)	15.20 (103)	-83.58 (-56)	-104.96 (-57)	1,970	3,238
	Profit Efficiency	463 (18)	156 (15)	19.14 (128)	18.11 (122)	-73.37 (-51)	-97.13 (-53)	2,678	3,809
Rajasthan	Technical Efficiency	1,138 (52)	1,565 (77)	27.56 (294)	26.68 (332)	-125.99 (-61)	-109.12 (-56)	4,239	4,631
	Cost Efficiency	-432 (-17)	-724 (-22)	18.02 (204)	18.36 (166)	-183.60 (-72)	-167.99 (-70)	3,629	5,024
	Profit Efficiency	1,107 (50)	-171 (-5)	26.41 (272)	20.58 (169)	-124.28 (-60)	-144.00 (-65)	4,395	5,917
Madhya	Technical Efficiency	180 (53)	1,747 (136)	9.27 (258)	18.36 (274)	-45.66 (-56)	-58.49 (-38)	631	3,177
Pradesh	Cost Efficiency	-204 (-41)	-446 (-20)	4.87 (105)	9.00 (90)	-66.77 (-70)	-109.23 (-59)	583	2,559
	Profit Efficiency	-23 (-5)	664 (33)	7.71 (175)	15.15 (168)	-57.33 (-65)	-93.91 (-52)	796	3,405

Notes:- I: Seventies; II: Eighties; GVO: Gross value of output; ( ) percentage differential.

ANNEXURE - A

Cost of Production Studies

The estimates of farm level cost structure of wheat were obtained from the data generated under the Comprehensive Scheme for Studying the Cost of Production of Principal Crops in India. The cost estimates under the scheme being generated since 1970-71 are: paddy, wheat, sorghum (jowar), pearl millets (bajra), finger millets (ragi), maize, pigeon pea (tur), green gram (moong), black gram (urad), chick pea (gram), groundnut, rapeseed/mustard, safflower, sunflower seed, soyabean, jute, cotton, VFC tobacco and sugarcane.

Coverage. The scheme envisaged collection of state-wise representative data on inputs and outputs in physical and monetary terms and estimating therefrom the cost of cultivation per hectare according to various cost concepts, yield per hectare and cost of production per quintal of the principal crops grown in the country. The crops covered under the survey account for over 90 percent of the total cropped area and represent all the principal crops grown.

Agency. The responsibility relating to field work for collection of cost data for principal crops under the scheme has been entrusted to agricultural Universities in 13 States and general Universities in 3 States.

Frequency of survey. The studies were conducted on a continuing basis but the coverage of crops in different States was taken up by rotation. A detailed survey was carried out in respect of the principal crops, which may differ from state to state, for a period of one year, followed by sub-sample surveys for the crops concerned in the subsequent few years. It may be added that, although for a particular year the samples for study are selected with reference to the specified principal crops, the data are collected for all the crops on the sample holdings.

Methodology

Sampling. The technical design of the study was three stage stratified random sampling with tehsil (sub- division of a district) as the first stage sampling unit, a cluster of three villages as the secondary stage sampling unit and an operational holding within the cluster as the third and ultimate stage sampling unit. For the purpose of study states were demarcated into homogeneous zones depending on the cropping patterns, soil types, rainfall and irrigation. The total number of first stage units (tehsil) to be selected for study in a state was decided, taking into account the need for getting cost estimates with reasonable precision and the size of the state concerned.

The first stage sampling units, i.e., tehsils, were allocated to the different zones in proportion to the area under the selected principal crop in the zones concerned to the total area under the crop in the State. Within each zone, the allotted number of tehsils were selected with replacement and probability proportional to the area under the principal crop taken up for study. In each selected tehsil, after selecting one nucleus village with probability proportional to size, as in the selection of tehsil, a cluster of three villages was formed around the nucleus village as a second stage unit.

For preparing a sample frame, a preliminary survey was conducted in each village-cluster. All operational holding therein were listed in an ascending order of the size and then stratified into 5 size-classes in such a manner that the total operated area falling under the different size-classes was almost equal. Two holdings were then selected randomly from each size-class. However, if in any village/cluster a particular size class does not contain even two holdings, more holdings are selected from the adjacent size classes to make up the deficit. Thus, ten holdings were so obtained from a cluster to form the sample for detailed study.

A detailed study in respect of each principal crop was followed by sub-sample survey for it for a few years. The size of sub-sample was generally one-fourth of the main sample. Thus, if the main sample consists of 20 clusters of villages, the sub-sample would have five such clusters. For the purpose of selection of the clusters for the sub-sample, they are first allocated to the different zones formed in the states in proportion, as far as possible, for the area under the crop in the state. This done, the sub-sample clusters thus allotted to the different zones, are selected randomly without replacement from the clusters originally selected for the main sample in the zones concerned. In the clusters so selected, the sample holdings continue to be studied as before when they were part of the main sample. The main sample and the sub-sample clusters were, however, changed after every few years, as per procedure indicated above.

From the data canvassed in a comprehensive manner in the holdings selected for the studies through cost accounting method, costs were generated according to different concepts.

Recent Development/Improvements:

The cost estimates generated by the Directorate of Economics and Statistics under the Comprehensive Scheme for studying the cost of cultivation of crops suffered from some deficiencies and these were criticized at different fora. A Special Expert Committee on Cost of Production Estimates set up by the Ministry of Agriculture, Government of India, in 1979 with Dr. S.R. Sen as its Chairman examined the design, content, methodology, procedure and other related matters concerning the scheme and made several recommendations. Based on the recommendations of this committee, the important modifications made in implementation of the cost of production studies are described below briefly.

Crop Complex Approach

The most significant change adopted from the crop year 1984-85, as per recommendations of the Special Expert Committee, relates to the Crop Complex Approach, in place of principal crop, as basis for sampling. Under this approach, the sample is representative of a group of crops rather than a single crop as in the past' thereby permitting representative cost estimates of a large number of crops.

Selection Procedure

The selection procedure in the crop-complex approach continues to be the same up to the zonal level (as before). In the selection of tehsils, however, number of tehsils is allocated to zones in proportion to the *total area under all* the crops

(covered in the enquiry) and with replacement, in place of area under main crop, as hitherto. Again, in the selection of operational holdings at third stage, there is a deviation in the new approach in that as against the system of selection of holdings size-wise (which vary with clusters), *a uniform size classification* has been adopted. In case the operational holdings in the nucleus village fall below 200, the second or third village would also be covered, taking care to list all the holdings of the village covered.

Dispensation of Sub-Sampling

The system of estimating cost of production of sub-sampling approach has been dispensed with. With the adoption of modified design, data on all crops are collected from a common sample for a period of three years, thereby enabling comparison of the results for different crops and throwing light on their substitution relationships. Further, the modified design provided a series of cost estimates comparable over time permitting the study of different aspects of the farm economy.

Increase in Sample Size

The sample size has also been enlarged from 6,000 holdings to about 9,000. This is expected in making the sample more representative and in improving the quality of cost estimates to cater to the needs of the policymakers.

Data Collection

The field data was collected by cost accounting method, which means that the data on inputs and outputs (both in physical and monetary terms) was collected by whole time field men residing in villages selected for study on the basis on day-to-day observations and contact with the selected farmers as the various agricultural operations are performed. One whole-time field men collected data for ten sample cultivators.

Cost Calculation

Until now the value of by-product was being netted from the gross cost of cultivation in order to obtain net cost of the main product. This procedure has been discontinued and the proportionate method of allocation of costs as between the main produce and the by-product has come to be adopted.

Cost Items

The items of cost of cultivation cover both the paid-out costs (out of pocket expenses) and the imputed costs. The items covered under these costs are:

Paid-out costs:

(i) Hired labour (human, animal and machinery).
(ii) Maintenance expenses on owned animals and machinery.
(iii) Expenses on material inputs such as seed (home grown and purchased), fertilizer, manure (owned and purchased), pesticides and irrigation.
(iv) Depreciation on implements and farm buildings (such as cattle sheds, machine sheds, storage sheds).
(v) Land revenue.
(vi) Rent paid for leased-in land.

Imputed costs: Value of family labour, rent of owned land and interest on owned fixed capital, for which the farmer does not incur any cash expenses.

Cost Concepts:

The cost are generated following certain cost concepts. These cost concepts and the items of costs included under each concept are given below;

Cost A_1:
(i) Value of hired human labour.
(ii) Value of hired bullock labour.
(iii) Value of owned bullock labour.
(iv) Value of owned machinery labour.
(v) Hired machinery charges.
(vi) Value of seed (both farm produced and purchased)
(vii) Value of insecticides and pesticides.
(viii) Value of manure (owned and purchased).
(ix) Value of fertilizer.
(x) Depreciation on implements and farm buildings.
(xi) Irrigation charges.
(xii) Land revenue, cesses and other taxes.
(xiii) Interest on working capital.
(xiv) Miscellaneous expenses (artisans, etc.).

Cost A_2: Cost A_1 + rent paid for leased-in land.
Cost B_1: Cost A_1 + interest on value of owned capital assets (excluding land).
Cost B_2: Cost B_1 + rental value of owned land (net of land revenue) and rent
Cost C_1: paid for leased-in land.
Cost C_2: Cost B_1 + imputed value of family labour.
Cost B_2 + imputed value of family labour.

Imputation Procedures

Some of the inputs used in the production process come from family sources. The procedures adopted for deriving imputed values of these inputs are as under:

Items	Procedure
1. Family labour	On the basis of wages paid to attached farm servant.
2. Owned animal labour	On the basis of cost of maintenance which includes the following: (a) Cost of green and dry fodder. (b) Cost of concentrates. (c) Depreciation on animals and cattle sheds. (d) Upkeep labour charges. (e) Other expenses, if any.
3. Owned machinery charges	On the basis of cost of maintenance of farm machinery which includes diesel, electricity, lubricants, depreciation, repairs and other expenses, if any.
4. Implements	Depreciation and charges on account of minor repairs.

5. Farm produced manure	Evaluated at rates prevailing in the village.
6. Rent of owned land	Estimated on the basis of prevailing rents in the village for identical type of land or as reported by the sample farmers, subject to the ceiling of fair rents given in the land legistation of the concerned State.
7. Interest on owned fixed capital	Interest on present value of fixed assets charged at the rate of 10% per annum.
8. Interest on working capital	Interest is charged at the rate of 12.5% per annum on the working capital for half the period of crop.
9. Kind payments	The kind payments are evaluated at prices prevalent in the village at the time such payments are made.
10. Main product and by-product	Imputed on the basis of post-harvest prices prevailing in the selected villages.

Allocation of Joint Costs

The expenditure incurred on, or imputed for, some of the cost items relate to the farm as a whole. Such joint costs are allocated to individual enterprises, among different categories of livestock and so on. Depreciation on farm buildings and implements, land rents, land revenue, cesses and taxes, interest on owned fixed capital are such costs which are allocated to individual crop enterprises in proportion to their areas. The cost on livestock is allocated to each category of animals in proportion of its numbers to the total number of animals owned by the farmer.

Apportionment of Joint Costs

The apportionment of total costs incurred jointly for different crops grown in crop mixtures is done in proportion to the total value of output contributed by individual crops in the crop mixtures. The apportionment of total cost of cultivation between the main product and the by-products is done in proportion to their contribution to the total value of output.

Evaluation of Farm Assets

The following procedure is adopted for the evaluation of farm assets:

Item	Procedure
Owned and self-cultivated land	Evaluated at rates prevalent in the villages taking into account the differences in type of soils distance from village, source of irrigation, etc.
Farm buildings (cattle sheds, storage sheds, etc.)	Evaluated at rates prevailing in the village.
Implements and other farm machinery	Evaluated at market prices.
Livestock	Evaluated at market prices.

ANNEXURE - B

Methodology for Coverting Cost Estimates from Current to Constant Prices

Estimates of cost of production for wheat are available on time series basis for the States of Punjab, Haryana, Rajasthan, Uttar Pradesh and Madhya Pradesh. Information regarding quantitative use of inputs are available in respect of human labour, bullock labour, seed, fertilisers and manures and for other inputs it is available only in value terms. For estimating the cost of cultivation at constant prices, the cost of such inputs for which the quantitative information were available have been worked out by multiplying the quantities with respective unit price prevailing in the base year. For other inputs, it has been estimated by deflating the estimates at current prices through input price index.

The methodology adopted in reducing the value of an individual input from current to constant price and the weighting diagrams wherever used for constructing composite index is detailed below. All the indices constructed are average for the months October to April, the period of wheat cultivation.

(i) Human Labour: The labour hour input of agricultural labourer in the terminal year was multiplied by the derived per hour wage rate in the base period.

(ii) Bullock Labour: Like human labour, the bullock labour pair hour input in the terminal year was multiplied by the derived per pair hour bullock labour cost in the base period.

(iii) Fertilisers: The quantity of fertiliser used in the terminal year was multiplied by the unit value of the fertilisers in the base period.

(iv) Manures: Like fertilisers, the quantity of manures used in the terminal year was multiplied by the unit value of the manures in the base period.

(v) Seed: Like fertilisers and manures, the quantity of seed used in the terminal year was multiplied by the unit value of seed in the base period.

(vi) Pesticides/Insecticides: The Economic Adviser's Index Number, which is the official Index Number, of Wholesale Prices of pesticides/insecticides was considered as indicator of these input costs. The index of terminal year was deflated by the base period index and the cost of input at constant price was arrived by using the index so obtained as a deflator.

(vii) Operating Cost of Machinery/Machine Labour: The estimated cost of machine labour in the terminal year has been deflated by constructing a composite index consisting of diesel oil, lubricating oil and running cost of machineries to reduce the value at constant price. Based on an exercise done by the Commission for Agricultural Costs and Prices, the weights were estimated by taking an all-India average expenditure for the triennium ending 1968-69 on diesel oil, lubricating oil and running cost of machineries. The weights are as follows:

a) Diesel oil (HSD) 33.00
b) Lubricating oil 05.30
c) Tractors 61.70

The Economic Advisers' index number of wholesale prices of these items were used for estimating the composite index. The terminal year composite index number was deflated by the base year index and the index so obtained was used as a deflator to derive the cost at constant price.

(viii) Irrigation Charges: The expenditure on diesel pumps (depreciation, repairs, fuel and lubricants) have been considered to indicate irrigation charges. Based on studies conducted by the Indian Institute of Management, Ahmedabad on 'Economies of Irrigation' the following weights were used for constructing the composite index of expenditure on diesel pumps.

a) Depreciation	27.15
b) Repairs	25.24
c) Fuel and Lubricants	47.61

As expenditure on canal irrigation is nominal as compared to lift irrigation, it contributes negligibly to the total cost of cultivation and therefore no indicator for canal irrigation charges was used in computing the irrigation index. The index of irrigation charges is estimated as a composite index of expenditure on diesel pumps and the Economic Advisor's Index Number of electricity for irrigation, both carrying an equal weight of 50 in the irrigation index. The Economic Advisor's Index Number of Wholesale prices of machinery other than electric is taken as an indicator of the overtime movement in the cost of depreciation of diesel pumps and the index number of wholesale prices of all commodities is taken to represent the overtime change in the cost of repairs. In working out the index of fuel and lubricants, the price of diesel oil was given a weightage of 85 per cent and that of lubricating oil 15 per cent. The terminal year composite index was deflated by the base year index and the index so obtained was used as a deflator to derive the cost of irrigation at constant price.

(ix) Interest on Working Capital: Using State Bank's 'call loan' rate for cooperative banks as indicator of changes in the interest on working capital, indices at current prices was first constructed and then terminal period index was deflated by the base period index and was used to arrive at the cost of interest on working capital at constant price.

(x) Operational Cost: The value of all the above items were clubbed together to arrive at the value of operational cost at constant price.

(xi) Fixed Cost: The value of fixed cost at constant price for the terminal year was derived through adjusting the value in ratio between operational cost and total cost at current price.

(xii) Other Items under fixed cost: The value of other items under fixed cost at constant price was derived on the basis of ratio between each item and total fixed cost at current price.

(xiii) Value of Main Product: Value of main product at constant price is obtained by multiplying the yield of corresponding year with the derived farm harvest price of wheat in the base year.

(xiv) Value of By Product: Value of by-product at constant price is obtained by using the ratio of value of by-product to value of main product at current prices for the corresponding year.

(xv) Gross Value of Output: Gross value of Output at constant price is obtained by adding the values of main product and by product for each year.

(xvi) Limitation: The use of input price indices as deflator suffers from the following limitations:

(a) The method assumes that the structure of input in terminal year is constant and does not allow for changes that might have taken place there in response to changes in input price.

(b) In case of certain inputs, the prices of indicators have to be used for want of data. This by itself can cause inter-state differences in the order and even direction of change in the so constructed input indices.

INCREASING GENDER BIAS IN RURAL ECONOMY OF MADHYA PRADESH

Ram Pratap Gupta and Sara Attari

In spite of the constitutional guarantee regarding social, economic and political equality, the dynamics of economic change in rural Madhya Pradesh has adversely affected the employment opportunities for women over time. With the employment squeeze compared to population increase, they were the first to be thrown out in both, agricultural and non-agricultural sectors. The adverse impact on female employment was not uniform in all the crop zones of the state, the women in wheat-growing areas suffering greater loss of employment opportunities, compared to those in rice and commercial crop growing areas. The women also suffered casualisation of employment, further affecting adversely their economic and social status. In short, the developmental process in rural Madhya Pradesh has strengthened gender bias against women.

Gender bias in the economic and social structure of our country is not new. About two thousand years ago, the position of women in Hindu society was cogently enunciated in the Law of Manu. It was stated in *Manusmriti* that women do not deserve independence [Thapar, 1963]. Society rarely permitted women to be socially or economically independent. But with Independence, the framers of the Indian Constitution declared that discrimination based on caste, religion, colour, sex, etc., was to be abolished. A constitutional guarantee was provided to all citizens regarding social, economic and political justice and equality of status and opportunity. Moreover, in 1975 Government framed a National Plan of Action for Women based on the recommendations of the Committee on Status of Women in India, 1974 [Majumdar, 1985, Pp. 6-7]. At present, the Government of India has over twenty-seven schemes for women including one specifically for the Development of Women and Children in Rural Areas [Paranjpe, 1992, p. 511]. It would be interesting to study the impact of the measures taken by the Government and society on the bias against women in the economic structure of the rural areas of a backward State like Madhya Pradesh.

With the publication of the Report of the Committee on the Status of Women in India [Guha, 1974], which highlighted the alarming decline in women's participation in economic activity, many studies on work participation by females were undertaken [Agarwal, 1982, Ghosh and Mukhopadhyai, 1986, Krishnaraj, 1985, Nayyar 1987, Seal 1981 and others]. Attempts were made to explain the factors responsible for the long term decline in female work participation rates (FWPRs). Three striking features noted were: (a) the work participation level of females was lower than that of males, (b) women's participation rates showed a declining trend over time, and (c) given the vastness of the country, regional differences in cultural and social norms also influenced women's economic role and participation in economic activities. The success or failure of the public policies adopted for the welfare of women also depended upon the positive and negative sets of socio-cultural factors. Madhya Pradesh, given its vastness, has significant regional differences, culturally as well as economically. The present study aims at finding out the long term trends and structural changes in rural female employment in different agroclimatic zones of the state. Disaggregation at the level of agroclimatic zones, and study of long term change, will help in locating the differential impact on the level and structure of female employment in different parts of the state.

I

There are two alternative sources for FWPRs in our country, viz., (i) the Census, and (ii) the National Sample Survey (NSS). The Census has the advantage of complete enumeration but has problems of comparability, which are to be kept in mind. NSS data on FWPRs are superior as these are based on exhaustive questionnaires, are collected by better trained enumerators and are likely to have captured more female workers [Jeemal, 1989]. But NSS data are not available at the district level, which are necessary for regional comparisons within the state. Therefore, we have

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used only the Census data for the years 1961, 1981 and 1991, leaving out the 1971 Census data because of problems of comparability with the Census data for other years. The definition of a worker was similar in all the four Census years. However, the changes in the reference period and other factors introduced distortions in the 1971 data, affecting its comparability. With increasing casualisation of the work force and growing insecurity of employment, the level will be lower when measured on a daily status basis within a single reference week, as was done in the 1971 Census, than when measured on the basis of usual status over the year or season. The explicit introduction of principal activity in the 1971 Census led to a substantial reduction in total enumeration, particularly of women workers. It is believed that the recording of secondary work of non-workers was not undertaken seriously in that Census, with the result that there was an overall under count of workers as compared to the 1961 Census [Seal, 1981]. Thus, to maintain comparability and uniformity, we have not included the 1971 Census data in our analysis.

In the 1991 Census, one critical addition was made to remove the inadequacy of our data system to capture women's work and the resulting under count. With the question "Did you work any time at all last year", a clause was introduced in parenthesis, "including unpaid work on the family farm or family enterprise". There have also been other minor changes, indicating that the 1991 Census made better attempts to measure the contribution of women in the economy. The enumerators were instructed to make special efforts [Census of India, 1991, p. 34]. The provisional data for 1991 show an increase in FWPRs, as compared to the 1981 Census. This increase might be the result of a real increase in work participation by females as also of the special efforts made by the Census authorities in 1991 for capturing women's work better. This, along with the fact that in the 1961 Census cultivators were overestimated while agricultural labourers were underestimated [Jeemal, 1981], should be kept in mind, while making temporal comparisons. All in all, the data in the Census years of 1961, 1981 and 1991 may be considered to give a reasonably good inventory of the rural work force in the country and the State.

Madhya Pradesh is divided into five crop zones based on agro-climatic conditions. They are:

(1) **Rice Zone** - comprising the districts of Sidhi, Shahdol, Sarguja, Mandla, Bilaspur, Raigarh, Balaghat, Durg-Rajnandgaon, Raipur and Bastar in south-eastern Madhya Pradesh;

(2) **Rice-Wheat Zone** - comprising the districts of Panna, Satna, Rewa, Jabalpur and Seoni in central-eastern Madhya Pradesh;

(3) **Jowar-Wheat-Zone** - comprising the districts of Bhind, Gwalior, Morena, Datia, Shivapuri, Guna, Tikamgarh, Chhattarpur, Betul and Chhindwara in north-western and in south-central Madhya Pradesh;

(4) **Wheat Zone** - comprising the districts of Vidisha, Sagar, Damoh, Sehore, Bhopal, Raisen, Hoshangabad and Narasingpur in central Madhya Pradesh; and

(5) **Cotton - Jowar Zone** - comprising the districts of Mandsaur, Ratlam, Rajgarh, Shajapur, Ujjain, Jhabua, Dhar, Indore, Dewas, West Nimar and East Nimar in western Madhya Pradesh.

II

In this section, empirical evidence is presented regarding changes in the volume and structure of employment in rural Madhya Pradesh over the 1961-91 period. The dimensions of explorations are (i) the changes in participation rates for males and females in the state in different crop zones; (ii) the role of agriculture in providing employment to the male and female workers in rural Madhya Pradesh and the change in the same along with the change in structure over the period under study; and (iii) trend in the sex-wise structure of employment in the non-agricultural sectors and in different crop zones of the state.

Trend in Participation Rates

Table 1 gives an idea of the long term trend in sex-wise employment level and participation rates in different crop zones of the state. The employment level in rural Madhya Pradesh increased by 10.92 per cent between the period 1961-81, and again by 19.06 per cent during 1981-91. The impact of agricultural growth on the

increase in rural employment appears to be direct when we look at the rates of agricultural growth during these periods. The growth rate of the agricultural sector (in Madhya Pradesh) was 1.53 per cent per annum during the period 1960-61 to 1978-79 and 4.13 per cent per annum during the period 1979-80 to 1989-90 [Kawadia and Patil, 1992]. The total increase in employment in rural Madhya Pradesh was 34.19 per cent between the 1961-91 period as against the increase of 83.05 per cent in population. This resulted in the fall in work participation rates in rural Madhya Pradesh from 56.6 per cent in 1961 to 40.92 per cent in 1981 and to 39.89 per cent in 1991. This decrease was much more than the decrease experienced in states like Kerala. In rural Kerala, work participation rates fell from 34.0 per cent in 1961 to 31.2 per cent in 1981 and then rose slightly to 32.7 per cent in 1991. However, the decrease in the employment level in rural Madhya Pradesh was not shared equally between the two sexes and among various crop zones. With smaller increase in employment opportunities, as compared to the increase in population, women lost their share in the total work force. The share of women in the total work force of Madhya Pradesh was 43.35 per cent in 1961. It came down to 30.90 per cent in 1981 but rose slightly to 32.65 per cent in 1991. This increase in the share of women in the total rural work force of the state in 1991 might be due to efforts by Census enumerators to obtain details of the contribution of women in the labour force.

The dynamics of rural development and social change adversely affected the rural poor women but this adverse impact was not uniform over all the crop zones in the state. The range of FWPRs in 1961 varied between 38.28 per cent in the Wheat Zone and 55.26 per cent in the Rice Zone; in 1991, the range varied between 16.56 per cent in the Jowar-Wheat Zone and 33.71 per cent in the Rice Zone, thereby indicating an increase in the regional variations in FWPRs. But in the case of males, a more uniform pattern of participation rates in different crop zones of the state emerged over time. The difference in the male and female participation rates was reflected in the female work force of the different crop zones in the state. The Rice and Cotton-Jowar Zones improved their share in the female work force while in the Jowar-Wheat and Wheat Zones, the female work force lost their share. In the Rice-Wheat Zone the female work force remained constant, with small variations. Work opportunities for females in rural areas of the Jowar-Wheat Zone suffered the most; the FWPR came down in that zone from 44.98 per cent in 1961 to 14.94 per cent in 1981 but improved a little to 16.56 per cent in 1991. FWPRs in Rice and Cotton-Jowar Zones were higher throughout the period, as compared to those in the Jowar-Wheat, Wheat, and Rice-Wheat Zones. The regional variations and range of FWPRs increased in 1981 as compared to 1961, but decreased a little in 1991.

TABLE 1. EMPLOYMENT LEVEL AND WORK PARTICIPATION RATES FOR MALES AND FEMALES IN RURAL MADHYA PRADESH

Crop Zone	1961				1981				1991			
	No. of Male Workers	MPWR	No. of Female Workers	FWPR	No. of Male Workers	MPWR	No. of Female Workers	FWPR	No. of Male Workers	MPWR	No. of Female Workers	FWPR
Rice Zone	34,85,949 (40.2)	63.07	31,07,643 (46.8)	55.26	45,96,644 (39.1)	57.47	27,10,693 (51.5)	33.71	53,69,762 (38.8)	54.54	32,96,935 (49.1)	33.71
Rice-Wheat Zone	8,99,473 (10.4)	60.21	6,83,234 (10.3)	46.29	11,94,184 (10.2)	52.54	5,52,795 (10.5)	25.15	14,08,485 (10.2)	50.52	6,49,969 (9.7)	24.67
Jowar-Wheat Zone	16,19,522 (18.7)	70.67	9,18,564 (13.8)	44.98	21,17,208 (18.0)	53.51	5,21,817 (9.9)	14.94	24,84,709 (18.0)	51.14	7,02,445 (10.5)	16.56
Wheat Zone	9,88,223 (11.4)	60.46	5,83,394 (8.8)	38.28	13,96,281 (11.9)	53.81	3,80,507 (7.2)	16.09	16,30,232 (11.8)	51.81	5,30,099 (7.9)	18.85
Cotton-Jowar Zone	16,83,733 (19.4)	60.28	13,45,712 (20.3)	50.73	2,45,507 (20.8)	55.25	10,93,450 (20.8)	25.83	29,47,886 (21.3)	53.79	15,35,822 (22.9)	29.56
Total	86,76,900	63.15	66,38,647	48.59	11,759,374	55.29	52,59,262	25.87	13,841,034	52.98	6,711,290	26.03

Notes: (1) MWPR - Male Work Participation Ratio. (2) FWPR - Female Work Participation Ratio. (3) Figures given in parentheses show percentage share of crop zone in male and female work force in the state.

TABLE 2. NUMBER OF MALE WORKERS PER 100 FEMALE WORKERS IN RURAL MADHYA PRADESH

Crop Zone	1961	1981	1991
Rice Zone	112	170	179
Rice-Wheat Zone	132	216	217
Jowar-Wheat Zone	176	406	354
Wheat Zone	169	367	308
Cotton Jowar Zone	125	225	192
Madhya Pradesh	131	224	216

There is a clear tendency of increase in male dominance in all the crop zones of the state, the extent of increase being different in different crop zones (Table 2). Male dominance was stronger in the wheat growing areas than in the rice growing areas and in areas growing commercial crops.

Certain agricultural operations continued to remain the domain of women across all the regions, like transplanting, weeding, winnowing, drying, storage and husking or milling. With mechanisation of some of these operations (notably husking and planting), women were being displaced by men. The preparation of organic manure, however, remained a women-dominated operation. Where the HYV package of inputs, especially the use of chemical fertilizers, weedicides and herbicides, and mechanisation was adopted, a decline in the share of women in employment took place. Thus, there was a decreasing participation of women with development. A systematic relationship between factors described above resulting in the fall in FWPRs are given in Table 3.

TABLE 3. RANKING OF DIFFERENT CROP ZONES

Crop Zone	Rank Based on the Change in Percentage of Females in Total Rural Force	Rank Based on Increase in Irrigated Area	Rank Based on Increase in HYV Area	Rank Based on Increase in Tractors	Rank Based on Increase in Use of Fertilisers
Rice Zone	4	5	5	5	4
Rice-Wheat Zone	3	4	3	4	1
Jowar-Wheat Zone	2	3	4	1	2
Wheat Zone	1	1	1	3	3
Cotton-Jowar Zone	5	2	2	2	5

TABLE 4. CHANGE IN TOTAL EMPLOYMENT AND FEMALE EMPLOYMENT BETWEEN 1961 AND 1981

Crop Zone	Percentage Change in Employment Between 1961 and 1981	
	Total employment	Female employment
Rice Zone	+31.44	+6.1
Rice-Wheat Zone	+30.06	-4.9
Jowar-Wheat Zone	+25.57	-22.4
Wheat Zone	+37.46	-9.1
Cotton-Jowar Zone	+48.00	+14.1

Agricultural development also did not have uniform impact on female employment in all the crop regions of the state. Gender disparities were influenced by characters of caste, community, religion, literacy attainments, school attendance, access to health and nutrition facilities, etc., [Agarwal 1986, Sen, 1988]. Thus, depending on the extent of use of modern technology in agriculture or cultural factors a given increase in the total employment in a crop zone was not shared by women uniformly in all the crop zones. The changes in total employment and in female

employment in different crop zones is given at Table 4 above.

The highest increase in total employment was in the Cotton-Jowar Zone; this increase was shared by both males and females, but very unequally. This zone has many districts having a high percentage of tribal population, and cultural factors, with bias against female employment, were not active in the area. Therefore, the unequal share in the increased employment opportunities would be the result, mainly, of developmental factors. Moreover, increase in area under commercial crops like cotton, may have generated greater employment opportunities suitable for women like plucking. The next highest increase in total employment was in the Wheat Zone, but this increase was not only not shared by women, but they also lost some of the employment opportunities, they held in 1961. Stronger gender bias due to both, developmental and cultural factors, could have operated in the Zone. The Rice Zone had the third highest increase in total employment, and the increase was shared by both males and females, although again unequally. Since this zone has a very high percentage of tribal population, cultural factors were not active against female employment, only developmental factors could have been responsible for the unequal share of women in the increased employment opportunities. The Jowar-Wheat Zone had the lowest increase in total employment, resulting in the highest decrease in female employment. Both, cultural and developmental biases against gender were active, resulting in decrease in FWPR from 44.98 per cent in 1961 to 16.56 per cent in 1991 (Table 5).

TABLE 5. SEX RATIOS AND FWPR'S IN DIFFERENT CROP ZONES OF MADHYA PRADESH

Crop Zone	1961		1981		1991	
	Sex Ratio (Females per 1000 males)	FWPR	Sex Ratio (Females per 1000 males)	FWPR	Sex Ratio (Females per 1000 males)	FWPR
Rice Zone	1,017	61.99	1,005	33.71	993	33.71
Rice-Wheat Zone	988	46.29	967	25.15	943	24.67
Jowar-Wheat Zone	904	44.98	883	14.94	873	16.56
Wheat Zone	932	38.10	911	16.09	894	18.85
Cotton-Jowar Zone	950	50.72	952	25.85	948	29.56
Madhya Pradesh	969	48.59	956	25.87	944	27.23

The drop in FWPR and fall in sex ratio in various crop zones go together, indicating a relationship between the two. Table 5 gives the sex ratio and FWPR for different crop zones of the state. The rank co-relation between the sex ratios and FWPRs for various crop zones, which was 0.9 in 1961, became equal to 1 in 1981 and 1991, indicating that the economic value of women had a close impact on the sex ratio in the state.

Changes in the Structure and Status of Female Employment

The structure of employment in the country and the state was expected to shift away from agriculture to industry and services with economic development. But an analysis of employment in various crop zones showed that the dependence on agriculture in rural Madhya Pradesh increased sharply for males in three out of five crop zones and for women in all the crop zones. There were some signs of employment diversification between 1961 and 1981 but in the eighties, dependence on agriculture in rural Madhya Pradesh as a whole increased. Table 6 gives an idea of the increasing dependence of women on agriculture in the state.

TABLE 6. SHARE OF AGRICULTURE IN RURAL EMPLOYMENT MADHYA PRADESH

(per cent)

Crop Zone	1961		1981		1991	
	Male	Female	Male	Female	Male	Female
Rice Zone	85.96	92.19	84.91	94.08	85.38	95.35
Rice-Wheat Zone	84.72	89.25	81.72	89.78	82.03	91.22
Jowar-Wheat Zone	82.59	89.17	87.18	91.18	88.20	95.12
Wheat Zone	76.12	79.19	79.54	76.33	88.38	81.26
Cotton-Jowar Zone	83.72	93.59	85.93	95.64	86.22	96.31
Madhya Pradesh	83.65	90.61	84.59	92.44	85.37	94.11

With the exception of the Wheat Zone, the increase in dependence on agriculture in the case of women was more than that for males. Slow agricultural growth, resulting in a failure of structural change in rural Madhya Pradesh, and a decline of household industry resulted in increased dependency of women on agriculture. This, together with the negative growth rate of labour use per hectare in the state, caused severe hardships to female workers [Bhalla, 1989]. Along with decreased participation rates and increased dependency on agriculture, women's dependency on agricultural wage labour became higher than that of men and increased faster. The number of female labourers increased while those of female cultivators declined over time. The change in the number of male and female cultivators and labourers during the period under study gives an idea of the direction of change in the status of female workers (Table 7).

TABLE 7. PERCENTAGE CHANGE OF MALE AND FEMALE CULTIVATORS AND LABOURERS BETWEEN 1961 AND 1991

Crop Zone	Percentage Change of Male		Percentage Change of Female	
	Cultivators	Agri. Labourer	Cultivators	Agri. Labourer
Rice Zone	+46.13	+20.07	-13.35	+91.34
Rice-Wheat Zone	+31.03	+115.26	-36.06	+36.13
Jowar-Wheat Zone	+54.68	+141.68	-40.74	+91.10
Wheat Zone	+53.88	+147.26	-51.90	+75.85
Cotton-Jowar Zone	+67.28	+137.47	-9.26	+112.82
Madhya Pradesh	+51.25	+112.07	-20.26	+84.24

Agricultural wage work is becoming the main source of employment for women. They are losing control over land to males and are being forced to join the ranks of landless labourers. Even as agricultural labourers, they face competition with the males in the labour market. According to the *Rural Labour Enquiry* 1964-65 and 1974-75, there was a decline of 35 days' employment in a year for women between these two years as against a loss of only 17 days' employment for males [Agarwal, 1989]. There is a process of land alienation among women in all the crop zones, though not on a uniform basis. The displacement is higher in the wheat growing areas than in the rice and cotton-jowar growing areas.

Declining Non-agricultural Employment Among women

Rural women have not only been displaced in the agricultural sector, but also in the non-agricultural sector. Livestock rearing, household industry, construction and other services are the main source of employment outside agriculture for rural women in Madhya Pradesh. Male domination has been increasing in all these avenues too. The share of women in non-agricultural rural employment decreased from 30.52 per cent in 1961 to 17.26 per cent in 1991. Tables 8 and 9 give an idea of the falling share of females in different crop zones and avenues of non-agricultural employment. Except in the Wheat Zone, the percentage of non-agricultural

TABLE 8. SHARE OF FEMALE WORKERS IN NON-AGRICULTURAL EMPLOYMENT IN RURAL MADHYA PRADESH

Crop Zone	1961			1981			1991		
	Total Employment in Non-Agricultural Sector	Total Female Employment in Non-Agricultural Sector	Percentage Share of Female in Non-Agricultural Employment	Total Employment in Non-Agricultural Sector	Total Female Employment in Non-Agricultural Sector	Percentage Share of Female in Non-Agricultural Employment	Total Employment in Non-Agricultural Sector	Total Female Employment in Non-Agricultural Sector	Percentage Share of Female in Non-Agricultural Employment
Rice Zone	732,119	242,615	33.14	968,053	160,343	16.56	938,210	153,180	16.33
Rice-Wheat Zone	210,945	73,461	34.82	274,796	56,517	20.57	310,124	57,086	18.41
Jowar-Wheat Zone	381,321	99,492	26.09	314,511	43,118	13.71	331,681	38,616	11.64
Wheat Zone	357,433	121,397	33.96	375,750	90,057	23.97	404,155	116,968	28.94
Cotton-Jowar Zone	360,420	86,261	23.93	393,158	47,717	12.14	462,713	56,600	12.23
Madhya Pradesh	2,042,238	623,226	30.52	2,326,268	397,752	17.90	2,446,883	422,450	17.26

TABLE 9.SHARE OF FEMALES IN DIFFERENT NON-AGRICULTURAL EMPLOYMENT OPPORTUNITIES IN RURAL MADHYA PRADESH

Crop Zone	1961				1991			
	Total Employment in Household Industry	Employment of Females in Household Industry	Total Employment in Other Activities	Female Employment in Other Activities	Total Employment in Household Industry	Employment of Females in Household Industry	Total Employment in Other Activities	Female Employment in Other Activities
Rice Zone	231,546	99,257 (42.87)	500,573	143,358 (28.64)	171,035	53,569 (31.32)	767,175	99,611 (12.98)
Rice-Wheat Zone	895,535	27,396 (30.60)	121,418	46,069 (37.94)	75,848	25,064 (33.05)	243,376	23,408 (9.62)
Jowar-Wheat Zone	110,518	34,892 (31.57)	270,803	64,600 (23.85)	58,257	15,208 (26.11)	273,424	23,408 (8.56)
Wheat Zone	129,521	49,993 (38.60)	227,912	71,404 (31.33)	150,824	66,727 (44.24)	253,301	50,241 (19.83)
Cotton-Jowar Zone	116,866	35,607 (30.47)	243,558	50,564 (20.76)	65,592	16,602 (25.31)	393,121	39,998 (10.17)
Madhya Pradesh	678,248	247,145 (36.44)	1,364,264	375,995 (27.58)	521,556	177,170 (33.97)	1,930,397	236,716 (12.26)

Note: Figures given in parenthesis indicate percentage share of female employment in the sector.

employment in rural areas had declined by 1991 to about a half of what it was in 1961. Increase in employment in the *bidi* industry in Sagar and other adjoining districts helped the wheat Zone to check the process of speedy decline in non-agricultural employment.

The total rural employment in household industry deceased in all the crop zones except in the Wheat Zone. As already stated, employment in the *bidi* industry helped in checking the fall in female employment in the household industry in the Wheat Zone. In the case of non-agricultural employment, avenues of employment increased in all the crop zones, by varying degrees. However, women did not benefit from this increase but lost in favour of males. The greatest displacement of women was in the Jowar-Wheat Zone where the increase in total employment in other activities was the least among all the crop zones. The decrease in employment of women in household industry and other activities along with their losing control over the ownership of land resulted in the increase in the number of female casual labourers. Given the marked seasonality of agricultural employment and the uncertainties for women in the agricultural wage labour market, along with low wage level, a decrease in and displacement in non-farm employment for women must have added to the economic and social disabilities faced by them.

III

Conclusion

The above analysis draws pointed attention to the increasing gender bias against women in the development process in agricultural and non-agricultural sectors in rural Madhya Pradesh. Even with the spread of irrigation and high-yielding varieties of seeds, increase in labour demand failed to produce a positive impact on female employment. Mechanisation definitely displaced female labour in agriculture. The adverse impact on female employment in the modernisation process is greater in wheat producing areas than in rice producing areas.

As far as work participation pattern is concerned, a more uniform pattern of male participation rates has emerged over time. On the other hand, regional variations in FWPRs have increased. The decrease in female participation rates was greater in crop zones which had lower participation in 1961. The wheat producing areas, having low FWPRs, also suffered a greater fall, resulting in increase in the gap between FWPRs in wheat and those in rice producing areas of the state. Women have been less adversely affected in rice growing areas and commercial crops like cotton and opium growing areas. Both these areas had a higher percentage of tribal population residing in them. Thus, along with exploitation and invisibility, women face increasing squeeze in employment opportunities, more so in wheat growing areas. The development of the *bidi* industry in wheat growing areas barely compensated women for the great loss of employment opportunities in agriculture. There are not only no signs of diversification of the rural economy in the state, on the other hand, the dependence on agriculture for employment increased in the case of both males and females, more so in the case of females. A close relationship between participation rates and sex ratios was also observed. We can well repeat the words of the Committee on the Status of Women in India - which were said some 18 years ago- 'the dynamics of rural social change had adversely affected rural poor women and had created new imbalances and disparities' [Guha, 1974, p. 34].

There is need to attract the attention of planners and policy makers to the steady but slow and silent displacement of women as cultivators as well as their displacement from non-farm employment. A special policy for rural women's development needs to be evolved, in the light of the declining participation rates and increasing proletarianisation. Policy initiatives taken so far have failed to benefit and have bypassed the large majority of rural poor women. The emphasis of policies needs to be shifted to equity by freeing men and women from stereotyped sex roles and eradicating gender bias in the economic structure of rural areas.

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FOREIGN EXCHANGE MARKET IN INDIA: Single Currency Peg to Independent Floating - Devaluation All the Way

Kishor C. Samal

This paper analyses the development of foreign exchange system in India since 1948 in the backdrop of theoretical analysis. Whatever may be the foreign exchange system - single currency peg, managed float (single currency peg or basket peg), 'hidden' partial float, 'partial' float or independent floating of Rupee at current account - it is nothing but a new type of move towards depreciation of the Indian Rupee. The paper also analyses one-stroke, two-stroke or backdoor devaluation of the Indian Rupee at various times, which has no favourable impact on export, as commonly believed. At present, since floating of the Indian Rupee at current account under modified LERMS, in March 1993, there have been (i) depreciation of the Rupee and (ii) vanishing of implicit export tax leading to monetisation of fiscal deficit. It is theoretically argued that these, in turn, will lead to inflation and further devaluation, inflation and so on in the long run. Thus the 'implicit' export tax is being replaced by 'inflation' tax.

The foreign exchange system is managed by government mainly in two ways: through exchange rate policies and exchange restrictions. The different exchange rate regimes are distinguished from one another by their degree of flexibility. The various types of exchange rate regimes are: a single currency peg, a composite currency peg, limited flexibility *vis-a-vis* a single currency, limited flexibility through cooperative management, greater flexibility through adjustment to an indicator, greater flexibility through a managed float and full flexibility through an independent float. An increasing number of countries have floated their exchange rates in recent years. The desire to be free from political responsibility for devaluing the exchange rate is one of the causes for such floating.

However, there is debate over the relative merits of 'fixed' -*vs*- 'flexible' exchange rates. Supporters of a flexible exchange rate argue that in the absence of financial discipline, a fixed exchange rate system is likely to result in a succession of financial crises followed by devaluations thereby bringing instability into the real exchange rate behaviour. On the other hand, advocates of fixed exchange rate maintain that a degree of financial discipline is imposed by such a system by discouraging recourse to inflationary finance and, hence, maintaining price stability. There are also various disadvantages of the floating exchange system such as: (i) possible reduction in the volume of international trade by creating uncertainty about profit to be earned from international transactions; (ii) restriction of the international flow of capital; and (iii) raising of prices for internationally traded goods through risk premia to cover unanticipated fluctuations. It is also evident from the experience of developing countries that in the 1970s and 1980s, with a few exceptions, the average rate of inflation has been lower in countries with pegged exchange rates than the countries with more flexible rates [IMF Survey, 1991].

However, developing countries are forced to chart their policies in relation with those pursued by capitalist developed countries. Thus, gradually more and more developing countries are adopting the flexible exchange rate system (Table-1).

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TABLE 1. TYPES OF EXCHANGE RATE ARRANGEMENTS IN DEVELOPING COUNTRIES

Year	Per cent of Total		
	Fixed	Managed Floating	Freely Floating
(1)	(2)	(3)	(4)
1977	77.1	12.2	10.7
1978	74.5	15.3	10.2
1979	72.7	16.5	10.8
1980	72.1	17.2	10.7
1981	72.5	16.9	10.6
1982	71.7	17.3	11.0
1983	69.0	20.0	11.0
1984	68.7	17.7	13.6
1985	68.0	17.0	15.0

Source: *IMF Survey*, Vol. 21, No. 16.

In 1989-90, the exchange rate arrangements of the developing countries who are members of the International Monetary Fund (IMF) tended to move further towards greater flexibility and away from a single currency peg. Almost two-thirds of the 28 member-countries of the IMF who changed their exchange arrangements in 1989 and 1990, adopted more flexible exchange rate arrangements. Among the IMF members, the proportion of countries having single currency pegs decreased from 33 per cent in 1988 to 26 per cent in 1990, while that of countries with independent floating arrangements rose from 11 per cent to 16 per cent. The share of developing member-countries of the IMF pegged to a single currency, dropped from nearly two-thirds in 1976 to less than one-third in 1992.

Developing countries adopted more flexible exchange rate arrangements more due to their structural adjustment programme (SAP) imposed by the IMF/IBRD rather than to the reasons usually cited by IMF/IBRD such as: (i) acceleration of inflation rates during the 1980s and (ii) the uncertainties associated with fluctuations in the bilateral exchange rates of major currencies.

In the initial stage, developing countries introduced reforms of a dual exchange/multiple exchange rate system with an open secondary exchange market. This system was introduced by most countries as a transitory measure, as a step towards a unified exchange rate system. Some of the developing countries' move to unification of multiple exchange rates approximated market determined solutions at a substantially depreciated exchange rate. The exchange system in India has changed from a single currency peg to a managed float, partial float and at present to an independent float on current account. However, every change has brought about a depreciation in the external value of the Indian rupee.

Pre-1966 Situation

The Indian Rupee was pegged to the £-Sterling at a fixed parity of £ 1 = Rs 13.33 in 1948. The exchange rate of the Rupee was maintained by the Reserve Bank of India within a margin of ± 1 per cent of this parity. When the £-Sterling was devalued in September 1949, the Indian Rupee was devalued against the US $ by the same magnitude, though the £-Sterling-Rupee rate remained unchanged at £ 1 = Rs 13.33; the new US $-Rupee rate was fixed at $ 1 = Rs 4.762 from the erstwhile rate of $ 1 = Rs 4.0275.

1966: One-stroke Devaluation

The exchange rate of the Indian Rupee *vis-a-vis* the £-Sterling and US $ remained unchanged upto June 1966. In 1965-66, India faced severe drought. At the same time, the major aid giving countries cut off all aid to both India and Pakistan following the 1965 Indo-Pak War. The Aid India Consortium as well as the IMF and the World Bank resumed aid only on condition of devaluation of the Indian Rupee and the adoption of a liberalisation package. Accordingly, on June 6, 1966, the Indian Rupee depreciated by 36.5 per cent against the US $. As a result, the exchange rate of the £-Sterling appreciated from £ 1 = Rs

13.33 to £ 1 = Rs 21.00 and the rate of the US $ from US $ 1 = Rs 4.762 to US $ 1 = Rs 7.50. The devaluation of the Indian Rupee was accompanied by other measures, such as: (i) countervailing export duties and (ii) elimination of export subsidies and reduction in import duties. But the one stroke devaluation along with the liberalisation measures failed to achieve the expected objectives of solving India's balance of payments problem as some of the promised assistance from the IMF/World Bank did not materialise.

Impact of Devaluation

The impact of the 1966 devaluation was felt in various fields:

(i) The 'net' devaluation was less than the 'gross' devaluation and effective devaluation was greater for imports than for exports. One estimate put the net devaluation at 43.2 per cent for imports and 22.0 per cent for exports [Bhagwati and Srinivasan, 1975].

(ii) The inflation rate rose to 12 per cent between 1965-66 and 1966-67 and 15 per cent in the following year [Sen, 1986, Pp. 3,322-3,329]. Due to inflation consequent upon devaluation, there was a decline in consumption and a fall in output as a result of decline in real capital formation caused by the rise in prices of imported goods [Marwah, 1970].

(iii) The terms of trade (base 1963-64 = 100) improved from 101.0 in 1965-66 to 103.7 in 1966-67, but worsened in 1967-68 to 101.3. Both exports and imports fell by about 12 per cent in foreign currency terms in 1966-67 and rose again in 1967-68, by 12 per cent in exports and 9 per cent in imports [Sen, 1986, Pp. 3,322-3,329]. According to one study, the expected positive influence of devaluation on exports and production did not materialise due to the drought [Shah, 1970]. A similar conclusion was drawn by Bhagwati and Srinivasan [Bhagwati and Srinivasan, 1975]. According to their study, a continuous rise in the general price level, a rise in relative prices of food materials, a fall in exports as well as imports and the reduction in public expenditure was primarily due to the serious drought in 1965 than to the devaluation in 1966. The improvement in the balance of payments which was largely owing to the decline in imports, was due to devaluation, although a drought-induced recession also played its part. There was a fall in non-capital goods imports due to substitution and a decline in capital goods imports owing to a drought-induced reduction in both public and private investment.

The 1966-devaluation achieved little in the economic sphere. On the other hand, it had a contractionary effect on the Indian economy, particularly, on real income, domestic consumption and the level of public investment. The initiation of the Fourth Five Year Plan was delayed until 1969, although the Third Five Year Plan had ended in 1966. Politically, devaluation was a disaster since it was attacked from all sides as a surrender to the capitalist advice of the IMF/IBRD and Aid India Consortium.

The £-Sterling was devalued in November 1967; the Indian Rupee was not devalued. The £-Sterling-Rupee exchange rate, therefore, changed from £ 1 = Rs 21.00 to £ 1 = Rs 18.00. But the US $-Rupee exchange rate remained unchanged at $ 1 = Rs 7.50.

'Managed' Float

In the early 1970s, the US $ was delinked from its gold parity and started to float against the major currencies of the OECD countries. The fixed exchange rate regime of the Bretton Woods gave way to a floating exchange rate regime. In this changed situation, under the managed float, the Reserve Bank of India started day-to-day adjustment of the exchange rate of the Rupee.

Managed Float: Single Currency Peg

August 1971: With the breakdown of the Bretton Woods system and emergence of an interim floating arrangement for major currencies, there was a change in the exchange rate system of the Indian Rupee. From August 1971, the US $ became briefly the 'designation' and 'peg' currency[1]. The Rupee was pegged to the US $ at the then prevailing rate of $ 1 = Rs 7.50. As the £-Sterling was continued as the 'intervention' currency, the $-Rupee exchange rate was based on the market rate for the £ against US $.

The £-Sterling-Rupee rate was £ 1 = Rs 18.00.

December 1971: In December 1971, after the Smithsonian realignment of major currency rates, the £-Sterling was chosen as the 'designation', 'intervention' and 'peg' currency and remained so upto September 1975. The possible reasons for choosing the £-Sterling as the 'peg' currency may have been because of (i) a clever anticipation of the weakness of the £-Sterling and (ii) the political reaction against the US $ peg subsequent to the 1971 Indo-Pak War and the resultant strained Indo-US relations. Thus, the Indian Rupee was delinked from the US $ and again pegged to the £-Sterling at £ 1 = Rs 18.9677. But the exchange rate of the Rupee was maintained within a wider margin of 2.25 per cent on either side of the new rate as permitted by the IMF to all member-countries. The change in the exchange rate of the Rupee *vis-a-vis* the £-Sterling from £ 1 = Rs 18.00 to £ 1 = Rs 18.9677 led to the depreciation of the Rupee by 5.38 per cent against the £. However, the Indian Rupee appreciated against US $ marginally from $ 1 = Rs 7.50 to $ 1 = Rs 7.28 due to a devaluation of the US $ against gold under the Smithsonian Agreement.

June 1972: Following U.K.'s decision in June 1972 to allow the £-Sterling to float and the depreciation of the £-Sterling against major currencies, the Indian Rupee was revalued by 0.093 per cent on June 26, 1972 to £ 1 = Rs 18.95. The RBI suspended purchases of US dollars on June 24, 1972.

July 1972: Due to a further depreciation of the £-Sterling, the RBI's buying and selling rates for spot £-Sterling were fixed at Rs 18.75 for buying and Rs 18.85 for selling effective from July 4, 1972, thus giving a middle rate of £ 1 = 18.80 which meant an appreciation of the Indian Rupee by 0.79 per cent over the previous prevailing rate. Forward purchase of the £-Sterling was resumed with effect from July 5, 1972.

October 1972: The RBI also decided to purchase from October 9, 1972, US dollars from authorised dealers which had been suspended since June 24, 1972. From October 9, 1972, the purchase of US dollars was made by the RBI at varying daily rates based on the £-Sterling - US dollar exchange rates in the market rather than at fixed rates. The RBI started spot and short-term forward purchases of DM and Yen also from March 4, and May 29, 1974, respectively.

July 1975: In July 1975, the Indian Rupee was revalued again by 1.06 per cent. The middle rate at £ 1 = Rs 18.60 was fixed on July 2, 1975, and remained unchanged upto September 25, 1975.

Managed Float ('Basket' Peg)

September 25, 1975: In the context of the prevalent international monetary situation and having regard to the fact that a multi currency peg was likely to be more suitable and satisfactory than a link with any single reserve currency in a system of floating exchange rates, it was decided to delink the Rupee from the £-Sterling from September 25, 1975. Through an announcement made on September 24, 1975, the Indian Rupee was linked with a selected 'basket' of currencies of India's major trading partners. The £-Sterling, however, continued as the currency of intervention. At the time of the basket link, the Rupee-Sterling exchange rate was £ 1 = Rs 18.3084.

The exchange rate of the Rupee was determined with reference to the daily exchange rate movement of the 'basket' of currencies. The announcement did not mention the names of the weights of the currencies in the 'basket', presumably to avoid speculation against the Indian Rupee and thereby to reduce the undesirable variation in the nominal effective rate. But the major currencies like the US $, £-Sterling, DM, Fr and Yen were included. The exchange rate of the Rupee was maintained within a margin of 2.5 per cent until January 31, 1979 and, thereafter, of 5 per cent on either side of the basket related parity of the Rupee measured in terms of the £-Sterling.

Objectives

The Finance Ministry claimed that the arrangement would impart a greater measure of stability to the exchange rate and, in consequence, to international transactions of India. But the immediate objective of the basket was to prevent further depreciation of the Rupee against other currencies which it was undergoing since 1972 [Verghese, 1984, Pp. 1,096-1,105 and

1,151-1,158]. The second objective was probably to provide a ready technique for managing the daily rates of the Rupee against the intervention currency in order to stabilise the average level of the Rupee. Third, the new basket mechanism was assumed to maintain a stable trade weighted nominal exchange rate over time as well as maintaining the exchange rate of the Rupee against the US $ within a target range related to the day-to-day exchange rate movements of the US $ against major currencies. Fourth, the authorities did not want any further unintended depreciation of the Indian Rupee; for, in the first half of the 1970s, there was a depreciation of the Rupee along with the depreciation of the £-Sterling as the Rupee was linked to the £-Sterling.

Operational Characteristics

In essence, the basket mechanism involves the proportion by which changes in selected currencies will affect the changes in the exchange rate of the linked currency. However, in practice the basket-related management of the Indian Rupee was not automatic, since changes in the market values of these currencies were not intended to automatically result in proportionate changes in the Rupee-£-Sterling rate. There were two important operational characteristics of the basket arrangement. First, the ± 5 per cent margin around the parity for managing the Rupee rate implied that the RBI may or may not adjust the Rupee-£-Sterling rate if the basket value changes are less than 5 per cent on either side of the parity. This system is a flexible managed floating arrangement. Second, once an adjustment in the Rupee-£-Sterling is made, the new parity constituted the basis for determining the ± 5 per cent margin for subsequent changes in the Rupee-£-Sterling rates. Third, the basket link of the Rupee was only a device to guide the managed floating of the Indian Rupee in a situation of large variations in the exchange rate of major currencies.

Basket Linked Management of Rupee

The various steps in constituting a currency basket are: (i) selection of the currencies of the basket, (ii) assignment of weights to the selected currencies, (iii) selection of 'intervention' currency, (iv) determination of the value of the 'domestic' currency against the 'intervention' currency on the date of the basket link, (v) selection of the exchange rate of currencies of the basket on the date of the basket link, (vi) the valuation of all currency components in terms of the 'intervention' currency on the date of basket link [Verghese, 1984].

Ways of Operation of the Basket Link Arrangement

The basket link arrangement can be operated in various ways. One simple method is to constitute a currency basket consisting of absolute units of the selected currencies in proportion to the weights assigned to them. This currency composite represents a given unit (units) of the domestic currency for the purpose of determining the exchange rate of the domestic currency. When measured in terms of intervention currency, the currency composite gives a single measure of the currency basket. An alternative method is the composition of a currency basket in terms of just the assigned weights to the selected currencies rather than in absolute units. The change in the value of the currency basket *vis-a-vis* the intervention currency is measured by the techniques of index number from the base period rate. Both the methods give the same result [Verghese, 1984].

In pursuance of the decision in favour of 'managed float' of the Indian Rupee, the RBI revised its rates for the purchase and sale of the £-Sterling for spot delivery from time to time (Tables- 2 and 3). The RBI rates for spot £-Sterling were revised with effect from September 25, 1975 to Rs 18.26 per £-Sterling for buying and Rs 18.36 per £-Sterling for selling, giving a middle rate of Rs 18.31. The rates were further revised with effect from December 5, 1975 to Rs 18.08 per £-Sterling for buying and Rs 18.18 per £-Sterling for selling, giving a middle rate of Rs 18.13 per £-Sterling.

In the following year, after the 'managed float', the Rupee appreciated against the £-Sterling (Table-2), but depreciated against the US $. The Indian Rupee depreciated from $ 1 = Rs 8.82 on October 31, 1975 to $ 1 = Rs 9.15 on October 29, 1976.

TABLE 2. RBI'S SPOT RATE FOR PURCHASE AND SALE OF UK £ DURING THE YEAR FOLLOWING MANAGED FLOAT

Period			Middle Rate of Rupee/£
(1)			(2)
1975	Sept.	25	18.31
	Dec.	05	18.13
1976	March.	08	17.75
	March.	10	17.25
	April.	03	16.90
	April.	23	16.50
	May.	29	16.00
	Sept.	21	15.40
	Sept.	29	14.70

Sources: *Report on Currency and Finance*, Vol. 1, (Various Years), Reserve Bank of India, Bombay.
Economic Review, 1975-76, Ministry of Finance, Government of India, New Delhi.

TABLE 3. AVERAGE MAGNITUDE OF RUPEE - £ RATE CHANGES

Year	Magnitude of Change (Average in %)	No. of Changes
(1)	(2)	(3)
1975	1.22	3
1976	3.08	8
1977	3.49	1
1978	1.75	7
1979	1.46	13
1980	0.62	34
1981	0.98	71
1982	0.51	94
1983	0.55	124
1984	0.51	142
1985	0.79	154

1976 - 80: Upto 1978, adjustments in the Rupee-Sterling rate were of larger magnitude and were being made at less frequent intervals. Since 1978, a policy of more frequent adjustments of small magnitudes was adopted. This policy enabled the RBI to effect small doses of devaluation at frequent intervals. Although the annual average exchange rate of the Rupee-£-Sterling remained unchanged, the Rupee depreciated against the £-Sterling during 1976-1980 (Table-4). The Indian Rupee also depreciated against the D. Mark and the Japanese Yen.

TABLE 4. EXTERNAL VALUE OF THE INDIAN RUPEE IN 1976-80
(Rs per unit of Foreign Currency)

Period July - June (Annual Average of Monthly Averages)	$	£	DM	Yen
(1)	(2)	(3)	(4)	(5)
1976-77	8.91	15.26	3.68	0.0312
1977-78	8.50	15.52	3.92	0.3520
1978-79	8.21	1.76	4.10	0.0429
1979-80	8.03	17.92	4.49	0.0346
1980-81	8.04	18.42	4.02	0.0376

Notes: i) For £, it is the middle rate of the RBI quotations.
ii) For other currencies the rates are the middle rates on the London Market as crossed with the RBI middle rate for £.
Sources: *Report on Currency and Finance* Vol. 1, (Various Years), Reserve Bank of India, Bombay.
Economic Review, 1980-81, Ministry of Finance, Government of India, New Delhi.

TABLE 5. EXCHANGE RATE OF RUPEE (1981-84)

Year/ Date	Month		Rs per US $
(1)			(2)
1981	March	31	8.24
	June	30	8.75
	Dec.	31	9.10
1982	March	31	9.37
	June	30	9.49
	Sept.	30	9.72
	Dec.	31	9.72
1983	March	31	9.10
	June	30	10.11
	Sept.	30	10.23
1984	March	31	10.78
	June	29	11.20
	Sept.	28	11.90
	Dec.	31	12.45

Source: *IMF Survey*, 1981 to 1985, (Various Issues).

1981 - 85: The devaluation or the depreciation of the Indian Rupee was one of the major condition of the IMF loan to India in 1981 which was disbursed over a period of four years.[2] During the period of disbursement of the IMF loan (1981-84), there was a continuous depreciation in the exchange rate of the Rupee *vis-a-vis* the US $. The rate which was $ 1 = Rs 8.24 on March 31, 1981 depreciated to $ 1 = Rs 12.45 on

December 31, 1984 (Table-5). The average of the months' rate of exchange of the Indian Rupee also showed a downward trend (Table-6).

TABLE 6. AVERAGE EXCHANGE RATE OF RUPEE/$ 1980-1986

Period (Average of Months)	Rs/US $
(1)	(2)
1980	7.863
1981	8.659
1982	9.455
1983	10.099
1984	11.363
1985	12.369
1986	12.610

Source: *Economic and Political Weekly*, Vol. XXIII, No. 11, p. 512.

TABLE 7. NOMINAL TRADE WEIGHTED EXTERNAL RATE (TWER) INDICES OF THE RUPEE (Exchange Rate End - 1975 = 100)

Year (Averages of Quarters)	5-country Total Trade Weighted (Nominal)	10-country Total Trade Weighted (Nominal)
(1)	(2)	(3)
1981	103.22	100.71
1982	107.12	103.08
1983	111.66	106.88
1984	120.33	114.11
1985	130.14	122.37

Notes: i) Constructed from the Table in Verghese, 1986, *Economic and Political Weekly*, Vol. XXI, No. 33.
ii) Exchange Rates are expressed as Rupees per foreign currency.

During 1981-85, the Indian Rupee strengthened against the £-Sterling, but the 5-country and 10-country Nominal Trade Weighted Exchange Rate Indices of the Rupee depreciated from 103.22 to 130.14 and 100.71 to 122.37, respectively[3] (Table-7). The nominal depreciation of the Indian Rupee was around 26 per cent in the 5-country TWER index and 22 per cent in the 10-country TWER index over the average level in 1981 during this period. Thus in average terms, the Indian Rupee depreciated around 25 per cent against the currencies of the main trading partners. But exports received no boost from a depreciating exchange rate, rising only by 3.6 per cent per annum in real terms from 1978-79 to 1983-84. Though, this trend was attributed to a slow down of the world trade, it was also due to the fact that inflation in India exceeded that of its main trading counterparts and rivals.

TABLE 8. EXCHANGE RATE OF RUPEE (1986 - 92)

Period	Rs/ US $
(1)	(2)
1986-87	12.78
1987-88	12.96
1988-89	14.48
1989-90	16.65
1990-91	17.94
1991-92	24.47

Sources: *RBI Bulletin*, October 1991, October 1992; Supplement: Annual Reports, 1990-91 & 1991-92.

TABLE 9. TREND IN RUPEE'S NOMINAL EFFECTIVE EXCHANGE RATE

Year/Per		Nominal Effective Exchange Rate (NEER) (5-country Index)
(1)		(2)
1985		100.00
1986		82.14
1987		72.16
1988		64.08
1989		57.69
1990		52.03
1991	Jan.	47.32
	Feb.	45.36
	March	46.32
	April	45.53
	May	44.37
	June	44.17
	July	36.25
	Aug.	35.70
	Sept.	34.96
	Oct.	36.65
	Nov.	34.12
	Dec.	33.65
1992	Jan.	33.42
	Feb.	33.86
	March	32.06
	April	30.94
	May	30.85
	June	30.37
	July	29.81
	Aug.	29.97
	Sept.	29.74
	Oct.	30.32
	Nov.	31.32
	Dec.	30.75
1993	Jan.	30.86

Note: These are export-weighted indices with weights based on the direction of India's export in 1982-83. The USA, Japan, the U.K. Germany and France included in the five-country index.
Source: *Economic Survey*, 1992-93, Government of India, New Delhi.

1986 - 90: The external value of the Indian Rupee declined steadily but substantially from 1986 onward (Table-8). Between 1985-86 and 1988-89, the Rupee depreciated by 51.4 per cent against the £-Sterling and by 20 per cent against the US $. It depreciated against the SDR by 45.6 per cent. The 5-country index of nominal effective exchange rate of the Rupee also depreciated from 82.14 to 52.03 between 1986 and 1990 (Table-9). In spite of the depreciation of the Indian Rupee, there was a marked increase in the trade deficit (Table-10). The increase in the trade deficit was ascribed to the liberal import policy followed by the Central Government to modernise the economy and to update technology in order to improve India's competitiveness and expand exports.

TABLE 10. FOREIGN TRADE OF INDIA

Year	Export	Import (Rs Crore)	Trade Balance	Export	Import (US$ Million)	Trade Balance
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1970-71	1,535	1,634	-99	2,047	2,179	-132
1971-72	1,608	1,825	-217	2,161	2,453	-132
1972-73	1,971	1,867	104	2,566	2,431	135
1973-74	2,523	2,955	-432	3,239	3,793	-554
1974-75	3,329	4,519	-1,190	3,835	5,206	-1,371
1975-76	4,042	5,265	-1,223	4,501	5,863	-1,362
1976-77	5,142	5,074	68	5,726	5,650	76
1977-78	5,408	5,020	-612	6,296	7,008	-712
1978-79	5,726	6,811	-1,085	6,958	8,275	-1,317
1979-80	6,418	9,143	-2,725	7,924	11,287	-3,363
1980-81	6,711	12,549	-5,838	8,486	15,868	-7,382
1981-82	7,806	13,608	-5,802	8,704	15,173	-6,469
1982-83	8,803	14,294	-5,491	9,108	14,788	-5,680
1983-84	9,771	15,831	-6,060	9,449	15,311	-5,862
1984-85	11,744	17,134	-5,390	9,878	14,412	-4,534
1985-86	10,895	19,658	-8,763	8,905	16,067	-7,162
1986-87	12,452	20,096	-7,644	9,745	15,727	-5,982
1987-88	15,674	22,244	-6,570	12,088	17,156	-5,068
1988-89	20,232	28,235	-8,003	13,970	19,497	-5,527
1989-90(PR)	27,681	35,416	-7,735	16,626	21,272	-4,646
1990-91	32,553	43,193	-10,640	18,143	24,073	-5,930
1991-92	44,042	47,851	-3,809	17,866	19,411	-1,545
1992-93	49,336(P)	-	-	-	-	-
1993-94	55,266(P)	-	-	-	-	-

Notes: PR - Partially Revised
P - Projected.
$ 1 billion = $1000 million
Sources: *RBI Bulletin*, February 1993, p. S.198, Table No. 31, Annual Estimates. Data for 1970-71 to 1991-92, 1992-93 and 1993-94 estimated by the author.

Thus, in the two decades of 'managed float', the Indian Rupee depreciated more in terms of major currencies of the industrialised countries. As the value of the SDR is some kind of a weighted average of the value of currencies of leading industrialised countries[4] like the U.S.A., the U.K., Germany, France and Japan, the exchange rate of the Indian Rupee in terms of SDR is more representative. The exchange rate of the Indian Rupee per SDR was 7.58 in 1970 which changed to 10.63 in the first week of January 1979 and reached 26.06 by the end of 1990 and 36.22 by the end of 1991 (Table-11). The process of depreciation of the Indian Rupee accelerated during the 1980s. But during the period 1971-90, the depreciation of the Rupee has had no favourable effect on the dollar value of exports and no contractionary effect on the value and volume of imports (Table-10). Thus, the depreciation of the Rupee has had no influence on the trade balance.

1991: Two-Stroke Devaluation

India's problem since August 1990 was more complex and political than economic. The

credit-rating and country-risk status of India assigned to it by an international agency like MOODY was very low, not only due to economic problems like current account deficits, high debt-service ratio, etc., but also because of the internal political conditions.

The situation became so alarming that India was unable to get either official loans or commercial loans from external sources. The Government of India was forced to swap 20 tonnes of confiscated gold in the Union Bank of Switzerland for a loan of $200 million and to mortgage 47 tonnes of gold with Bank of England for a further loan of $200 million. But this meagre amount was not sufficient to solve the debt problem. India was forced to go for an IMF loan.

TABLE 11. INDIAN RUPEE PER SDR (1978-1992)

Month	1978	1979	1980	1981	1982	1983	1984
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
January	-	10.63	10.50	10.09	10.54	10.88	11.17
February	-	10.62	10.36	10.08	10.46	10.80	11.27
March	-	10.61	10.47	10.06	10.44	10.85	11.48
April	-	10.47	10.19	10.06	10.46	10.85	11.47
May	-	10.44	10.32	09.95	10.57	10.89	11.51
June	-	10.35	10.38	09.89	10.42	10.84	11.53
July	-	10.34	10.33	10.15	10.43	10.74	11.57
August	-	10.50	10.22	10.21	10.40	10.69	11.78
September	10.55	10.74	10.29	10.51	10.40	10.70	11.86
October	10.25	10.67	10.16	10.64	10.43	10.88	11.97
November	10.73	10.52	09.95	10.55	10.56	10.93	12.11
December	10.54	10.63	10.03	10.56	10.58	10.94	12.16

TABLE 11. *(Contd.)*

1985	1986	1987	1988	1989	1990	1991	1992	1993
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
12.33	13.42	16.40	18.09	19.95	21.32	25.80	36.49	35.99
12.38	13.97	16.49	17.64	20.04	22.56	27.27	35.89	35.76
12.59	14.11	16.51	17.81	20.21	22.19	26.88	35.25	43.10
12.17	14.20	16.62	18.17	20.49	22.53	27.05	36.26	44.03
12.45	14.64	16.53	18.28	20.50	22.93	27.66	36.01	44.25
12.33	14.72	16.61	18.59	20.11	22.95	27.95	36.62	-
12.27	14.83	16.50	18.29	20.93	23.28	34.29	37.44	-
12.32	15.12	16.44	18.42	20.94	23.93	34.65	37.41	-
12.61	15.31	16.81	18.71	20.81	24.92	35.12	37.58	-
12.78	15.63	16.94	19.43	21.52	25.89	35.14	37.48	-
13.07	15.76	17.58	20.33	21.66	26.17	35.88	35.90	-
13.25	15.80	17.95	20.46	21.83	26.06	36.22	36.49	-

Note: Rupee / SDR rate refers to the middle of the month, usually 15th of every month, if not available on that day, then 16th or 17th of the month.
Source: *IMF Survey*, 1978 to 1993, (Various Issues).

India borrowed Rs 3,153 crore from the IMF in January 1991 under CCFF and another $200 million in July 1991. The IMF also sanctioned $2.2 billion stand-by loan to be paid in instalments during 1991 and 1993. There are conditions for IMF loans except those under the tranche policies. Developing countries are primarily forced by the IMF, in most cases, to devalue or depreciate their currencies and to open up their economies to external trade. India was also a victim of this practice in 1991.

The Rupee was devalued first on July 1, 1991 and again on July 3, 1991 by which the Indian Rupee depreciated[5] on an average by 20 per cent against the five major currencies (£, $, Y, DM, Fr). The 20 per cent devaluation was as recommended by the IMF for its financial assistance in its report on Trade Reform in India. This was the

sharpest depreciation of the Indian Rupee in one day since the introduction of the 'managed float'. With the two adjustments, the Indian Rupee depreciated by 17.38 per cent against the £-Sterling, 18.74 per cent against the US $, 17.21 per cent against the DM, 18.25 per cent against the Japanese Yen and 17.35 per cent against the French Franc. The two-stroke devaluation brought the exchange rate to Rs 41.59 per £-Sterling and Rs 25.95 per US $ as against Rs 34.36 per £ and Rs 21.24 per US $ on June 28, 1991. Thereafter the Rupee exchange rate was anchored to a Rupee-US $ link. That is, the US $ became the intervention currency instead of the £-Sterling.

Government Justification for the 1991 Devaluation

The devaluation/downward adjustment of the Indian Rupee was justified by the Government on various grounds such as: (i) to boost exports by making Indian goods relatively cheaper in the international market, (ii) to restore confidence in the Indian Rupee at a time when the country's foreign exchange reserves were very low, (iii) to check the anticipated run on the Rupee as the then value of the Indian Rupee approximated roughly the unofficial *havala* rates, and (iv) to restrict imports as they would be costlier.

1991 Devaluation: Not Helpful

The usual argument, that a depreciation of the domestic currency will boost exports and reduce imports by making foreign currency prices of domestic exports lower and domestic currency prices of imports higher and thereby improve the balance of payments, may not be valid for a developing country like India. There are a number of conditions that need to be satisfied for development to have a favourable impact on exports. But the prevailing conditions in India have been just the contrary:

i) Price Elasticities: Price elasticities of exports of developing countries including India are very low and so lower foreign currency prices of India's exports hardly boost its exports to developed countries. Due to the problem of inelastic demand, the value of exports may even fall.

ii) Prices of Primary Products: Prices of many primary exports of developing countries including India are usually fixed in terms of the US $ or other convertible currencies and hence are unaffected by the change in the exchange rates.

iii) Quota System: Exports of certain commodities such as textiles and garments are regulated by quotas under international agreements in which physical volume is the limiting factor. Therefore devaluation/depreciation/ downward adjustment in the value of the Indian Rupee cannot boost exports.

iv) Non-price Factors: Important non-price factors like bilateral trade agreements, non-tariff barriers, subsidy systems, overall trade, etc., play an important role in promoting exports.

v) Protectionism: Growing protectionism practised by developed countries precludes any gains in the traditional areas of export. The World Bank admitted that the protectionist policies of the developed countries are increasingly discriminatory against the exports of developing countries.

vi) Import Cost: The import-intensity nature of the new type of Indian exports neutralises any competitive advantage since simultaneously there will be a rise in the cost of imports.

vii) Poor Quality/Delivery: The deceleration in the growth of exports due to the poor quality and irregular delivery are not supposed to be affected by the devaluation of the Indian Rupee.

viii) Inflation: Devaluation may not reduce the export prices in US $ due to (a) rise in the cost of imported inputs, and (b) inflationary situation created by (1) rise in cost of import of food, fertilizer and fuel, and (2) monetisation of deficit owning to a rise in debt-service burden consequent upon devaluation [Sarkar, 1992, Pp. 1,259-1,266].

ix) Structural Factors: Even if dollar prices of exports fall and demand rises due to devaluation, the supply of export products may not rise, particularly in the short or the medium term, due to various structural bottlenecks such as power shortage, transport constraints and inelastic supply of some specific inputs.

x) Fallacy of Competition: Devaluation by one

country may start a spiral of competitive devaluation by other exporting countries producing similar kinds of products. This may result in over-supply of the commodities in the international market and consequent fall in prices. This is the fallacy of competition [Sarkar, 1992]. The Structural Adjustment Programmes of IMF/World Bank in copper-exporting countries in 1975 suffered from this fallacy. The collapse of the primary commodity prices in the 1980s has been prolonged and has severely affected many developing countries. One study suggests that the over-supply of commodities due to depreciation of currencies was partly responsible for this situation [Bhaskar, 1991].

1981-vs-1991 Devaluation

The devaluation of the Indian Rupee during 1981 and 1985 was due to the loan of SDR 5 billion from the IMF. The Government of India was not compelled by the IMF to go for direct and open devaluation in 1981 as it was done in 1966 or in 1991 due to various conditions prevailing in that year (1981). (i) There was a stable and strong Government at the Centre in 1981, not an unstable and minority Government as in 1991. (ii) The foreign exchange crisis in India in 1981 was not as serious as in 1991. (iii) Credit-rating of India was very good in 1981 as compared to 1991; India was also able to get commercial loans from foreign countries in 1981. (iv) India's bargaining power with the IMF was better due to COMECON which is now defunct with the breakdown of the socialist system in the USSR and other Eastern European countries. (v) There was no storm of privatisation and liberalisation all over the world, including the socialist countries, during the early 1980s.

1990-91 and 1991-92

Before the two-strokes devaluation, between end-March 1990 and end-March 1991, the Rupee depreciated against all major currencies, the depreciation being maximum against the Japanese Yen (20.6 per cent), followed by £-Sterling (17.0 per cent) and the US $ (11.8 per cent) and DM (11.0 per cent). During 1990-91 (April-March), the Rupee-Sterling rate was adjusted 282 times as against 252 times during the corresponding period of 1989-90. Further, during April-June 1991, the Rupee depreciated by 6.6 per cent against the US $, by 8.7 per cent against the Japanese Yen and 0.8 per cent against £-Sterling. During the year 1991-92, the official rate of the Rupee showed a depreciation against all major currencies on an average basis by 30.7 per cent against the Yen, 26.7 per cent against the US $, 21.9 per cent against £-Sterling and by 21.8 per cent against the DM.

'Hidden' Partial Float: (Exim Scrips)

In July 1991, the Exim Scrips were introduced as a price-based device to control imports. It was a step to avoid the problems associated with import licensing system such as corruption and misuse and to dismantle quantitative controls.

The main features of Exim Scrips were: (i) they were essentially tradeable import licences issued to exporters for 30 per cent of the value of exports; (ii) they were used to import a wide range of items which were earlier possible against supplementary licences; (iii) supplementary licences were abolished with the introduction of Exim Scrips; (iv) Exim Scrips were traded at a premium which accrued to exporters of goods and services as well as to those making remittances to India; (v) these Scrips were issued case by case like other import licences requiring careful handling and needed surveillance as they could be forged; and (vi) Exim Scrips were transferable, as was, more or less, the case with replenishment licences, that the Exim Scrips were to replace.

Thus, due to the introduction of Exim Scrips which were traded at premium some sort of a dual exchange rate prevailed: one was the official rate and the other was the informal rate determined by the premium the market placed on the Exim Scrips.

1992: Partial Float/LERMS

The introduction of the Liberalised Exchange Rate Management System (LERMS) in the 1992-93 Union Budget moved further in the

direction of eliminating licensing control and allowing the exchange rate to reflect the scarcity of foreign exchange. Under this system, 40 per cent of foreign exchange earnings were to be surrendered at the official exchange rate and the remaining 60 per cent was to be converted at a market-determined rate. Thus the Exim Scrips were replaced by LERMS.

The foreign exchange surrendered to the RBI at the official rate was utilised to import essential items. All other imports of raw materials, components and capital goods were placed under OGL to be financed out of the remaining foreign exchange at the market rate of exchange. The foreign exchange required for other payments on private account was to be obtained at the market rate.

LERMS: Main Features

i) Forty per cent of the proceeds of exports and inward remittance was purchased at the official rate of exchange by the RBI for official use. All other receipts and payments were converted at the market rate of exchange.

ii) Receipts and payments on capital account were subject to controls. These transactions were made at the market rate except in the case of IMF flows and disbursements from multilateral agencies against rupee expenditure.

iii) All foreign exchange receipts were surrendered to the authorised dealers on the day of realisation.

iv) All transactions were conducted within the framework of exchange control regulations.

v) Imports under advance licences and replenishment imports against gems and jewellery exports were paid for at the official rate to the extent of 40 per cent of the value of imports.

vi) The RBI had the flexibility to choose either the £-Sterling or US $ as the intervention currency depending on the circumstances.

vii) Forward sales of the US $ and the £-Sterling had been discontinued during 1992-93.

viii) Exporters and recipients of inward remittances were allowed to maintain 15 per cent of their receipts in a foreign currency account.

ix) Export Processing Zones (EPZs), 100 per cent Export Oriented Units (EOUs), units in Electronic Software Technology Parks (ESTPs) and Electronic Hardware Technology Parks (EHTPs) were allowed to convert all their foreign exchange earnings at the market rate.

The Government declared that LERMS was a transitional arrangement and that it was Government's intention to move towards an independent float.

Implications of LERMS

The LERMS was criticised as it amounted to an implicit tax on exports. It was argued that dual rates discriminated against exporters because the dollars they earned fetched them fewer Rupees than the amount they would have to pay for the dollars they would require to buy imported inputs. The system also discriminated within the export sector, against those sectors which had a higher percentage of imported inputs relative to domestic value added. This was because the imported inputs were paid for at the market rate, whereas they fetched a weighted average of the official and market rates when they become embodied in exports. The LERMS also provided a bias towards import-substituting activities.

TABLE 12. RUPEE/$ EXCHANGE RATE AFTER LERMS (1992)

Period	RBI Rate	Market Rate *	Weighted Rate **
1992 Feb. 28	25.04	-	-
March 3	25.89	29.20	27.87
March 31	25.89	31.23	29.09
April 30	25.89	30.61	28.72
May 29	25.89	30.56	28.69
June 30	25.89	30.66	28.75

Notes: * Indicative rate of Foreign Exchange Dealers' Association of India (FEDAI).
** 40% of Official (RBI Rate) and 60% FEDAI indicative rate.
Source: *RBI Bulletin*, October 1992, Supplement Annual Report 1991-92.

Though the system of partial float was unfavourable to import-intensity exports like engineering, chemicals, plastics, (where import-intensity of export is around 40 per cent compared to 15-20 per cent in traditional industries), it was favourable to traditional products like agro-based products, leather products and textiles which use little imported inputs and equipment [Gupta, 1992, Pp. 2,091-2,092]. But the prospects for these products in the international market were not promising due to supply constraints (as in the case of tea), fall in export earnings (as for jute) and barriers to entry (as for textiles and agricultural products).

Development since LERMS

The LERMS exchange rate mechanism was introduced on February 29, 1992 (Saturday). There was no trading on Sunday being a holiday. The RBI announced on Sunday (March 1, 1992) that there would be no trading on Monday (March 2, 1992). When the exchange market went into business on Tuesday (March 3, 1992), the Rupee settled in the open market at around $ 1 = Rs 29.20. By mid-February 1993, the Rupee stood depreciated in the open market by about 22 per cent in relation to the official exchange market rate. With this steep fall in the market rate the RBI kept an informal check on the entry of large importers in the market. The RBI informally conveyed to the authorised dealers that no large import deals - mainly oil deals - could be placed on the market without prior clearance from the monetary authorities [*Economic Times*, February 11, 1993].

TABLE 13. AVERAGE VALUE OF $ IN OPEN MARKET

Period	Rs/$
March 1992	30.00
May 1992	30.34
July 1992	30.24
September 1992	30.05

Source: *The Economic Times*, Feb. 24, 1992.

However, upto December 1992, the premium on the US$ over the official rate of the Rupee remained more or less constant at between 15 and 18 per cent (Tables- 12, 13 and 14). Over these ten months, LERMS had worked properly with the spread between the market and the official rates having moved between a minimum of 10.5 per cent and a maximum of 21.5 per cent. But FEDAI middle rate was Rs 33.50 per US$ on February 11, 1993, compared to the official rate of Rs 26.20 - thus having a spread of 28 per cent between the two rates. The 28 per cent spread between the open market rate and the official rate was far in excess of the 15 per cent spread the Government had hoped would be maintainable. Just after the introduction of LERMS, the spread was around 20 per cent for two months, and remained stable at around 17 per cent with open market rate for the Rupee ranging between Rs 30.10 and Rs 30.50 per US$ for about nine months [EPW, 1993]. But to maintain this level, the RBI had to intervene in the market.

Devaluation/Depreciation

The official exchange rate of the Indian Rupee at the time of the introduction of LERMS was $ 1 = Rs 25.89; this rate changed to $ 1 = Rs 26.20 on December 4, 1992. Thus, the official exchange rate of the Rupee *vis-a-vis* the US$ got depreciated by 1.18 per cent for the first time after the RBI linked the Indian Rupee to the US$. This was perhaps done to narrow the gap between the official and the market rate for preparing the ground for an 'independent float' of the Rupee. Thus, if the two-stroke devaluation of July 1991 is taken into consideration, then the total depreciation of the Rupee *vis-a-vis* the US$ since July 1991 to mid-February 1993 is about 43 per cent. The main causes of depreciation of the Rupee since March 1992 were: (i) speculation of full float in the 1993-94 Union Budget, (ii) heavy import demand due to liberalisation, and (iii) inadequate export growth.

Arguments for the So-called 'Full Convertibility' in India

Various arguments were advanced by different interest groups in India for moving towards an unified exchange rate/full convertibility[6]. Important among them was the incentive to exporters as they would be able to convert the whole of their US$ earnings at the market rate.

The international oil prices were very low. It was forecast that the price of oil would range between $ 16 and $ 17 per barrel in the latter part of the year. There was, therefore, a possibility that at least a part of the higher rupee cost of importing crude oil, under the independent float of the Indian Rupee, would be compensated by the lower international price of oil.

Again, an independent float would lead to a more efficient allocation of resources resulting in price stability and, in the long-run, would diminish the flight of capital. It would also increase the confidence of international investors, thereby helping the inflow of foreign capital.

TABLE 14. RE/$ RATE DURING 1992-93

Period			Official Exchange Rate/RBI Ref. Rate	Int.-Bank Clearing	Composite Rate
(1)			(2)	(3)	(4)
1992	Oct.	30	25.95	30.05	28.39
	Nov.	6	25.95	30.14	28.44
	Nov.	17	25.95	30.09	28.42
	Nov.	30	25.95	30.29	28.53
	Dec.	4	26.32	30.75	28.93
		16	26.32	30.71	28.91
		23	26.32	30.77	28.94
1993	Jan.	4	26.32	30.78	28.94
		15	26.32	30.77	28.94
		28	26.32	31.30	29.26
	Feb	1	26.32	31.45	29.35
		5	26.32	32.63	30.06
		11	26.32	33.50	30.58
		26	26.32	33.06	30.32
		27	26.32	33.06	30.32
	Feb	28	Sunday		-
	Mar.	1	No Trading	-	-
		2	-	32.00	-
		3	-	31.86	-
		4	-	31.80	-
		5	-	31.65	-
		9	31.42*	31.40**	-
		22	31.44	31.42	-
		30	31.21	31.19	-
	April	7	31.24	31.22	-
		15	31.40	31.40	-
		22	31.32	31.32	-
		29	31.35	31.32	-
	May	2	31.31	31.36	-
		7	31.32	31.31	-
		15	31.32	31.32	-
		26	-	31.35	-
		28	-	31.38	-

Notes: * RBI reference rate
** Open market rate.
Source: *The Economic Times*, Various Issues.

Supporters of the partial float/dual rate in India argued that a dual exchange rate coupled with low tariffs could maximise economic activity as against an independent float/unified rate and high tariffs.

Between these two extreme views, there was a view in India favouring an independent float provided there was (i) a fall in the inflation rate, (ii) an improvement in the fiscal situation, exports and foreign investment flows, (iii) decontrol of domestic prices of essential imports, (iv) an increase in cost efficiency of Indian industry, (v) an attractive interest rate structure to induce the inflow of short-term funds from abroad, (vi) the removal of cost-plus pricing of petrol and fertilizer as well as subsidies so that market imperfections are minimum, and (vii) a robust balance of payments situation. The three pre-conditions

mentioned in the interim report of the Rajaraman Committee for a full float of the Indian Rupee were: (i) a comfortable level of foreign exchange reserves, (ii) a low enough rate of inflation, and (iii) a mechanism through which the Government could pass on changes in the prices of imported goods to the consumers.

Whatever may be the arguments for and against, the Government indicated that the partial float was a transitional arrangement and that its intention was to move towards full convertibility on current account, including unification of the exchange rate over a period of two or three years. The pace of movement would be determined by expectations about inflation and the overall balance of payments position. But the Government did not wait for two to three years. The 'independent float'[7] of the Rupee was introduced in the 1993-94 Union Budget.

Independent Float/Full Convertibility

An important feature of full flexibility through independent float is that the rate of the domestic currency in terms of the foreign currency is determined by market forces. In this system, the central banking authority may intervene only by purchase or sale of foreign exchange in the market.

Two Types of Market Arrangements

In the case of independent floating, there are two types of market arrangements: (i) the auction system and (ii) the inter-bank spot exchange market. Under the auction system, receipts from specified exports and services are surrendered to the central bank at the prevailing exchange rate and are auctioned by the authority/central bank on a regular basis. In the second arrangement the commercial banks and, in some cases, licensed foreign exchange dealers participate in an inter-bank spot exchange market. The exchange rate is determined on the basis of negotiations between banks/dealers and their clients and in transactions between banks/dealers in inter-bank spot market. The second system of market arrangement has been adopted in India.

The authorities/central banks play a much more active role under the auction system than under the inter-bank market. The inter-bank market is, however, superior to the auction system due to (i) freedom from political responsibility for movements in the exchange rate, (ii) more information on overall supply of foreign exchange, and (iii) lower proneness to volatility and destabilising action, it being less centralised.

Convertibility

The establishment of currency convertibility is an important component of the reforms being implemented or contemplated by countries making the transition from centrally planned/state-controlled economy to a market-oriented economy. Three reasons are usually proposed for currency convertibility in such countries, viz., (i) to import world prices on which to base the reform process, (ii) to facilitate the import of foreign capital, and (iii) to aid macro-economic stability. It is to be mentioned that an unified exchange rate is one of the various steps towards the full convertibility of a currency.

Convertible Currency: Meaning

A fully convertible currency is one "which any holder is free to convert at market exchange rates - fixed or flexible - into one of the major international reserve currencies" [Green and Israd, 1991]. The currency convertibility implies an absence of restriction on foreign exchange transactions but not necessarily on international trade or capital flows. In the case of current account convertibility, there is a much greater choice of goods for individuals. Second, there is the emergence of a competitive environment. Third, it provides incentives to producers for efficient-resource allocation. However, there is a danger of unemployment and idle capacity due to current account convertibility, since foreign products may be preferred to domestically produced goods. Moreover, there will be reduction in real wages to make domestic products competitive in the face of foreign competition.

Similarly in the case of 'capital account convertibility'[8], there is a risk of capital flight and greater volatility in exchange rates, external

reserves or interest rates, though it may be helpful in a few cases to attract foreign capital. Both current and capital account convertibility, by allowing greater movement in current or capital accounts of the balance of payments can complicate macro-economic policy making. Under a flexible exchange rate system, fluctuations in exchange rates due to balance of payments trends will affect domestic prices and incomes; this will create problems for policy markers to achieve sustained non-inflationary growth.

Conditions for Success of Currency Convertibility

Conditions at the micro-level for currency convertibility, particularly in the process of liberalisation or in transition from state-directed activity to market-oriented activity, would have to include (i) autonomous enterprises, (ii) hard budget constraints, and (iii) price decontrols. At the macro-level, the conditions to obtain would have to be (i) fiscal discipline, (ii) firm monetary policy, (iii) elimination of the monetary overhang, (iv) strong balance of payments position, and (v) an adequate level of foreign exchange reserves. Currency convertibility should not be introduced unless budget constraints are tightened and excess liquidity is mopped up . Otherwise, prise stability will be endangered.

Thus, though modified LERMS was introduced in the 1993-94 Union Budget, neither the conditions for currency convertibility are present in India nor is the Indian Rupee convertible in the true sense of the term. At best, there is flexibility in current account but no flexibility in capital account. The present exchange system thus appears to be a 'floating' of the Indian Rupee on current account.

Floating of Rupee

Presenting the 1993-94 Union Budget on 27th February 1993, the Finance Minister said: "The Government has decided to eliminate the dual rate arrangement. All exporters as well as other foreign exchange earners such as our workers abroad, will henceforth be allowed to convert 100 percent of their earnings at the market rate. All imports will henceforth have to be paid for at the market rate". Thus, as it was argued that it put an implicit tax on exporters, the so-called dual rate system was abolished in the 1993-94 budget and the Indian Rupee started floating from March 2, 1993.

Features of Modified LERMS

The following are some of the important features of the new system as per the RBI clarification on 'Unified Market Determined Exchange Rate System' issued on Monday, March 1, 1993, in a question-answer format [*Economic Times*, March 2 , 1993].

(i) RBI exchange rate for the Indian Rupee is fixed on the basis of the prevailing market exchange rate, which is determined on the basis of the forces of demand and supply. This exchange rate is also applicable to authorised dealers in India for commercial transactions.

(ii) RBI has the discretion to intervene in the foreign exchange market by its sales and purchases.

(iii) All foreign exchange transactions of the authorised dealers are to on the basis of market determined exchange rates.

(iv) The market-determined exchange rate is applicable to all foreign exchange payments, both on government and private account.

(v) All receipts, whether on current or capital account of the balance of payments, are to be converted entirely at market rates of exchange.

(vi) Export proceeds and remittances received from aboard are to be converted entirely at the market rate under the modified system. Export proceeds are required to be surrendered by exporters to authorised dealers in India. The facility of retention by exporters of 15 per cent of their export proceeds, and the facility to retain funds upto 15 per cent to beneficiaries of inward remittances of current nature in a foreign currency account with authorised dealers in India, continue to be available.

(vii) Foreign exchange remittance abroad is to be subject to exchange control regulation. The RBI's permission is not necessary for foreign exchange remittance abroad in all cases.

(viii) The intervention currency continues to be the US$. The RBI has the discretion to sell and buy the US$ only to and from authorised dealers. The RBI will sell the US$ to authorised dealers only for such purposes as approved by the Government of India such as: (a) for debt service repayment on government account, and (b) as a transition arrangement for meeting (i) 40 per cent of the value of imports under advance licences, import licences, etc., and (ii) full value of imports under exim scrips and replenishment and other licences. The RBI will buy only the US$ from an authorised dealer and not any other foreign currency.

(ix) The RBI will not sell or buy to/from the authorised dealers any currency forward.

(x) The exchange rates, to be quoted by money changers for transactions in foreign currency and travellers' cheques, will be the market - related rates.

Development since Floating of Rupee

A few minutes before the presentation of 1993-94 Union Budget announcing the 'Floating' of the Rupee (modified LERMS), the Reserve Bank of India announced further relaxation in the Exchange Control Regulation with regard to the authorised dealers' power relating to travel abroad for business, study purposes, tours/conferences, etc.; foreign currency account invoice value/remittance of quality claim, non-resident accounts, remittance of dividends and from non-resident investors. There was no business in the foreign exchange market on the day following the presentation of the Union Budget. The inter-bank foreign market remained closed on Monday (March 1, 1993) according to instructions issued by the RBI and no merchant transactions were put through in order to facilitate a smooth transition to the modified system. The only transactions put through were for tourists who wanted to encash travellers' cheques.

The RBI asked for all authorised dealers to submit a report on their net Rupee position, account balances and over-bought or over-sold foreign currency position at the close of business on February 26, 1993. RBI also set March 10, 1993 as the cut-off date/deadline for accepting all claims for purchase of the US $ at the official rate in force on February 26, 1993. For this purpose, the requirements relating to minimum amounts and multiples were suspended.

The Indian Rupee firmed up in the market by as much as about Rs 1.06 to the US $ at the end of the first day of 'floating' on Tuesday, March 2, 1993. At the close of trading on that day (March 2, 1993), the Rupee stood at Rs 32.00 per US $ as against the close of Rs 33.06 on February 26, 1993 - the eve of the 1993-94 Union Budget. At the peak, the Rupee touched Rs 31.89 per US $ for short while during the day. It is but natural that the open market rate settled between the former official rate and the open market rate; more particularly, between the composite rate and the open market rate at the first instance (Table-14). Along with spot rates, the forward premium also dropped significantly. The Rupee firmed up against the US $ on the first day of trading mainly because of the rise in the supply of the US $ due to entry in a big way of exporters who had stayed away from the foreign exchange market for about two months on rumours of 'floating' of the Rupee and the expectation of a consequent depreciation of the Indian Rupee. But the Rupee weakened against the SDR which is more representative of the external value of the Indian Rupee. On March 2 1993, the rate was SDR 1 = Rs 44.1255 compared to SDR 1 = Rs 36.0538 on February 26, 1993 - an immediate depreciation of about 23 per cent on full float (Table-11).

Effect of 'Floating' of the Rupee

What ever may be the exchange rate system in India - single peg, managed float, hidden partial float, partial float or full float - the Indian Rupee is depreciating since 1966 (Tables- 11 and 15).

A) *Depreciation/Devaluation*

On February 27, 1993, just before the floating

of the Indian Rupee under the modified LERMS, the official exchange rate was $ 1 = Rs 26.32, the inter-bank clearing rate Rs 33.06 and the composite rate Rs 30.32 (Table-14). After the floating of the Rupee, the open market rate on March 2, 1993 was $1 = Rs 32.00 the first day of trading after the full float; Rs 31.34 on March 26 and around Rs 31.32 in the month of April and May 1993 (Tables- 14 and 15).

Thus the 'floating' of the Rupee is nothing but one more devaluation of the Rupee *vis-a-vis* the US$. After the floating, the official exchange rate of the Rupee against the US $ got depreciated by 19 per cent. Compared to the composite rate of $ 1 = Rs 30.32 just before the floating, the April/May 1993 open market rate at $ 1 = Rs 31.32 got depreciated by about 4 per cent. There is greater depreciation of the Indian Rupee *vis-a-vis* the SDR (which is more representative of the external value of the Indian Rupee) by about 24 per cent in April 1993 over February 1993 (Table-11).

TABLE 15. RS PER US$ AT VARIOUS TIMES

Period	Rs/$
Upto June 1966	4.76
June 6 1966	7.50
* 1976-77	8.91
* 1986-87	12.78
* 1989-90	16.65
* 1990-91	17.94
* 1991-92	24.47
Feb. 1992	25.04
** March 3, 1992	25.89/29.20/27.87
** Feb. 27, 1993	26.32/33.06/30.06
*** May 1993	31.32

Notes: * Annual average of monthly averages
** Official rate/open market rate/composite rate.
*** Open market rate.
Sources: i) *Annual Reports of the RBI*, 1980-81, 1990-91, 1991-92.
ii) *The Economic Times*, (Various Issues).

The Indian Rupee would have depreciated more just after floating but for a few factors, viz., (i) inflow of 'packed' export proceeds which were held back by exporters before March 1993, due to the rumour of possible floating of the Rupee and consequent depreciation, (ii) large inflow of held back remittances of different kinds including that of NRIs, (iii) March-rush phenomenon of several foreign governments like the U.K., multilateral institutions like IBRD and ADB and even foreign companies adhering to their annual year-end targets of fiscal disbursement which increased India's foreign exchange reserves, (iv) inflow of equity funds of multinationals due to hike in their equity stakes consequent upon liberalisation, and (v) the RBI's active intervention in the foreign exchange market during the Parliament Session and its circular to the Government not to allow PSUs to demand the US $ in the market, thus reducing the demand for the US $.

However, there will be further depreciation of the Rupee in the future due to a widening fiscal deficit and at the time of loan repayment (with additional burden due to depreciation of Rupee) to IMF and others in 1994 and repatriation of Foreign Institutional Investors (FIIs) after booking profits in the stock market.

B) *Vanishing of Implicit Export Tax, Monetisation of Deficit and Inflation*

The fiscal effect of 'floating' depends on whether the government is a net buyer or a net seller of foreign exchange. For the net seller, the full float would eliminate the subsidy on foreign exchange to the private sector and would improve the deficit. For the net buyer, as is the case with India, substantial revenue from the cheap purchase of foreign exchange from exporters at the official rate could be lost.

The fiscal deficit is financed, in the regime of partial float, partly by the revenue from the government buying of the US $ with overvalued domestic currency (which is a hidden implicit tax on export earnings). Therefore, after 'floating', if real government spending is not lowered, or other compensatory tax revenue is not increased, the fiscal deficit will widen. The additional deficit will most probably be monetised due to limited availability of tax instruments, and reduction or abolition of various indirect taxes like customs and excise under the simultaneous policy of liberalisation and privatisation. This monetisation of deficit will lead to inflation. In short, the 'floating' of domestic currency takes away a tax instrument (implicit export tax) which, in the

absence of accompanying fiscal reform, must be compensated for by an 'inflation tax'.

In India, under the LERMS (introduced in March 1992), 40 per cent of the export earnings was surrendered at the official rate and 60 per cent was sold freely in the open market. Thus, if it was surrendered at the rate 'e' and sold at the rate 'b', then the marginal return on exports would be, 0.6b + 0.4e. In India, according to our calculations, the implicit tax on export earnings was around 8.17 per cent[9]. Further, the annual rate of growth (simple average of the annual percentage rate of change) of exports during 1970-71 to 1991-92 is 12.02 per cent. On this basis, we make a projection of export value of India in 1993-94 which comes to around Rs 55,266 crore (Table-10). At the rate of 8.17 per cent of implicit tax on export earnings, the loss of revenue due to a vanishing of the implicit export tax is around Rs 4,515 crore in 1993-94. Since there is no scope for new tax instruments and there is a loss of revenue of Rs 3,273 crore from import duties and Rs 2,249 crore from excise duties in the 1993-94 Union Budget, there is every possibility of a widening of the fiscal deficit due to a loss of the export tax, and inflation due to a monetisation of this deficit.

C) *Fall in Demand for Rupee and Further Depreciation*

Due to (i) depreciation of the Indian Rupee and (ii) inflation owing to monetisation of the fiscal deficit consequent upon the vanishing of revenue from the implicit export tax, the share of domestic currency (Indian Rupee) M will go down in private sector financial wealth in the equation, [Pinto, 1989],

$$W = M + bF \qquad \ldots (1)$$

where:-

b - Open market rate, i.e. Indian Rupees per the US $ in the open market rate where b > e; e being the official exchange rate (Indian Rupee per unit of US $ quoted by the RBI).
M - domestic currency (Indian Rupee)
F - foreign exchange (US$)
W - private sector wealth.

The equation (1) is based on the assumption that domestic residents hold two non-interest bearing assets in their portfolio.

It is apparent that the desired share of Indian Rupee (domestic currency) goes down as the rate of currency depreciation and domestic inflation go up[10], that is, the desired share of the Indian Rupee in private sector financial wealth has an inverse relationship with the rate of currency depreciation and domestic inflation. Thus,

$$M = f\left(\frac{\dot{b}}{b}, \quad F\right) \qquad \ldots (2)$$

Thus, due to (i) depreciation of the Rupee by about 20 per cent after the 'floating' and expectation of further depreciation, and (ii) the possible inflation owing to monetisation of the fiscal deficit due to vanishing of implicit export tax as well as the present domestic inflation rate being higher than the rate of inflation at 3 per cent in OECD countries, the share of M in equation, W = M + bF will fall.

That is, in the long run, the demand for F will rise and that for M will fall. There may be 'currency substitution' - the use of a foreign currency as a store of value as well as a medium of exchange[11]. In India, there is every possibility of 'currency substitution', particularly the use of the US $ as a store of value of black money, though not as a medium of exchange in the near future.

If the demand for the US $ in India shift in preference for the non-interest-bearing assets, there will be further depreciation of the Rupee and inflation, which will again lead to further depreciation and inflation, and so on. That is, there is a movement from an 'implicit export tax' to an 'inflation tax', leading to unequal distribution of income by affecting the poor. The burden of adjustment is thus transferred from exporters to the common man.

D) *Illegal Informal Exchange Market*

It is usually assumed that, if supported by appropriate monetary and fiscal policies, the full float may lead to the marginalisation of the illegal informal exchange market. A foreign exchange

market can be classified into two categories: (i) the formal market (official market) and (ii) the informal market (unofficial market). Further, the informal exchange market may be divided in to two sectors: (a) legal informal exchange market (open market) and (b) illegal informal exchange market (*havala* market in India). Thus, under the fixed exchange rate system, in reality, there were dual rates; under the dual exchange rate system (or LERMS), there were triple rates; and under the so-called unified exchange rate system (or modified LERMS), there are actually two rates: (i) legal informal exchange market rate (or open market rate) and (ii) illegal informal exchange market rate (or *havala* rate).

The illegal informal market (or parallel market/ curb market/ black market/ *havala* market) in foreign exchange develops in response to legal restrictions on its scale, ceiling on its price or both imposed by the authorities. But even under 'independent floating', an illegal informal exchange market operates, though marginalised, due to illegal trade consisting of (i) border smuggling and (ii) invoice fraud. In the illegal informal market, foreign exchange is sold at a price above the formal exchange rate (official exchange rate). Smuggling and fake invoices take place due to the existence of tariffs and quotas. Illegal trade creates a demand for illegal currency. The demand for illegal currency, in turn, stimulates its supply and leads to the emergence of an illegal informal exchange market. Further, the existence of high and positive premia in the illegal informal exchange market creates incentives to divert export receipts from the legal informal market to the illegal informal market.

Sources of demand and supply in the illegal informal exchange market differ from country to country and depend on the nature and the effectiveness of the authority's exchange restrictions. The supply of illegal holding of foreign exchange generally comes from (i) export smuggling, (ii) export under-invoicing, (iii) import over-invoicing, (iv) foreign tourists, (v) diversion of remittances from abroad into unofficial channels, and (vi) diversion of foreign exchange from underhand dealings to the informal market. The demand for the foreign exchange in the illegal informal exchange market arises generally for three activities: (i) legal and illegal imports, (ii) portfolio diversification and capital flight, and (iii) residents' travel abroad.

The demand and supply situation changes when the exchange rate system switches from 'partial' float to full float [Roemer, 1986]. Illegal informal exchange market generally co-exists with, rather than replacing the formal exchange market or the legal informal exchange market. Immediately after a full float, the premium - the amount by which the illegal informal market rate exceeds the formal/legal informal rate - falls [Roemer , 1986, Pp. 429-439].

In India, when the smuggling of gold was rampant, the difference between the formal (official) and the illegal informal rate (*havala* rate) was 30 per cent. The difference came down to between 12 to 15 per cent when the Government decided to allow restricted imports of gold and further narrowed down to 6 per cent. The illegal informal exchange rate/*havala* rate was reduced to US$ 1 = Rs 34.65 just after the 'floating' of the Rupee under modified LERMS. Though the supply of the US$ fell in the illegal informal exchange market, demand for the US$ also declined just after the independent floating of Indian Rupee. Some portion of the amount earned by under-invoicing exports was previously coming to this market. After the independent float, since exporters are able to sell the US$ they earn in the legal informal market (open market), under-invoicing of exports might be reduced to some extent in order to pay lower import duties in the importing countries. It may continue to avail of lower tariff. Those like tourists with travellers' cheques, who were going previously to the illegal informal market, might not have gone to this market because of the fall in the premium.

However, in may 1993, the demand for the US$ in the illegal informal exchange market had increased; the rate was ruling at $ 1 - Rs 37.50. The possible causes for this rise could be the (i) Bombay blast on account of which an underworld group under pressure may be transferring their assets out of India through illegal informal exchange market/*havala* market, and (ii) the immunity granted through the Gold Bond Scheme which led to a rise in gold smuggling.

Though, the premium in the illegal informal exchange market decreased, immediately after the independent float, it rose at a later stage. Thus, though supply of and demand for the US$ decreased in the illegal informal exchange market, the rise in the premium may be due to the fact that the rate of fall in supply of the US$ is greater than the rate of fall in demand for the US$.

Conclusion

Thus, at present, the Indian Rupee may not be termed as a 'fully' convertible currency nor is there unified exchange rate system in the true sense of the term. In reality, the foreign exchange market has switched from a triple market to a dual market. Whatever may be the foreign exchange system, the Indian Rupee is gradually and continuously depreciating since 1966. The independent 'floating' of the Rupee immediately led to a depreciation/devaluation of the Rupee. Moreover, the elimination of the implicit export tax will lead to a monetisation of the fiscal deficit and hence inflation. On the other hand, the illegal informal exchange market is not marginalised, as assumed earlier. The depreciation and inflation in turn, will lead to further devaluation, inflation, devaluation and so on. Hence, at present, the implicit export tax is being replaced by an 'inflation' tax. The burden of adjustment is thus, transferred from the exporters to the common man.

NOTES

1. The 'designation' currency, is the currency in terms of which the rupee's exchange rate is announced. 'Peg' currency (or basket currency) is that in terms of which the value of the rupee is kept fixed or within a certain range. 'Intervention' currency is that which the RBI normally buys and sells. See Joshi and Little, [1987, Pp. 371-378].

2. In 1980-81, India drew Rs 8.15 billion from the IMF Trust Fund and the Compensatory Financing Facility. In November 1981, it agreed to a very large Extended Fund Facility arrangement for SDR 5 billion (approximately Rs 5,000 crore) over three years, only SDR 3.9 billion of which had been used when India terminated the arrangement in May 1984. For a critical appraisal of this loan, see Samal, [1981].

3. For details see Verghese, [1986]. In this study, using the direct exchange rate, the author computed the models of daily TWER indices for the period 1981-86, with September 1975 as base. The TWER measures the changes in the external value of the Rupee against currencies of importance to India's trade.

4. Until December 31, 1980, the value of the SDR in terms of the US$ was determined as the sum of the dollar values based on market exchange rates of specified quantities of 16 currencies. The value of the SDR in terms of any currency other than the US$ is derived from that currency's exchange rate against the US$ and the US dollar value of the SDR. Beginning January 1, 1981, the value of the SDR in terms of the US$ has been determined as the sum of the dollar values based on market exchange rates of specified quantities of five currencies, viz., Mark, Franc, Yen, Pound Sterling and US$.

5. Technically under the floating exchange rate, there can be no devaluation but only a depreciation. It is not a devaluation because the change was not a sustained affair. So, this was only a depreciation or downward adjustment.

6. The present system is neither a unified exchange rate system (due to the presence of *havala* market) nor Indian Rupee is 'full convertible'. It is to be noted that unification of the exchange rate is one of the various steps towards 'full convertibility' of a currency.

7. Instead of 'full float', we use the term 'independent float' since the Rupee is allowed to float only in the current account, not in capital account.

8. Capital account convertibility refers to 'the absence of restrictions on capital account transactions'. For types of capital controls and its justification and potential benefits of capital account convertibility and pre-conditions for its success, see Mathiesan and Rojas-Suarez, [1993].

9. Under the LERMS (partial float system), on the basis of the rate prevailing on 27th February 1993, the total rupee earnings of an exporter from the proceeds of US$ 100 would be Rs 1,052.6 ($40 x 26.32) + Rs 1,983.6 ($60 x 33.06) Rs 3,036.40. But if he would have sold the whole proceeds in the open market, his rupee earnings would have been Rs 3,306 (i.e. $100 x 33.06). Thus, the loss to the exporter is Rs 270 (i.e., Rs 3,306 - Rs 3,036) which is a gain/revenue to the government. This means that the implicit tax on export earnings was 8.17 per cent.

10. For details about the model see [Pinto, Brian, 1989, Pp. 321-338]. The equation (1) can be written as

$$M = \lambda\left(\frac{\dot{b}}{b}\right)[M + bF]$$

where λ is the desired fraction of Rupee (domestic currency) in W and $\left(\frac{\dot{b}}{b}\right)$ is the rate at which open market rate depreciates.

11. 'Currency substitution' is pervasive in high-inflation countries. In many Latin American countries, for instance, the US$ is widely used in conducting transactions. The ratio of the US$ to domestic currency was around 50 per cent in Bolivia, Peru and Uruguay during the 1980s and has increased to almost 60 per cent in Bolivia in 1990 and 83 per cent in Uruguay in 1991. That is, there is 'dollarisation' in Latin America. For details, see Calva and Vegh, [1993, Pp. 34-37].

ABBREVIATIONS

CCFF	Compensatory and Contingency Financing Facility
COMECON	Council for Mutual Economic Assistance (also knowing as CMEA)
EHTP	Electronic Hardware Technology Parks
EOU	Export Oriented Unit

EPZ	Export Processing Zones
ESTP	Electronic Software Technology Parks
EXIM	Export-Import
FEDAI	Foreign Exchange Dealers Associations of India
FII	Foreign Institutional Investors
IBRD	International Bank for Reconstruction and Development (World Bank)
IMF	International Monetary Fund.
LERMS	Liberalised Exchange Rate Management System.
OECD	Organisation for Economic Cooperation & Development.
OGL	Open General Licence
PSU	Public Sector Unit
RBI	Reserve Bank of India
SDR	Special Drawing Rights of the IMF
TWER	Trade Weighted External Rate

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DOCUMENTATION

The purpose of this section is to make available to the readers official documents such as reports of committees, commissions, working groups, task forces, etc., appointed by various ministries, departments, and agencies of central and state governments which are not readily accessible either because they are old, or because of the usual problems of acquiring governmental publications, or because they were printed but not published, or because they were not printed and remained in mimeographed form. It will be difficult and probably not worthwhile to publish the documents entirely. We shall publish only such parts of them as we think will interest our readers. The readers are requested to send their suggestions regarding official documents or parts thereof for inclusion in this section.

In the present section we publish:

1. Extract from Report of the Taxation Enquiry Commission 1953-54, (Chairman, Sir John Mathai) Volume II, Central Commodity Taxes, Ministry of Finance Department of Economic Affairs, Government of India, New Delhi, 1955.

   Chapters I, V, VI, VII (part II), and relevant tables on Excise Duties from Appendices B, E and F.

CENTRAL COMMODITY TAXES
Extract from Report of the Taxation Enquiry Commission 1953-54, Volume II

(Ministry of Finance, Department of Economic Affairs, Government of India, New Delhi, 1955)

CHAPTER 1

A HISTORICAL REVIEW

Introductory

Commodity taxation in the sphere of the Central Government consists of import duties, export duties and excise duties. In this chapter we review the evolution of these taxes and the trends in the revenue from them since the end of World War I.

Share of Commodity Taxes in Central Tax Revenue

2. There have been large variations during the period covered by this review in the share contributed by commodity taxes to the total tax revenues of the Central Government. A substantial expansion in the share of the indirect taxes took place between 1920-21 and 1925-26 due primarily to the development of the import tariff. There was little change between 1925-26 and 1938-39 in the share of indirect taxes, though the relative importance of import duties, excise duties and the salt tax varied. An increase in the share of excise duties and of the salt tax (customs and excise) made up for a decline in the contribution of customs duties. There was a slight decline between 1925-26 and 1931-32 due to a fall in the share of customs duties as a result of the depression. The contribution of these duties to Central revenues once more almost reached the level of 1925-26 by 1938-39. By 1948-49 a substantial decline occurred in spite of the imposition of new excise duties, because of the war-time development of direct taxation, certain reductions in rates of import duty and changes in the pattern of trade, and the abolition of the duties on salt. A considerable increase has taken place since then due to an increase in the rates of import duty and in the volume of imports and also because of the significant expansion of revenue from export duties and central excise. The relevant statistics are as follows:

TABLE 1. SHARE OF CUSTOMS AND EXCISES IN CENTRAL GOVERNMENT TAX REVENUES

Year	Total gross tax revenue of the Government of India	Gross customs revenue	Gross Central excise revenue	Gross salt revenue	Total gross customs, Central excise and salt revenue	Col. 6 as percentage of Col. 2
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			In crores of Rupees			
1920-21	60.85	29.05	2.85	6.76	38.66	63.5
1925-26	72.86	45.61	3.21	6.37	55.19	75.8
1931-32	75.62	41.53	6.19	8.78	56.50	74.7
1938-39	81.87	44.51	8.72	8.41	61.64	75.3
1948-49	385.18	130.42	51.66	..	182.08	47.3
1953-54	420.33	161.33	94.00	..	255.33	60.8

3. We now proceed to review the changes in yield which have taken place during this period in each of the groups constituting Central commodity taxes, *viz.*, import duties, export duties and excise duties, describing briefly the factors responsible for these changes.

Evolution of Import Tariff

4. At the end of World War I, the general rate of import duty was $7\frac{1}{2}$ per cent with machinery and iron and steel paying duty at $2\frac{1}{2}$ per cent, sugar at 10 per cent and motor spirit at 6 annas a gallon. Financial needs led to the raising of the general rate to 11 per cent in 1921 and again to 15 per cent in 1922. In addition, matches and luxury items were subjected to higher rates of duty. Also, in 1922, a new duty of 5 per cent was levied on cotton

yarn. Iron and steel and railway materials (till then assessable at $2\frac{1}{2}$ per cent) were subjected to a duty of 10 per cent.

The above rates remained practically unchanged up to 1931, except, of course, those which were altered for protective purposes. During the period 1922 to 1931, however, duties on sugar, unmanufactured tobacco, cotton piece-goods and kerosene were raised and the duty on silver was reintroduced.

5. In 1931, the economic depression caused a heavy deficit in the Central finances and additional taxation was introduced under the Indian Finance Act, 1931, and the Indian Finance (Supplementary and Extending) Act, 1931. The general rate of the import tariff was put up to 25 per cent, and varying rates of surcharges resulted in the upward revision of duties on numerous individual items like liquors, silver, sugar, spices, cotton piece-goods, tobacco (including cigars and cigarettes), fuel and lubricating oils, motor cars, motor cycles, art silk yarn and thread, art silk piece goods and art silk mixtures. As a consequence of these changes machinery, coal-tar dyes, etc., which were hitherto admitted free, were subjected to a duty of 10 per cent and a duty of half an anna per lb. was imposed on raw cotton. The changes introduced by the two Finance Acts of 1931 were incorporated in the tariff from 1st January 1935 by the Indian Tariff Act, 1934.

6. In the years immediately preceding World War II and shortly thereafter, in order to meet budgetary requirements, the rates of duty on several individual items were raised, notably on raw cotton (1939) and art silk yarn and thread (1941). The former had a duty of half an anna per lb. imposed on it in 1931. In 1939 this was doubled; and by the Cotton Fund Ordinance, 1942, this was doubled again, but one anna went into the Fund created under the provisions of the Ordinance. (In 1946, however, the Fund was abolished leaving the revenue duty itself at 2 annas per lb.).

7. An overall surcharge of one-fifth on all duties was imposed by the Finance Act, 1942; this was continued from year to year until 1951. At the same time, certain permanent adjustments in rates of duty were made in respect of which no surcharge was applied; notably, the duty (both customs and excise) on motor spirit was raised from 12 annas to 15 annas per gallon. The surcharge was not applied to industrial plant and machinery which, therefore, remained dutiable at 10 per cent *ad valorem*. In 1944, the rate of surcharge on certain items (potable spirits and cigars, cigarettes and tobacco) was increased from one-fifth to one-half. In the following year, the duties on all tobacco items were refixed so as to correspond with the enhanced rates of Central excise duty on indigenous tobacco which were introduced at the same time. In 1946, certain duties were readjusted and the duty on kerosene was substantially reduced from 4 annas 6 pice to 3 annas per gallon. The *ad valorem* duties on betelnuts and cinematograph films were replaced by specific duties. The duty on silver was enhanced, while gold was for the first time subjected to a duty, the rate being Rs 25 per tola (this was later reduced by one-half by notification).

8. Certain important changes in the tariff took place in 1948. Firstly, the commitments entered into by India under GATT were given effect to in that year. Secondly, the duty on industrial plant and machinery was reduced from 10 per cent to 5 per cent. The duties on a number of raw materials for industries were either removed or reduced. By an Ordinance promulgated in November 1948, the rates on a number of luxury articles were increased substantially, e.g., on articles of gold and silver, fine and superfine varieties of textiles, fire-works, toilet requisites, motor cars, crockery, cutlery, tobacco, alcoholic liquors, etc.

9. In 1950, the rates of duty on parts and accessories of motor vehicles other than motor cycles were rationalised as a measure of anticipatory protection.

10. The next series of important changes came about under the Finance Act, 1951, after the outbreak of the Korean War. The general surcharge of one-fifth on import duties was enhanced to one-fourth. The rate of surcharge on liquors which was fixed at 100 per cent under the 1948 Ordinance was enhanced still further to 155 per cent. The finer varieties of textiles were subjected to a surcharge of 55 per cent. Articles which were

hitherto immune from the surcharge were subjected to a surcharge of 5 per cent. The specific rates of duty on mineral oils other than kerosene and motor spirit were replaced by alternative rates of duties, as it was feared that the specific rates were no longer keeping pace with the rise in import prices.

11. A substantial increase in rates of duty on certain consumer goods was a notable feature of the Finance Act, 1953. In certain cases, substantial reliefs were granted in the duties on milk foods for infants and invalids, patent foods for infants and invalids, penicillin in bulk, antibiotics, sulpha drugs, scientific and surgical instruments and art works.

12. Under the Finance Act, 1954, the duty on betelnuts has been further enhanced, the preference in favour of U.K. in respect of motor cars has been abolished and anti-malarial drugs have, for the first time, been subjected to a duty, the rate being 20 per cent *ad valorem*. In addition, duties on a number of items have been enhanced and import quotas liberalised. Simultaneously, action has been taken under section 23 of the Sea Customs Act, exempting from duty raw cotton, iron and steel plates and sheets, and railway track materials. The policy of liberalising quotas with enhanced duties has been carried still further through the introduction of another series of changes in September, 1954.

Contribution of Import Duties to Central Tax Revenue

13. The following table sets out the revenue from import duties as a percentage of the total tax revenue of the Government of India and also as a percentage of the value of imports:

TABLE 2. REVENUE FROM IMPORT DUTIES AS PERCENTAGE OF TOTAL TAX REVENUE AND VALUE OF IMPORTS

Year	Gross revenue from import duties	Gross revenue from import duties as a percentage of total tax revenue of the Government of India	Gross revenue from import duties as a percentage of value of imports
	In crores of Rupees		
1920-21	23.08	38.3	7.3
1925-26	39.32	54.3	17.5
1931-32	36.08	48.1	30.8
1938-39	39.80	48.9	25.6
1948-49	97.98	25.4	17.6
1953-54	120.29	28.6	21.8

The revenue from import duties as a percentage of the value of imports will be referred to as the incidence of import duties. This percentage is relevant as a measure of the tax burden on imported goods. It may vary not merely as a result of changes in tariff rates but also because of variations in the composition of imports.

14. As stated earlier, the period from 1920-21 to 1925-26 was marked by the development of the import tariff. Revenue duties were raised and protection was granted on a large scale. As a result, the incidence of import duties increased from 7 per cent to 17 per cent and the contribution of import duties to Central tax revenues went up from 38 per cent to 54 per cent.

15. The process was carried further up to 1931-32 and as a result of this factor and of the increased burden of specific duties due to the fall in prices, the incidence of import duties increased to 31 per cent in 1931-32. Owing, however, to a fall in the value of imports as a result of the depression, the contribution of import duties to Central tax revenue declined slightly to 48 per cent.

16. There were no important tariff changes till 1938-39, but changes in the composition of imports were of importance during this period reducing the incidence of import duties to 26 per cent in 1938-39 from 31 per cent in 1931-32. A contributory factor was the fall in the burden of the specific duties due to the rise in prices. The effect of protection was beginning to be felt and low duty items like machinery and raw cotton were increasing in importance. However, as the

value of imports was on the increase, the relative contribution of import duties to Central tax revenues remained steady.

17. By 1948-49, the incidence of import duties had decreased to 18 per cent from 26 per cent in 1938-39 and the contribution of import duties to Central tax revenues was reduced from 49 per cent to 25 per cent between the two years. This was due both to rate changes made with a view to promoting industrialisation, which have been referred to earlier, and to changes in the composition of imports. The rate increases for luxury items could not make up for reductions in duty on commodities which formed a steadily greater part of India's imports. Also, the scope for increases in rates of duty on consumer goods items was limited by obligations under GATT.

18. After 1948-49, the further surcharge of 5 per cent and the increases in rates of duty for a variety of items, especially consumer goods, raised the incidence of import duties to 22 per cent in 1953-54 and the contribution of import duties to Central tax revenue showed a slight improvement, being 29 per cent in 1953-54 as compared to 25 per cent in 1948-49.

19. Changes in the composition of import trade have been of importance in relation to the yield from import duties. Since the War, large food grain imports, which are free of duty, have tended to reduce the incidence of import duties. While in 1938-39 only 8.8 per cent of the value of imports was accounted for by food grains, the corresponding percentages for 1948-49 and 1953-54 were 18.2 and 13.1. More significant has been a steady increase since World War I in the importance of industrial requirements as opposed to finished goods in India's import trade. Industrial requirements constitute a large variety of items such as raw cotton, motor spirit (excluding a small portion used by motor cars), machinery, building and engineering materials, and tools and implements. Imports of industrial requirements as a percentage of the total value of imports have risen from 41 in 1920-21 to 50 in 1931-32, 54 in 1938-39 and 68 in 1953-54. As the level of duties on industrial requirements must necessarily be lower than the level of duties on finished goods, the increased share of industrial requirements in the import trade has meant a reduction in the total import duty revenue as a percentage of value of imports obtained with any given import tariff. The increase in imports of machinery and raw cotton, which have always been low-duty items, is specially significant. Their share in imports has gone up steadily from 7.4 per cent in 1925-26 to 24.5 per cent in 1953-54.

20. The revenue from consumer goods has been affected not merely by rate changes but also by changes in composition within the group. Thus the increased importance of sugar in 1930-31 in imports resulted in one-third of the total import duty revenue being derived from that article. Again, between 1931-32 and 1938-39, there was a shift within the consumer goods group away from items bearing high rates of duty such as spirits and liquors and manufactured tobacco towards general utility goods carrying moderate rates of duty like domestic appliances, drugs, medicines, cycles, etc.

Export Duty

21. The revenue from export duties was fairly constant in the pre-war period and their contribution to total tax revenue, therefore, declined somewhat. After the War export duties acquired a new importance. The role of export duties is discussed in detail in another chapter.

Salt Duty

22. Salt constituted an important source of revenue until the second World War and the revenue from it was realised mainly through an excise duty on indigenous salt and partly through customs duty on imports. Its share in total Central Government revenues remained fairly constant at about one-tenth. With the considerable development of direct taxation and the extension of excises during and after the War, its share declined and in the year before the duty was abolished (*viz.*, in 1946-47) it was only about 3 per cent.

The rate of duty remained at Rs 1-4-0 per maund from 1917 to 1931, except for the single year

1923-24 when it was double. From 1931 till the abolition of the duty in 1947, the rate of duty was Rs 1-9-0 per maund.

Evolution of Central Excises

23. Apart from the salt duty, the first excise duty levied by the Government of India was in 1894 when cotton yarn of counts above twenties was subjected to an excise duty equivalent to the import duty. In 1896, this was changed into an excise duty on mill cloth. These excises were imposed as a result of pressure from U.K. and they were meant to improve the competitive position of Lancashire cloth in the Indian market. Consequently, public opinion was strongly opposed to these excises and the Government of India supported the public demand for the removal of these duties. The first Fiscal Commission (1921-21) reviewed the whole position and recommended the abolition of the excise duty on cloth. It also recommended that the rate of import duty necessary for the protection of the cotton textile industry should be considered by a Tariff Board, and that after the appropriate rate was fixed, the Central legislature should decide whether there was a case for retention of an excise duty. If continuance of the excise duty was decided upon, the import duty fixed with reference to the necessary level of protection, should be increased by the amount of the excise duty. The excise duty on cloth was abolished in 1926.

24. Of the present excises, the earliest was the levy on motor spirit introduced in 1917. The primary purpose of this excise was to bring down the consumption of petrol in India and to conserve the supply for war requirements. The excise duty on this article was retained as a permanent feature as it proved to be a good source of revenue.

25. The next item to be placed on the Central excise tariff was kerosene, which was subjected to duty in 1922.

26. The third article to be brought into the Central excise tariff was silver on which a duty was imposed in 1930. After the separation of Burma in 1937, no revenue has been realised from this article as the Indian production is negligible.

27. The year 1934 was a landmark in the development of Central excise because it was in that year that duties were imposed on sugar, matches and steel ingots. There were industries that had been established as a result of protection and their development had by 1934 reached a stage at which revenue could once more be derived through excise duties to replace the revenue from import duties that had been foregone. The imposition of a surcharge of Rs 1-13-0 per cwt. on the protective duty of Rs 7-4-0 in 1931 had led to a rapid expansion of sugar factories and the making of large profits by the manufacturers. An excise duty was therefore imposed, minimum prices being also fixed for sugar-cane in order to ensure that cane-growers derived some benefit from the grant of protection to the sugar manufacturing industry.

28. The excise duty on matches was also introduced in view of the expansion of the domestic industry.

29. The excise duty on mechanical lighters was introduced at the same time as the duty on matches. There was at that time no production of mechanical lighters in India. It was, however, expected that the revenue from matches would be affected by the establishment of a mechanical lighters industry or by the import of lighters; an excise duty was, therefore, imposed and the import duty enhanced by an equivalent amount.

30. The excise duty on steel ingots was introduced subsequently in 1934. The recommendations of the Tariff Board regarding the protection of the steel industry involved a very considerable reduction in the level of import duties with a resultant decline in customs revenue. It was, therefore, found necessary to impose an excise duty on the production of steel ingots in India with a countervailing customs duty.

31. During the second World War, Government explored various methods of increasing revenue and in 1941 an excise duty was imposed on tyres. This industry was also an example of loss of customs revenue through the replacement of imports by home production. In 1943, vegetable product was also brought under excise. That year, however, was more significant for the introduction of the excise duty on tobacco.

32. The excise duty on tobacco marked a departure in the Central excise system because so far excises had been levied only on the products

of organised industries. The exigencies of war finance made it necessary to raise revenue from tobacco and an elaborate scheme of taxation was consequently introduced in 1943. This subject is dealt with in a separate chapter.

33. In the following year (1944), coffee, tea and betelnuts were brought into the excise tariff as further sources of revenue. The duty on betelnuts was abolished in 1948, primarily because of administrative difficulties and also because a considerable portion of the growing areas was lost on account of partition.

34. The next major addition to the Central excise tariff was in 1949 when it was extended to mill-made cloth. In justification, the Finance Minister stated that it was necessary to replace the heavy loss in revenue resulting from the abolition of the salt duty, and that the proposed duty would not affect the mill industry and at the same time would help the handloom industry.

35. In 1954, duties were imposed on art silk, cement, soap and footwear.

36. The principles underlying the extension of excises from time to time are that indigenous industries which have developed under a protective tariff wall should be called upon to replace the loss of customs revenue on imports, and that the country's tax structure can be made stable only by broadbasing the excises.

Contribution of Excise Duties to Central Tax Revenue

37. The following table sets out the revenue from Central excise duties in certain years and the proportion of tax revenue of the Government of India derived from these duties:

TABLE 3. REVENUE FROM EXCISE DUTIES AS PERCENTAGE OF TOTAL TAX REVENUE

Year	Gross Central excise revenue	Total gross tax revenue of the Government of India	Excise revenue as percentage of total tax revenue
	In crores of Rupees		
1920-21	2.85	60.85	4.7
1925-26	3.21	72.86	4.4
1931-32	6.19	75.62	8.8
1938-39	8.72	81.37	10.7
1948-49	51.66	385.18	13.4
1953-54	94.00	420.33	22.4

Factors Affecting Revenue from Excise Duties

38. Variations in the revenue from excises can be explained in terms of three factors - changes in rates, increase in quantities consumed and extension of scope of taxation to cover new commodities. Of these three factors, it is the increase in coverage which has been most important. The increase in consumption has also been significant while the part played by changes in rates of duty is only a minor one.

39. Excise duty rates are mostly specific and were not adjusted from time to time in proportion to price changes. The effect on revenue of changes in rates of duty between two years can be estimated by calculating the yield in one year on the assumption that (a) the commodities taxed, *viz.*, the coverage of duties and (b) the output of various commodities which are dutiable remain the same as in the other year. Thus, in respect of the commodities subject to excise duty in 1953-54, which were also being taxed in 1938-39, the yield was Rs 27 crores in 1953-54. Applying the rates of duty in force in 1938-39 to the quantities taxed in 1953-54, the yield would be Rs 12 crores. Changes in rates alone thus account for an increase in revenue of the order of 125 per cent between 1938-39 and 1953-54.

40. When account is taken of the rise in the price level over the period, it will be seen that the rise in rates of duty has been very moderate. Between 1938-39 and 1953-54, the price level increased four-fold while the increase in revenue due to rate increases was only 125 per cent; the rates of duty as percentages of the prices of articles taxed have thus declined substantially with a consequent

reduction of the average burden of taxation on articles subject to duty between 1938-39 and 1953-54.

41. As remarked above, the extension of coverage was more significant than increase in rates of duty from the revenue standpoint. Thus, in 1953-54, only 29 per cent of the revenue from excise duties was raised from articles which were subject to duty also in 1938-39 and 76 per cent from articles which were taxed in 1948-49.

42. The increase in quantities consumed of articles subject to excise duties has also been a significant factor. In order to obtain a measure of the importance of the increase in consumption, the effect of changes in rates of duty and of extension of coverage has to be eliminated. The increase in revenue as a result purely of the rise in consumption between 1938-39 and 1948-49 is roughly 25 per cent. Between 1948-49 and 1953-54, there was a further increase of 27 per cent.

43. The increased importance of excise duties is, therefore, accounted for mainly by extensions of coverage and natural increases in consumption. The increases in specific rates of duty have been very moderate in relation to price increases.

44. It is of interest to examine the extent to which up to 1953-54 the expansion of excises has made up for the loss of revenue from import duties. An overall comparison of the extent to which revenue from excise duties has replaced import duty revenue is difficult. It can, however, be said that the coverage of excise duties has gone a considerable way towards meeting the revenue lost by the reduction of imports consequent on protection. In 1931-32 protective import duties yielded Rs 15.2 crores out of a total import duty revenue of Rs 36 crores. No less than Rs 13.4 crores out of the Rs 15.2 crores yielded by protective duties was collected on items subjected later to excise duties.

45. These commodities are listed below with the comparative incidence of customs and excise duties:

TABLE 4. COMPARATIVE INCIDENCE OF CUSTOMS AND EXCISE DUTIES

Commodity	Import duty in 1925-26 as a percentage of value	Excise duty at present as a percentage of value
Sugar	41	10
Iron and Steel	20	1
Cotton textiles	11	6 to 17
Matches	133	100

These figures indicate that excise duties have been imposed at comparatively moderate levels when domestic production has replaced imports.

46. There would appear to be scope for further utilisation of excise duties in order to maintain revenue from commodity taxation. We suggest in another chapter the directions in which the scope of Central excise duties could be extended.

CHAPTER V

EXCISE DUTY ON TOBACCO

Importance of Tobacco

The area under tobacco cultivation has recorded a rapid rise in recent years. It rose from 5.7 lakh acres in 1946-47 to 10.2 lakh acres in 1952-53 and India is now the third largest producer of tobacco in the world ranking next after U.S.A. and China.

Tobacco occupies an important place in Indian economy although the area under cultivation constitutes only 0.3 per cent of the total area under agriculture and the value of the output of tobacco represents only 1.5 per cent of the total value of crops. According to the Final Report of the National Income Committee, the value of the output of tobacco was Rs 71 crores in 1950-51. Tobacco thus was fourth in order of importance among cash crops, ranking after sugarcane, groundnuts, and cotton. Tobacco is also an important item of export, being eighth in order of value.

Zones of Cultivation

2. Tobacco is cultivated in all parts of India, but there are only four zones of concentrated cultivation, *viz.*, Guntur (Andhra), Charotar (Gujarat), Nipani (Bombay) and Tirhut (North Bihar). Of all the States, Andhra has the largest area under

tobacco cultivation representing 35 per cent of all-India acreage and accounting for 95 per cent of the total production of Virginia tobacco.

Pattern of Consumption and Organisation of Production

3. Tobacco is consumed in numerous forms, the more important being cigarettes, *biris*, snuff, cigars and cheroots, *hookah* and chewing. Cigarettes are made in organised factories using mechanised processes. There are in all nineteen factories situated at Bangalore, Bombay, Calcutta, Hyderabad, Monghyr and Saharanpur.

4. As regards *biris*, there is practically no part of India where they are not manufactured to some extent, but Madhya Pradesh, Bombay, Madras and West Bengal account for more than three-fourths of the total production (77 per cent). Madhya Pradesh is the largest producing State with 25 per cent of the output, Bombay being a close second with 21 per cent. The *biri* industry is not organised on factory lines. There are numerous small-scale producers of *biris* who employ their own labour and the labour of the members of their household for rolling *biris*. *Biris* are not manufactured by large-scale manufacturers by assembling workers under a factory roof. It is the domestic system of manufacture that is largely in vogue. The raw materials, *viz.*, tobacco, *tendu* leaf, etc., are issued to out-workers living scattered about in a town or city or in villages and they manufacture the *biris* and deliver them at the factory. Recently, mechanical processes have begun to be employed in the manufacture of biris.

5. The manufacture of snuff is concentrated in Madras city and Mangalore in South India and parts of Bombay State. Except for a few large scale producers who use machinery, the production is organised only on cottage scale.

6. The manufacture of cigars and cheroots is confined to a few places in Madras and Andhra States. This is also essentially a cottage industry. A special feature of the consumption of cheroots is that the bulk of the consumption is in Andhra State where it is in the form of cheroots rolled by the consumers themselves. Thus, out of a total quantity of 39 million lbs. cleared for duty under this class, only 9 million lbs. pass into commercial manufacture.

7. The manufacture and consumption of *hookah* tobacco is almost entirely confined to North India - Punjab, Delhi, U.P., Bihar, West Bengal, Assam and parts of Rajputana and Central India. This is also essentially a cottage industry.

8. The main areas of consumption of chewing tobacco are in South India where it is mostly used in the raw form without any process of manufacture. It is estimated that more than four-fifths of the total consumption of chewing tobacco in India is in the raw form. Uttar Pradesh and Delhi and to a smaller extent Hyderabad are areas where there is manufacture of chewing tobacco called *zarda* on a large scale.

Trends in Consumption.

9. Below are given figures regarding the consumption of tobacco as indicated by the quantities cleared for the central excise duty under various categories.

TABLE 1. CLEARANCE OF TOBACCO BY TARIFF CLASSES

(Million lbs.)

	43-44	44-45	45-46	46-47	47-48	48-49	49-50	50-51	51-52	52-53	53-54
Cigarettes: Flue-cured	24.5	25.3	30.4	29.1	27.4	21.9	25.0	28.2	24.0	21.3	24.4
Non-flue cured	11.2	14.0	19.0	14.9	11.1	9.0	11.4	20.4	22.1	21.6	21.8
Total cigarettes	35.7	39.3	49.4	44.0	38.5	30.9	36.4	48.6	46.1	42.9	46.2
Biris	54.5	61.3	62.9	66.7	76.5	93.9	90.4	105.9	116.7	121.3	117.7
Snuff.	3.1	3.6	6.0	7.8	4.3	4.4	5.6	5.6	8.8	7.8	8.9
Cigars and Cheroots	27.4	37.6	46.0	49.6	48.2	51.5	49.1	52.2	43.7	41.4	38.8
Hookah	181.3	142.6	178.7	174.2	93.4	107.3	111.2	120.9	118.8	126.7	119.1
Chewing	88.3	93.0	127.1	117.9	116.4	127.3	127.6	129.3	114.0	111.2	111.0
Total (other than cigarettes)	354.6	338.1	420.7	416.2	338.8	384.4	383.9	413.9	402.0	408.4	395.5
Grand Total	390.3	377.4	470.1	460.2	377.3	415.3	420.3	462.5	448.1	451.3	441.7

Note: The figures up to 1946-47 relate to undivided India. The figures pertaining to Part B States are included only from 1950-51.

10. The manufacture of cigarettes and *biris* has recorded a rapid rise in recent years. According to the *Report on the Marketing of Tobacco in India and Burma* (1938), the annual production of cigarettes was 7,500 million and the quantity of tobacco used in the manufacture of *biris* was 70 million lbs.

These figures have subsequently been far exceeded despite the partition of the country and the consequent partial loss of large markets. In 1950-51, the production of cigarettes totalled 23,364 million, and although since then there has been a decline, the figure for 1953-54 stood at 19,849 million. The *biri* industry has also recorded a substantial rise and the quantity of tobacco used for the manufacture of *biris* was 121 million lbs. in 1952-53 and 118 million lbs. in 1953-54 as compared to 55 million lbs. in 1943-44.

Taxation Enquiry Committee's Findings

11. The Taxation Enquiry Committee (1924-25) observed that "the absence of any internal taxation on tobacco is a feature which distinguishes the fiscal system of India from that of almost every other civilised country in the world". The Committee considered that the use of tobacco in India was even more widespread than in many of the countries which subjected it to taxation and expressed the view that there was a strong case for the taxation of tobacco in India.

12. The possibility of taxation of tobacco was examined on numerous occasions, but the administrative difficulties of evolving a suitable system prevented the imposition of the tax. The Taxation Enquiry Committee considered that the possible methods by which tobacco could be taxed in India were the following:

(a) a Government monopoly,
(b) an acreage fee,
(c) a regular excise system, and
(d) a system of licences.

13. A Government monopoly was ruled out as too vast an undertaking to be considered. A system of acreage fee was considered to be administratively difficult because of scattered cultivation and large variations in yield. The Committee, therefore, suggested a combination of a regular excise system for cigarettes, smoking tobacco and cigars manufactured in organised factories and a system of licensing for the taxation of other forms of tobacco.

Constitutional Position

14. Prior to the enactment of the Government of India Act, 1935, the taxation of tobacco was not a central subject. The provinces (no States) were, therefore, "encouraged to derive what revenue they could from the control of taxation of retail vend and generally to develop this field of taxation in the hope that experience of the various schemes suggested might lead to the evolution of a practicable general excise system." (Budget Speech, 1943). Under the Government of India Act, 1935, however, the power to levy a tobacco excise was allocated to the Central Government (*vide* Item 45 of List I - Federal Legislative List - Seventh Schedule).

Imposition of the Excise in 1943

15. The compelling need for additional revenue during the War led to the imposition of an excise duty on tobacco with effect from 1st April 1943. The levy was imposed under the Tobacco (Excise Duty) Act, 1943 which was subsequently merged in the consolidated Central Excises and Salt Act, 1944.

Evolution of the Tariff and the Effect on Revenue. Pattern of the Tariff

16. The rates of duty were designed on a progressive scale. Graduated rates were fixed for flue-cured tobacco used in the manufacture of cigarettes depending on the imported tobacco content of the blends. They ranged from eight annas per lb. to Rs 1-12-0 per lb. For non-flue-cured tobacco used in the manufacture of cigarettes the rate of duty was fixed at six annas per lb. and the same rate was also fixed for tobacco used for *biris* and snuff. A lower rate of two annas

pr lb. was fixed for cigar and cheroot and a still lower rate of one anna per lb. was fixed for *hookah* and chewing tobacco and stalks. In addition to the duty on the tobacco used in the manufacture of cigars and cheroots, a graduated duty on the basis of value slabs was imposed on the higher grades of the manufactured cigars and cheroots.

The growers are permitted to retain without payment of duty tobacco required up to specified limits for their personal consumption (including the requirements of the members of their household).

Tobacco used for agricultural purposes is exempt from duty. Exports are also duty-free.

The revenue realised from tobacco in the first year of the excise, *viz.*, 1943-44 was Rs 9.65 crores.

Gradual increase in rates

17. With the building up of the organisation necessary for the operation of the tobacco excise, the rates of duty were stepped up in 1944. The rates of duty on flue-cured tobacco used for the manufacture of cigarettes were doubled, ranging from Rs 1-0-0 to Rs 3-8-0 per lb., the rates for non-flue-cured tobacco used for cigarettes as well as *biri* and snuff tobacco were raised by 50 per cent to nine annas per lb. and the rates for cigar and cheroot, *hookah* and chewing tobacco were raised to a uniform level of three annas per lb. As a result of these changes, the revenue from tobacco rose to Rs 17.28 crores in 1944-45.

18. In 1945, the rates of duty on flue-cured tobacco used in the manufacture of cigarettes in admixture with imported tobacco were graduated further and rates of Rs 7-8-0 and Rs 5-0-0 per lb., were imposed on the classes of cigarettes containing over 60 per cent and between 40 per cent and 60 per cent respectively, of imported tobacco in the blends. These changes raised the revenue to Rs 20.82 crores in 1945-46.

19. The next changes made in the tobacco tariff were in 1948 when an excise duty was imposed on cigarettes and the rates of duty on other tobacco were raised. The tariff for cigarettes followed the same pattern as the tariff for cigars and cheroots, *viz.*, value slabs for fixation of rates, but there was no exemption of any class of cigarettes unlike the exemption of the cheaper classes of cigars and cheroots. The rates of duty on *biri* and snuff tobacco, and cigar and cheroot, *hookah* and chewing tobacco were raised by one-third to twelve annas and four annas respectively. The effect of these changes was to raise the revenue to Rs 25.30 crores in 1948-49.

20. In 1951, the rate of duty on *biri* tobacco was raised to fourteen annas per lb., and the rate for cigar and cheroot, *hookah* and chewing tobacco was raised to six annas per lb. Snuff tobacco was also classified with the latter and, consequently, the rate of duty for it was reduced from twelve annas to six annas per lb. Surcharges at rates of one pice and two pice per ten cigarettes were also imposed on cigarettes with retail price for ten cigarettes between two annas and five annas six pice, and exceeding five annas six pice respectively.

These changes led to a rise in the revenue from tobacco excise to Rs 35.39 crores in 1951-52. As a result of fluctuations in production and consumption, there was a slight decline in 1952-53 to Rs 33.94 crores and in 1953-54 to Rs 33.23 crores.

Temporary Relief in 1954

21. With effect from 10th April 1954, the rate of duty on all non-flue-cured tobacco warehoused or deposited in curers' bonded storerooms prior to 1st January 1954, has been reduced by 25 per cent as a measure of relief to the trade which was faced with the problem of accumulated stocks. The rate of duty on certain specified inferior grades of flue-cured tobacco used for cigarettes has also been reduced from Re 1 per lb. to nine annas per lb. subject to certain conditions.

22. Under the Central Excises and Salt (Amendment) Ordinance, 1954, which came into force on 29th July 1954, a duty of Rs 3 per 1,000 has been imposed on *biris* in the manufacture of which any process is conducted with the aid of machines, operated with or without the aid of power. The purpose of this duty is not to raise revenue but to discourage mechanisation and to sustain the present level of employment in the industry.

Working of the Tariff

23. In a system of tariff classification which involves gradation of the commodity into dif-

ferent varieties according to their utility, it is a difficult task to ensure equity and compliance to the satisfaction of all concerned. The history of the tobacco tariff is an excellent example of the difficulties involved. Until 1951, the criterion employed was 'intended use'- the intention was to be expressed by the tax-payer in the form of a declaration before clearance for duty. It was in the nature of self-assessment with safeguards by Government to ensure that the declaration made was honoured. The preventive measures extended even to the scrutiny of the accounts of the *biri* manufacturers although *biri* was not subject to excise duty on its manufacture. The system was criticised on the ground that it involved the follow up of duty-paid tobacco and led to the harassment of the honest tax-payer. The system lent itself to exploitation by the dishonest tax-payer as preventive machinery could ensure compliance with declaration only at a disproportionate cost.

24. The system was discarded for a short period in 1951 in favour of a flat rate of duty on all varieties of tobacco other than those used for cigarettes, with a further duty on manufactured *biris* and snuff. As a result of discussions in the Lok Sabha and the Select Committee, the measure was withdrawn on the ground that it would be a source of hardship to a large section of the community if *biri*, snuff, chewing tobacco (sic), etc., were to be taxed both in the manufactured form and also unmanufactured form. Government, while withdrawing this scheme, were able to secure for the application of the various tariff rates the substitution of the criterion of 'intended use' by that of 'capable of being used' for *biris*.

25. The new criterion reverses the roles of the tax-payer and the Excise Department from what obtained under the old system. The system of self-assessment with safeguards by Government for revenues has given way to assessment at the discretion of the Central Excise Department. The new system has obviously not been taken to kindly by the trade, judged from the large number of representations received by us. The main points of criticism are that similar varieties are being taxed differently in different areas, that classification of varieties made as to their utility is faulty, and that frequent revisions are being made in the classification involving uncertainty and risk to business.

26. The only alternative arrangement that the trade interests could suggest was the one that was abandoned in 1951. The sector of the trade interested in the *biri* industry showed preference for a flat rate of duty on unmanufactured tobacco but without a duty on the manufacture of *biris*. We have, however, carefully examined the working during the past three years of the 'capability' criterion. The procedure followed for implementation of the criterion is that the Collectors of Central Excise have been authorised to classify varieties of tobacco for the purposes of assessment based on their relative use for the manufacture of *biris* within different zones in their jurisdictions. These varieties may be either in minor use or negligible use or not used at all for *biri* manufacture in such zones. Those not covered by the above three classifications are varieties which are regarded as in major use for *biri* manufacture. The test applied for classifying varieties into these various degrees of uses for *biri* manufacture are:-

(i) major use - 25 pr cent or more of the total quantity of the variety used in the particular zone should be for *biri* manufacture.
(ii) minor use - 5-25 per cent of the total quantity of the variety used in the particular zone should be for *biri* manufacture.
(iii) negligible use - less than 5 per cent of the total quantity of the variety used in the particular zone should be for *biri* manufacture.

The local assessment within the zone, of any given variety of tobacco is as follows:

Classification of tobacco	*Rate of duty charged*
Not used for manufacture of *biris*.	Charged at six annas per lb. without any restriction.
Used to a negligible extent for the manufacture of *biris* in specified zones.	Charged at six annas per lb. except when moved outside the specified zones.
Used to a minor extent in the manufacture of *biris* in the specified zones.	Charged at six annas per lb. in the specified zones after denaturing; otherwise charged at fourteen annas per lb.
Varieties of which the major use is for *biri* manufacture	Charged at fourteen annas per lb.

27. The figures for the clearance of tobacco for various purposes for the two years preceding the adoption of the present criterion and the three years of its implementation are compared below:

TABLE 2. CLEARANCE OF TOBACCO FOR BIRI AND OTHER PURPOSES

Quantity assessed at the biri rate			
'Intention' criterion		'Capability' criterion	
Year	Quantity (million lbs.)	Year	Quantity (million lbs.)
1949-50	90	1951-52	117
1950-51	106	1952-53	121
		1953-54	118
Quantity assessed for cigars, cheroots, snuff, chewing and hookah			
1949-50	294	1951-52	285
1950-51	308	1952-53	287
		1953-54	278

There has been a fall of 20-30 million lbs. in the clearance of lower rated tobacco and an increase of about 11-15 million lbs. in the clearance of higher rated tobacco. It is possible to argue from these figures that the new criterion has had the effect of some lower rated tobacco being charged at a higher rate. It is, however, doubtful if a positive conclusion of this nature could be drawn from these figures. There has been a progressive increase in the clearance of tobacco for *biris* since the duty came into force. The above figures also show an increase of nearly sixteen million lbs. as between 1949-50 and 1950-51 which is largely attributable to the integration of the former Indian States. The increase in the clearance of tobacco for *biris* after the enforcement of the 'capability' criterion can perhaps be partly attributed to the natural increase that would have taken place in any case especially as the requisite administrative arrangements in Part B States improved. It is possible that a part of the increase might have resulted from the adoption of the new criterion. The percentage of increase is, however, so small that no definite conclusions can be drawn but we can appreciate that there would have been initial difficulties in the implementation of a totally new procedure and it might have led to hardship in some cases.

28. A tariff classification that is based on the ultimate utilisation of the different varieties of the commodity for particular purposes, can be equitable only if the payment of duty is related to their 'actual' use, which is almost impossible to enforce, rather than to their 'intended' or 'potential' use. In the latter event, there is room for the exercise of personal discretion in the implementation of the criterion. Out of the two, it would seem that the 'capability' criterion has greater chance of being applied objectively as far as practicable, provided the initial classification is made scientifically, subsequent changes are made after careful investigation at a level which will inspire public confidence and a procedure is devised for the prompt disposal of the representations made. As there is no workable alternative except charging a flat rate of duty, it appears to us necessary that all possible steps should be taken, now that the working of the criterion has been known for three years, to carry out an exhaustive review of the procedure adopted. We recommend the appointment of an expert committee which should include a marketing expert in tobacco and a representative of the trade to go into the question fully.

Flat Rate of Duty

29. The principal ground urged for a flat rate is the ease with which it can be administered. On the other hand, assuming that it is not possible to sacrifice any revenue in the process, the rate will have to be fixed, on present trends, at about nine annas per lb. It will mean an additional burden of 50 per cent on the lower rated varieties raising the percentage of the duty to value from nearly 66 to 100. The issue, therefore, is whether the differential rates for unmanufactured tobacco serve any economic purpose. It is argued that the justification for imposing a higher rate of duty on *biri* tobacco is that it provides a smoke for more

sophisticated people and is consumed largely by working classes in urban areas who may be presumed to have larger income than the working classes in rural areas. On the other hand, it has been impressed upon us by some trade interests that if the differential tariff involves any economic principle of ability to pay, it is entirely misplaced in the case of tobacco. The use of a particular form of tobacco for consumption depends more on habit than on price.

30. It is not possible to endorse or to reject either point of view as no scientific investigations have been carried out regarding the class by class consumption of the various forms of tobacco. It is, however, difficult to agree that in a poor country where tobacco is consumed extensively by all classes, the price of the form of tobacco chosen for use will be entirely irrelevant. A proper consideration, in our opinion, will be the proportion of the duty to price in the case of cheap and costly varieties. At the present rates of duty the proportion of duty to value is 60 per cent for *biri* tobacco and 66 per cent for *hookah* and other tobacco. With a flat rate of nine annas per lb. the percentage will go up to 100 for the latter and go down to 38 for the former. The effect of a flat rate will be felt particularly in a period of falling prices when the duty may have to be reduced. With a differential tariff it will be possible to adjust the burden for the use of different varieties on the basis of the trends of their consumption. With a flat rate, the reduction, in such circumstances, has to be uniform for all varieties.

31. The other alternative is that a low rate of duty which does not bear heavily on cheap varieties of tobacco should be imposed along with a duty on manufactured *biris*. Assuming that the present rate of six annas per lb. will continue, the tariff for *biri* manufacture will have to be pitched at least eight annas per lb. in order to secure revenue of the same order as at present. If small *biri* manufacturers were exempted from the duty on economic and other considerations, the loss of revenue so caused will have to be made up by a further increase in the rate of duty on manufactured *biris*. This is likely to disturb the present balance between *biris* and cigarettes in regard to excise duty. It is difficult to visualise its effect on the consumption of *biris*. The *biri* manufacturing trade gives employment to a large number of persons and the possibility of the cheap varieties of cigarettes encroaching on the *biri* market has to be carefully investigated before a duty on manufactured *biris* is levied. The trade is organised on the basis of the out-worker system. The administrative control will, therefore, have to extend to lakhs of small scale operators which, besides imposing a heavy burden on administration, is also likely to cause harassment to these operators. The only way in which an excise duty on manufactured *biris* can be successfully operated is by exempting small scale units which, however, represent much the greater part of the industry. The recent Ordinance, since replaced by an Act of Lok Sabha, that has been issued to discourage the use of machinery in rolling *biris*, with a view to maintaining employment in the industry, is an indication of the economic importance of the industry as carried on in cottages. At the present stage, we would deprecate any experiment which seeks to make radical changes in the system of excise on *biris*.

We recommend that the present differential tariff should continue and improvements should be made in the criterion of capability of use for *biris* as suggested in paragraph 28.

Cigarettes - Duty on the Unmanufactured Tobacco

32. The tariff on cigarettes has been evolved in various stages. The progressive tariff on unmanufactured tobacco based on imported tobacco content was introduced in 1943, followed in 1948 by a progressive rate schedule on manufactured cigarettes based on value slabs related to wholesale cash price. A surcharge was imposed at two rates of one pice and two pice for every ten cigarettes on the basis of retail prices. The present rate structure may be seen at a glance in the table given below:

TABLE 3. RATES OF DUTY ON CIGARETTE TOBACCO AND CIGARETTES

I. *Unmanufactured tobacco.*	*Per lb.*
(I) If flue-cured and used in the manufacture of cigarettes containing-	
(i) more than 60 per cent weight of imported tobacco.	Seven rupees and eight annas.
(ii) more than 40 per cent but not more than 60 per cent weight of imported tobacco.	Five rupees.
(iii) more than 20 per cent but not more than 40 per cent weight of imported tobacco.	Three rupees and eight annas.
(iv) 20 per cent or less than 20 per cent weight of imported tobacco.	Two rupees and eight annas
(v) No imported tobacco.	One rupee.
(2) If flue-cured and used for the manufacture of smoking mixtures for pipes and cigarettes.	Seven rupees and eight annas.
(3) If other than flue-cured and used for the manufacture of *(a)* cigarettes or *(b)* smoking mixtures for pipes and cigarettes.	Nine annas.
II. *Cigarettes of which the value-*	*Per thousand*
(i) exceeds Rs 50 a thousand.	Twelve rupees and eight annas.
(ii) exceeds Rs 40 a thousand but does not exceed Rs 50 a thousand.	Ten rupees.
(iii) exceeds Rs 30 a thousand but does not exceed Rs 40 a thousand.	Seven rupees and eight annas.
(iv) exceeds Rs 25 a thousand but does not exceed Rs 30 a thousand.	Six rupees and four annas.
(v) exceeds Rs 20 a thousand but does not exceed Rs 25 a thousand.	Five rupees.
(vi) exceeds Rs 15 a thousand but does not exceed Rs 20 a thousand	Three rupees and twelve annas.
(vii) exceeds Rs 10 a thousand but does not exceed Rs 15 a thousand.	Two rupees and twelve annas.
(viii) exceeds Rs 7-8-0 a thousand but does not exceed Rs 10 a thousand.	One rupee and eight annas.
(ix) does not exceed Rs 7-8-0 a thousand.	One rupee.

33. The double decker progression with a surcharge, which is also graded, makes the system look somewhat complicated and is therefore a subject for criticism. There is a general demand that a simple system should be evolved.

34. It is necessary to appreciate, before any steps are taken to modify the present system, what its main functions are. The first is obviously the maximisation of the revenues; the others are that the duty is levied both on the raw material and on the manufactured product; that consistently with the maximisation of revenue, it attempts to distribute the burden equitably among different classes of consumers; and that the duty on the lowest class of cigarette is higher than the duty on *biri*. It is not clear whether the last consideration was consciously in the mind of Government, but it has been given considerable importance in the evidence tendered before us.

35. We have no doubt that any alternative rate structure that is devised should be such as to secure at least the present revenue and should embody, to the extent practicable, the same equitable distribution of the burden among different classes of consumers. Unmanufactured tobacco, as a raw material, is distinguishable from other raw materials in that it carries a duty in whatever form it is used. We are unwilling to recommend any departure from this practice and to base the duty in respect of cigarettes entirely on the finished product. We anticipate that difficult problems of equity as well as administration will arise if such a change is made. Unmanufactured tobacco when used for manufacturing cigarettes is blended with imported tobacco and forms an intermediate product which is easily recognisable for tariff classification and whose end-use can, reasonably, be estimated. It is, therefore, not difficult, technically and administratively, to work out progression at this stage. When progression was introduced on unmanufactured tobacco, there was

no duty on the manufactured product. It has been argued that with the introduction of the latter on a graduated scale the former has become in a sense unreal, on the assumption that in future the mainstay of the revenue will be the indigenous Virginia tobacco whose quality has improved considerably. One of the leading manufacturers has, however, argued that the trends of the market still suggest the continued use of imported tobacco; the clearances in respect of the quality of cigarette costing between Rs 40 and Rs 50, which presumably use the highest types of blends, indicate that its sales are going up. It is true that the intermediate qualities of cigarettes, using blends with moderate admixture of imported tobacco, are going out of use and a tariff that consists of a number of grades is in practice working as a two or three point tariff in respect of unmanufactured tobacco and also of the manufactured product. We do not, however, favour a single point tariff. We presume that for some time to come imported tobacco will continue to be used. The yield of revenue depends on the blends used, the import duty on tobacco and the rate of excise duty. It is possible to vary the blends in such a way as to reduce the offtake of the indigenous tobacco, to secure better quality and to pay comparatively less duty if only a single point tariff is adopted for unmanufactured tobacco. The following illustrations will make this point clear:

TABLE 4. COMPARATIVE AMOUNTS OF DUTY PAYABLE UNDER THE EXISTING TARIFF AND THE ALTERNATIVE STRUCTURE SUGGESTED

		Illustration 1			
(a) Assumptions:					
(1) blend: imported tobacco			75%		
indigenous tobacco			25%		
(2) No change in import duty					
(3) Excise duty			Rs 2		
Duty per lb. paid at present			Duty per lb. payable if the suggestion is accepted.		
$\frac{\text{Rs } 9\text{-}13\text{-}6 \times 75 + 7\text{-}8 \times 25}{100}$	= Rs 9-4-2		$\frac{\text{Rs } 9\text{-}13\text{-}6 \times 75 + 2 \times 25}{100}$	= Rs 7-14-2	
		Loss			Rs 1-6-0
(b) Assumptions:					
(1) blend: same					
(2) Import duty			12-0-0		
(3) Excise duty on unmanufactured tobacco			1-0-0		
$\frac{\text{Rs } 9\text{-}13\text{-}6 \times 75 + 7\text{-}8 \times 25}{100}$	= Rs 9-4-2		$\frac{\text{Rs } 12 \times 75 + 1 \times 25}{100}$	= Rs 9-4-0	
		Loss			Rs 0-0-2
		Illustration 2			
(a) Assumptions:					
(1) blend: imported tobacco			50%		
indigenous tobacco			50%		
(2) No change in import duty					
(3) Excise duty			2-0-0		
$\frac{\text{Rs } 9\text{-}13\text{-}6 \times 50 + 5 \times 50}{100}$	= Rs 7-6-9		$\frac{\text{Rs } 9\text{-}13\text{-}6 \times 50 + 2 \times 50}{100}$	= Rs 5-14-9	
		Loss			Rs 1-8-0
(b) Assumptions:					
(1) blend: same					
(2) Import duty			12-0-0		
(3) Excise duty			1-0-0		
$\frac{\text{Rs } 9\text{-}13\text{-}6 \times 50 + 5 \times 50}{100}$	= Rs 7-6-9		$\frac{\text{Rs } 12 \times 50 + 1 \times 50}{100}$	= Rs 6-8-0	
		Loss			Rs 0-14-9

Illustration 3

(a) Assumptions:
(1) blend: imported tobacco 20%
indigenous tobacco 80%
(2) No change in import duty
(3) Excise duty 2-0-0

$$\frac{\text{Rs } 9\text{-}13\text{-}6 \times 20 + 2\text{-}8 \times 80}{100} = \text{Rs } 3\text{-}15\text{-}6$$

$$\frac{\text{Rs } 9\text{-}13\text{-}6 \times 20 + 2 \times 80}{100} = \text{Rs } 3\text{-}9\text{-}1$$

Loss Rs 0-6-5

(b) Assumptions:
(1) blend: same
(2) Import duty 12-0-0
(3) Excise duty 1-0-0

$$\frac{\text{Rs } 9\text{-}13\text{-}6 \times 20 + 2\text{-}8 \times 80}{100} = \text{Rs } 3\text{-}15\text{-}6$$

$$\frac{\text{Rs } 12 \times 20 + 1 \times 80}{100} = \text{Rs } 3\text{-}3\text{-}2$$

Loss Rs 0-12-4

These are purely illustrative examples, but they suggest that there is a possibility in certain cases of a squeeze on indigenous tobacco by reviving some of the blends with a moderate admixture of imported tobacco unless the customs duty on the latter is also raised simultaneously. It is perhaps possible to offset this eventuality by changing suitably the tariff structure for the manufactured commodity. We are, however, inclined to think that the better course would be to continue the present progressive structure in respect of duty on unmanufactured tobacco.

Biri versus Cigarette

36. We have no evidence to indicate the exact degree of competition between the *biri* and cigarette trades. But we think, in view of the vast number of persons employed in the *biri* industry, that no attempt should be made at present to reduce the differential between the two.

Duty on Manufactured Products

37. The only suggestion that has been received by us regarding the tariff structure of the manufactured product is that the present nine value slabs should be replaced by two slabs; and the duty should be converted from the present specific rates based on value slabs related to wholesale cash price to two *ad valorem* rates of 10 per cent and 20 per cent. The burden of the present duty ranges from 13 per cent in the case of cigarettes whose value does not exceed Rs 7/8/- per thousand to 25 per cent in practically most of the cases except in one case where the burden is $27\frac{1}{2}$ per cent. The effect of the suggestion would be to reduce the burden on almost all varieties of cigarettes. The loss of revenue is estimated at Rs 3 crores or so. Another consequence of the reduction of *ad valorem* incidence on the lowest priced cigarettes would be to increase their competitive capacity as compared to the *biris*. For these reasons we do not recommend a revision of the present tariff on manufactured products.

38. We notice that in one case, i.e., cigarettes costing between Rs 10 and Rs 15 per thousand, the *ad valorem* incidence is the highest in the value slabs. We understand that cigarettes so priced are largely prepared from flue-cured and non-flue-cured tobacco of indigenous origin. The trends of clearances show that this variety has lost ground heavily during the last few years. There is a case, in our opinion, for a review of the duty on this variety possibly by abolishing the surcharge.

39. We would also recommend that the surcharge referred to in paragraph 32 should be amalgamated with the ordinary rates and that in order to give relief in the slab referred to above, the surcharge on cigarettes of the value of Rs 40-50 should be increased to compensate for the loss of revenue that may be involved.

Rates of Duty

40. The rates of duty for various varieties of tobacco have been increased from time to time and the following table shows the duties expressed as percentages of wholesale prices including duty from year to year:

TABLE 5. RATES OF DUTY AS PERCENTAGES OF WHOLESALE PRICES

Variety of tobacco	1944-45	1945-46	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53	1953-54
Cigarette:										
Flue-cured	55.4	59.3	55.6	53.8	51.9	N.A.	47.6	37.8	35.9	28.6
Aircured	47.7	58.6	52.1	38.8	65.4	N.A.	N.A.	N.A.	N.A.	N.A.
Biri	30.4	26.8	27.6	26.0	35.7	34.2	31.8	34.8	32.1	42.9
Snuff	37.8	32.0	37.0	23.7	32.5	36.7	44.1	24.4	17.9	15.9
Hookah & Chewing	15.8	19.7	19.5	16.7	23.4	30.4	32.3	43.3	37.5	39.5
Cigar and cheroot	16.7	15.1	19.1	27.2	31.6	21.0	19.9	27.4	29.5	31.2

The price data for flue-cured cigarette tobacco relate only to two top grades and the fall in percentages in recent years has been due to the decline in overall average duty following the reduced intake of imported tobacco.

The substantial decline in prices in 1953-54 necessitated the grant of temporary relief in rates of duty which, as mentioned earlier, was announced on 10th April 1954. The demand that was made to us before the announcement of the relief, was generally for reduction in the duties for different varieties. We do not think the change in production, prices and market conditions is sufficiently clear to justify a reduction in the normal rates of duty.

CHAPTER VI

SCOPE FOR EXTENSION OF CENTRAL EXCISE DUTIES

We propose to review in this chapter in broad terms the suitability of the rates of excise duties on commodities other than tobacco; we have dealt with tobacco in the previous chapter. We also discuss in this chapter the feasibility of levying excise duties on certain articles which are not at present subject to duty.

Coffee

2. The excise duty on coffee was introduced in 1944 when the rate of duty was fixed at 2 annas per lb.; it was raised to 3 annas per lb. in 1948. The quantity cleared for consumption has increased from 27 million lbs. in 1945-46 to 42 million lbs. in 1953-54; revenue has increased from Rs 34 lakhs to Rs 79 lakhs.

3. It has been represented to us that the present rate of duty (3 annas per lb.) is excessive from the point of view of the consumer as it makes the incidence of the duty per cup of coffee higher than that on tea. The duty on coffee, however, bears about the same percentage to wholesale price as the duty on package tea; and on this basis we do not consider that there is a case for reduction of the rate of duty on coffee.

Motor Spirits

4. The excise duty on motor spirit was introduced in 1917. The rate of duty was 6 annas per imperial gallon from 1917 to 1925 and the revenue derived rose steadily from Rs 24 lakhs in 1917-18 to Rs 79 lakhs in 1924-25. The duty was reduced to 4 annas per imperial gallon in 1925 when the customs import duty was also equalised with the excise duty. This rate remained in force from 1925 to 1929. Except for a slight drop to Rs 77 lakhs in 1925-26, the improvement in revenue continued as a result of increased output and consumption, and in 1928-29, the revenue went up to Rs 1.55 crores. The duty was raised to 6 annas per gallon in 1929 which resulted in the revenue going up to Rs 2.81 crores in 1929-30. With the further enhancement of the duty to 8 annas per gallon from 1st April 1931 and to 10 annas per gallon from 20th September 1931 the revenue reached the peak figure of Rs 5.59 crores

in 1936-37. The separation of Burma resulted in the reduction of revenue to Rs 1.36 crores in 1937-38, and thereafter customs revenue became more important than the excise revenue. In 1940, the rate for duty was raised to 12 annas per gallon and in 1942 it was raised further to 15 annas per gallon. These increases were made for revenue reasons. In 1946, the rate was reduced to 12 annas per gallon, but in 1948 the rate of 15 annas per gallon was restored. The application of the customs surcharge of 5 per cent in 1951 resulted in the duty being raised to 15 annas 9 pice per gallon. The excise revenue realised in 1953-54 from motor spirit was Rs 2.62 crores as against Rs 27.53 crores realised from the customs revenue on imports.

5. The total consumption of motor spirit during 1953-54 amounted to 296 million gallons, of which indigenous production accounted for 26 million gallons and the balance of 270 million gallons was imported. When the new refineries go into full production, the indigenous output is expected to rise substantially. The Central revenue from motor spirit will be derived thereafter mainly in the form of excise duty instead of customs duty.

6. Certain interests representing motor transport have suggested that the excise duty should be reduced. The excise duty as a percentage of wholesale price has, however, gone down from 50 in 1940-41 to 35 in 1953-54. With regard to imported motor spirit, import duty as a percentage of landed cost has fallen from 164 in 1938-39 to 89 in 1953-54. Besides, the quantity consumed has increased considerably. There is, therefore, no case at present for a reduction in the rate of duty. The question of the appropriate rate of duty for motor spirit will no doubt be investigated in detail after refining in India is firmly established.

Kerosene

7. The excise duty on kerosene was imposed in 1922 at the rate of 1 anna per gallon. In 1930, the rate was raised to Re 0-1-6, in 1931 to Re 0-2-3 and again from 20th September 1931 to Re $0-2-9\frac{3}{4}$ per gallon. The next change was in 1942 when the rate was increased to Re 0-4-6 per gallon. From 1946, the rate was reduced to 3 annas as a measure of relief to the poorer sections of the population.

8. Substantial revenue was realised from the excise duty on kerosene before the separation of Burma; the revenue derived in the pre-separation year (1936-37) was Rs 3.01 crores. In consequence of separation of Burma, the major part of the revenue from this article was derived from the customs duty. In 1947-48, there was a further drop in excise revenue as a result of partition which led to the loss of the Attock oil fields. The revenue from excise duty will go up in future as a result of the establishment of refineries in India.

9. The incidence of the customs import duty (which is at the same rate as the excise duty) has fallen from 55 per cent, in 1938-39 to 26 per cent, in 1953-54. As a major part of the consumption is met by imports, this trend indicates a fall in the burden of duty.

10. We, therefore, consider that there is justification for increasing the duty by a substantial measure. The rate increase should fit the currency unit for retail sale which is in terms of 'bottles' (6 to a gallon) in order to avoid unearned profit accruing to dealers.

Sugar

11. The import duty on sugar was an important source of customs revenue, collections in 1930-31 amounting to Rs 10.8 crores. With the development of the indigenous industry under a protective tariff, the revenue from the import duty declined and in order to recoup the consequent loss of revenue, an excise duty was imposed in 1934. The rate of duty was Rs 1-5-0 per cwt. from 1934 to 1937 when it was raised to Rs 2-0-0 per cwt. In 1940, it was raised to Rs 3-0-0 and in 1949 to Rs 3-12-0.

12. The excise revenue from sugar has risen steadily with the increase in production and enhancement of the rate of duty. From Rs 1.53 crores in 1935-36, it rose to Rs 14.33 crores in 1953-54. As as result of a fall in production, however, the budget estimate for 1954-55 has been placed at Rs 12.00 crores.

13. Certain interests representing the sugar industry have argued that, as the major part of the consumption of sugar is by the middle class, the

duty adds to their already heavy burden of taxation and as a restrictive effect on consumption. They have urged that, as sugar is an item of food with high calorific value, the excise duty on it should be kept at the lowest possible level to encourage consumption.

14. There is no evidence that the rate of excise duty has affected consumption. On the contrary, consumption, as indicated by clearance on payment of excise duty plus import, has been rapidly increasing. It rose from 7.2 lakh tons in 1947-48 to 15.7 lakh tons in 1953-54. Further, the duty expressed as a percentage of wholesale price has fallen from 21 in 1940-41 to 9 in 1953-54. We, therefore, consider that there is a case for a substantial enhancement of the duty, rather than for a reduction.

Matches

15. The match industry in India had developed as a result of the high revenue duty on imports and the Taxation Enquiry Committee of 1924-25 considered that there was, therefore, a case for the levy of an excise duty on this article. The excise duty on matches was imposed in 1934 at the rate of Re 1 per gross for boxes of 40s (i.e., on a box of 40 match sticks), Re 1-8-0 for 60s and Rs 2-0-0 for 80s.

16. To safeguard the position of cottage factories, units producing not more than 100 gross boxes per day were given a rebate of 10 pice for 40s, 15 pice for 60s and 20 pice for 80s. These concessions were, however, less than the rebate of 2 annas recommended by the Tariff Board.

17. The rates of duty fixed in 1934 remained in force upto 1941, when they were doubled for raising additional revenue. At the same time, a new tariff class of 50s was introduced on which duty was charged at Rs 2-8-0 per gross.

18. The intention in creating a tariff class of 50s was to enable match box to sell for 2 pice, but this was not found practicable. The duty was, therefore, reduced on 50s to Rs 1-12-0 per gross from 1st August 1946, leaving the rates on other classes unaltered. This meant a higher rate of duty (Rs 2-0-0) on a box of 40s than on a box of 50s (Rs 1-12-0) and the effect of this was to encourage the standardisation of production at 50s. The object of the concession, *viz.*, to make available a two-pice box did not, however, materialise because even with the concession, 50s could not be sold at 2 pice. From 1st March 1948, the rate of Rs 2-8-0 per gross for 50s was therefore restored.

19. In 1948-49, the question of the standardisation of match production at a uniform size was examined. Government found that the existence of boxes with varying match content led to the exploitation of the consumer, boxes with smaller match content being passed off as boxes containing a higher number of sticks. Once more, the possibility of retailing a 50s box at 2 pice was examined. After a cost survey, however, it was found that a 50s box could not be sold at 2 pice without unduly lowering the rate of excise duty. Also units other than the Western India Match Company Limited were unwilling to adopt the same size as WIMCO. It was considered by these factories that they would have an advantage if they marketed a small match box. It was, therefore, decided that there should be two sizes of boxes, WIMCO concentrating on the production of 60s for which their machinery was suitable and other units producing 40s. 60s would be marketed at 3 pice and 40s at 2 pice.

20. It was, however, found that the medium size factories could not market products at these prices if they had to pay the full excise rates. A second preferential category was, therefore, provided in the tariff. Factories whose output did not exceed 500,000 gross boxes per year but exceeded 100 gross boxes per day, were granted rebates of 6 pice for 40s and 9 pice for 60s and factories with output not exceeding 100 gross per day were given rebates of 1 anna for 40s and 2 annas for 60s. These rates came into force in 1949.

21. The revised concessions introduced in 1949 were further liberalised in 1950 at the Select Committee stage of the Indian Finance Bill, 1950. With these rates which are still in force are granted rebates of 1 anna for 40s and 1 anna 6 pice for 60s in respect of factories with the intermediate range of output and 2 annas for 40s and 3 annas for 60s in respect of the low-output factories.

22. The excise revenue from matches which was about Rs 2 crores in 1935-36 reached the peak figure of Rs 9.35 crores in 1952-53. In 1953-54,

the revenue was Rs 8.78 crores.

23. A number of representations have been made to us for enlarging the scope of the preferential tariff for match factories working on a cottage scale. An issue of this character can only be decided after a more detailed enquiry into the circumstances of the industry and the relative costs of production of all types of factories than we have been able to make in the short time at our disposal. We, however, find that the units granted concessions at present have been able, over the last few years to increase their share of the market. The following table sets out the variations in the relative output of the three class of units:-

TABLE 1. VARIATIONS IN THE RELATIVE OUTPUT OF THE THREE CLASSES OF UNITS

Year	Percentage share of production Factories with output		
	Exceeding 500,000 gross boxes per year	Not exceeding 500,000 gross boxes per year but exceeding 100 gross boxes per day	Not exceeding 100 gross boxes per day
1949-50	81.6	17.4	1.0
1950-51	75.6	22.7	1.7
1951-52	74.4	23.8	1.8
1952-53	71.3	27.1	1.6
1953-54	68.4	30.1	1.5

Apart from other factors, it is possible that the preferential tariff may also have been of assistance to small factories. We, therefore, suggest that the Government of India should make enquiries into the cost of production of the small units to determine the amount of preference that should be given to them. We understand that a new category of factories with output not exceeding 25 gross boxes per day has been created with effect from 11th September 1954 and rebates of 4 annas per gross of 40s and 6 annas per gross of 60s have been granted for this class of factories.

24. The level of the standard rate of duty needs to be considered. The duty of Rs 2-0-0 per gross of 40s and Rs 3-0-0 per gross of 60s forms approximately 49 per cent of the wholesale and 44 per cent of the retail prices. Although this may appear to be high, the *per capita* incidence of the duty is hardly 4 annas. Further, as the bulk of the consumption is for smoking it should be possible for the consumers to bear a reasonable additional charge. The rate of duty was raised only once in 1941 since the imposition of the duty in 1934. Enhancement of duty for raising revenue for development purposes is, therefore, justifiable.

25. We consider that there is scope for a considerable increase in duty, and suggest that the precise measure of increase should be determined on a careful investigation of the position regarding actual retail prices, profit margins, and sales taxation in the various States so as to see that the increase fits the currency unit and does not unduly inflate middlemen's profits.

Mechanical Lighters

26. The duty on mechanical lighters was introduced in 1934. The Select Committee which examined the Bill for the levy of an excise duty on matches expressed the view that there was a very real danger that the revenue expected from matches might be adversely affected if, as a result of the imposition of the duty on matches, the use of mechanical lighters increased considerably. They, therefore, recommended the imposition of a suitable excise duty on mechanical lighters although there was at that time no indigenous manufacture of mechanical lighters.

27. The duty was imposed in 1934 at the rate of Rs 1-8-0 per lighter and when the rates of duty on matches were doubled in 1941, the duty on mechanical lighters was also doubled being raised to Rs 3 per lighter.

28. There is at present no production of mechanical lighters and consequently no revenue is realised from the excise duty on this article.

29. It is difficult to foresee the extent to which the consumption of matches will be affected if mechanical lighters come into the market at low prices. The present rate of duty is, however,

prohibitive. We, therefore, recommend relief in excise duty (by fixation of the rate at 8 annas or 12 annas) retaining the present licence fee of Rs 100. As the industry develops, its effect on the revenue from matches should be kept under review.

30. The import duty on mechanical lighters is 78 $\frac{3}{4}$ per cent, *ad valorem* plus the excise duty. This provides a substantial margin over the excise duty and no consequential adjustment in import duty is considered necessary.

Steel Ingots

31. The excise duty on steel ingots was introduced in 1934 with a view to recouping the loss of customs revenue from steel as a result of the recommendations of the Tariff Board which involved a considerable reduction in the level of import duties. The duty was imposed at Rs 4 per ton at which rate it is still maintained.

32. With the steady growth of the iron and steel industry, the revenue has increased from Rs 35 lakhs in 1935-36 to Rs 63 lakhs in 1952-53 but there was a slight decline to Rs 60 lakhs in 1953-54.

33. It has been suggested that steel is not a suitable article for the levy of an excise duty as it is a basic raw material for several industries. We do not consider that the present rate of duty which is only 1.4 per cent, of the wholesale price is harmful in any way, particularly when the price of indigenous steel is lower than that of imported steel. We do not, however, recommend any increase in duty in view of the price pooling arrangements under which the difference between the two prices is retained in a fund and is in the nature of an additional excise duty on indigenous steel.

Tyres

34. The excise duty on 'tyres' was introduced in 1941 in order to recoup the loss of customs revenue as a result of the growth of the industry in the country. The duty was at a flat rate of 10 per cent, *ad valorem* from 1941 to 1948, when it was raised to 15 per cent, *ad valorem*. From 1949, a higher rate of 30 per cent, *ad valorem* was fixed for motor tyres. The revenue has risen steadily from Rs 35 lakhs in 1941-42 to the peak figure of Rs 6.10 crores in 1951-52 as a result of the expansion of output and enhancement of rates of duty. There was a decline to Rs 4.38 crores in 1952-53 owing to reduction in output. In 1953-54 there was a recovery to Rs 4.95 crores.

35. Certain transport interests have advocated reduction of duties for bus and truck tyres. The overall taxation of motor vehicles was recently reviewed by the Motor Vehicles Taxation Enquiry Committee which did not recommend any reduction. We too do not suggest any change.

Vegetable Product

36. The excise duty on vegetable product was imposed in 1943 for revenue reasons. The rate of duty was Rs 5 per cwt. up to 1948 when it was raised to Rs 7 per cwt. or 1 anna per lb. The excise revenue has risen steadily from Rs 94 lakhs in 1943-44 to Rs 2.81 crores in 1953-54 with the expansion of production and enhancement of the rate of duty.

37. The manufacturing interests have suggested reduction of the excise duty in view of the fact that they have also to pay sales tax on raw materials and the finished product as also octroi duties.

38. The excise duty forms only 5 per cent of the wholesale price and we do not, therefore, consider that there is any case for reduction. We do not recommend any increase at this stage because the industry is working only to 53 per cent of its rated capacity. At the same time, if vegetable oil is taxed, no exemption is recommended for the quantities used for the manufacture of vegetable product because it is desirable to maintain the existing differential between oil and vegetable product.

Tea

39. The excise duty on tea was introduced in 1944 in order to broaden the basis of indirect taxation and to raise further revenue. The rate of duty from 1944 to 1948 was 2 annas per lb. and was then raised to 3 annas per lb. As a result of the steep fall in prices the tea industry was affected

by a crisis in 1952 and towards the end of May 1952 the Government of India appointed a team of officials to make a thorough investigation and report early on the position of the industry. This Committee submitted its report in September 1952, suggesting various measures of relief for the industry including deferred payment of excise duty but it did not recommend any reduction of excise duty.

40. The question of readjustment of excise duty was, however, examined by the Government of India. After detailed examination, it was considered that a flat reduction of even one anna per lb. would cause a loss of revenue of as much as Rs 1.33 crores and confer a benefit not only on the primary producers of medium and inferior tea who were most hit by the slump in prices but also on the firms which purchased tea from the garden and then blended and sold it in retail packages, and whose business had not been affected at all. For these reasons a flat reduction in duty was not considered desirable.

41. It was accordingly decided to readjust the pattern of duty by imposing a low rate of one anna per lb. on loose tea when it left the producing factories in the gardens and a further and higher levy of 5 annas per lb. at the stage of issue from packing factories after blending and packing into retail sizes. This change was introduced from 15th April 1953. The effect of this change was to confer upon the tea gardens a saving of 2 annas per lb. on all tea issued by them in loose form, which was defined as "issues in containers exceeding 60 lbs.". Where such tea is consumed without being repacked by the packing concerns, the consumer gains this amount of 2 as. per lb. Where the tea passes into consumption after repacking by the packing factories the total amount of duty paid would be 4 annas a pound which means that this class of consumer will pay an extra one anna per lb.

42. The revised pattern of duty caused a loss of revenue to the extent of over Rs 1 crore in 1953-54. The actual excise revenue in 1953-54 was Rs 2.11 crores as against Rs 3.38 crores in 1952-53. The loss in 1953-54 was high because of the carry-over of pre-15th April 1953 stock of tea which paid duty only at the rate of 1 anna per lb. on conversion into package tea. The loss in future years may perhaps be only of the order of Rs 40 lakhs.

43. The present duties of 1 anna and 4 annas per lb. on loose and package tea, respectively, represent 4.2 per cent, and 8.6 per cent, of wholesale price. We consider there is scope for an increase in the duty on both.

Cloth

44. The present excise duty on cloth was introduced in 1949. A duty of 25 per cent, *ad valorem* was imposed on superfine cloth (i.e., cloth with warp counts 48s or finer) with effect from 1st January 1949 as one of the measures to combat inflation. This was later extended to cover fine, medium and coarse varieties through the Indian Finance Act, 1949, the rate of duty being $6\frac{1}{4}$ per cent, *ad valorem* on fine cloth (i.e., cloth with warp counts 35s-47s) and 3 pice per yard on medium (i.e., cloth with warp counts 17s-34s) and coarse (i.e., cloth with warp counts not exceeding 16s) varieties.

45. The duty is confined to mill made cloth and is not applicable to cloth woven on handlooms. Similarly the cloth produced on power-looms, i.e., in mills which do not have spinning departments, is also not subject to duty.

46. With effect from 1st February 1950 the rates of duty on superfine and fine varieties were reduced to 20 per cent, *ad valorem* and 5 per cent, *ad valorem*, respectively. Under the Indian Finance Act, 1953, the rates of duty were revised and fixed at 3 annas 3 pice per yard on superfine cloth and 1 anna 3 pice per yard on fine cloth. No change was made in the rates of duty on medium and coarse varieties which continued at 3 pice per yard.

47. Apart from these excise duties proper, an additional flat rate of duty of 3 pice per yard on all dutiable varieties of cloth was imposed from 15th February 1953, and the proceeds were earmarked for the development of *khadi* and other handloom industries.

48. The duty on superfine cloth was reduced from 3 annas 3 pice to 2 annas per yard from 25th October 1953. In 1954, the rate of duty on superfine cloth was raised to 2 annas 6 pice per yard, that on fine to 1 anna 6 pice per yard and

that on medium and coarse to 6 pice per yard.

49. To enforce the restriction on the output of *dhoties* by mills, graduated additional excise duties are levied on mill-made *dhoties* at rates ranging from 2 annas to 8 annas per yard from 26th October 1953.

50. The excise revenue from cloth which amounted to Rs 13.21 crores in 1949-50 fell to Rs 9.81 crores in 1950-51 owing to the substantial drop that occurred in the clearance of superfine, and, to a lesser extent, of fine and medium varieties. There was a recovery in 1951-52 and revenue rose to Rs 16.33 crores, but in 1952-53 again there was a sharp fall in the clearance of superfine and fine varieties (although the quantity of medium cloth cleared recorded an increase) and consequently the revenue fell to Rs 13.43 crores. In 1953-54, there was a recovery under all varieties except 'fine' and the revenue rose to Rs 15.01 crores excluding the realisation of Rs 6.57 crores from the additional levy. The budget estimate for 1954-55 is Rs 20.00 crores (excluding the additional duty) and this takes account of the enhancement of rates made in 1954.

51. Certain textile interests have represented that the excise duty is a burden on the industry and that after the change-over from a sellers' to a buyers' market, the duty is contributing to consumer resistance and accumulation of stocks.

52. The average wholesale prices of the various varieties of cloth and the duty expressed as percentages thereof are given below:-

TABLE 2. AVERAGE WHOLESALE PRICES OF CLOTH AND DUTY AS PERCENTAGES THEREOF

Description	Wholesale price per yard			Rate of duty per yard including additional levy			Percentage of duty to price
	Rs	as.	ps.	Rs	as.	ps.	
Superfine	1	0	2	0	2	9	16.9
Fine	0	13	4	0	1	9	13.1
Medium	0	11	9	0	0	9	6.4
Coarse	0	11	3	0	0	9	6.7

These figures indicate that the incidence of the duty is not high.

53. Since the imposition of the duty, there has been a steady increase in the production of cloth. From 3,384 million yards in 1949-50 it rose to 4,900 million yards in 1953-54. The relative share of cloth in the various tariff classes has, however, changed substantially as indicated below:

TABLE 3. RELATIVE SHARE OF VARIOUS TARIFF CLASSES IN TOTAL PRODUCTION AND CLEARANCE OF CLOTH

Description	Percentage share in production					Percentage share in clearance for home consumption				
	1949-50	50-51	51-52	52-53	53-54	49-50	50-51	51-52	52-53	53-54
Superfine	10	5	7	4	6	11	6	7	5	6
Fine	25	32	30	25	16	25	27	29	23	16
Medium	56	52	55	59	66	57	55	56	63	68
Coarse	9	11	8	12	12	7	12	8	9	10

The output of 'superfine' cloth declined sharply from 321 million yards in 1949-50 to 186 million yards in 1950-51; there was a recovery to 294 million yards in 1951-52, but there was again a sharp fall to 201 million yards in 1952-53. In 1953-54, production increased considerably to 291 million yards. The readjustment of duty might have helped the recovery of production.

The production of 'fine' variety of cloth improved from 845 million yards in 1949-50 to 1,193 million yards in 1950-51 and to 1,276 million yards in 1951-52. The level of production was fairly maintained at 1,148 million yards in 1952-53 but there was a sharp fall in 1953-54 to 758 million yards. This was apparently due to the enhancement of duty. The rate of duty on this variety of cloth was changed from 5 per cent *ad valorem* to 1 anna 3 pice per yard, the latter rate

amounting to 9.4 per cent *ad valorem*.

The output of medium variety of cloth has expanded from 1,901 million yards in 1949-50 to 3,249 million yards in 1953-54. Production of the coarse variety has also increased from 317 million yards to 602 million yards during the same period.

54. The import duty on raw cotton which yielded a revenue of about Rs 4 crores was abolished in 1954 and the rates of excise duties were simultaneously increased. Applying the rate increases in the 1954-55 budget to final figures of clearances in 1953-54, the category-wise increase in revenue is as under:

	(Rs crores)
Superfine	0.7
Fine	1.1
Medium	4.4
Coarse	0.7
	6.9

The increase in revenue is mainly from coarse and medium varieties which are not manufactured from imported cotton. If the raw cotton import duty and the excise duties on fine and superfine cloth made from imported raw cotton are considered, a revenue loss of Rs 2.2 crores would result from the abolition of the import duty on raw cotton on the basis of 1953-54 clearances. A qualification is, however, necessary relating to refund of taxes on exports. If it is assumed that the import duty on raw cotton used to make exported cloth would have been refunded, the revenue loss could be reduced by about Rs 1 crore, because the net revenue from raw cotton import duty would be reduced from Rs 4 crores to Rs 3 crores. The revenue loss as a result of the abolition of import duty on cotton and the change effected in the taxation of fine and superfine cloth in the 1954-55 budget would be Rs 1.2 crores on the basis of 1953-54 production and clearance figures. This indicates that the superfine and fine varieties have been given some relief.

55. We consider there is a case for enhancement of rates of duties to a moderate extent on all varieties of cloth.

56. It may also be mentioned that rate differentiation on the basis of counts of yarn alone is illogical. The purpose of providing for progression on this basis is defeated by the fact that coarse varieties include only 6 per cent of *dhoties* and sarees used by the poorer sections of the community out of the total consumption and the greater part of the production consists of furnishing fabrics, sheeting, etc., which are used by the richer classes. The present tariff classification applies the same rate of duty to all these descriptions of cloth. The possibility of formulating a tariff fixing different rates of duty for different varieties of cloth such as *dhoties*, long cloth, sheeting, furnishing fabrics, etc., in addition to the present tariff classes based on warp count, may be considered.

57. As regards the additional excise duty on *dhoties*, its levy at a uniform rate irrespective of the variety of cloth operates to the disadvantage of the cheaper varieties. The possibility of graduating the levy should also be considered.

Rayon or Artificial Silk Fabrics

58. In the 1954-55 Budget, excise duties were imposed for the first time on rayon or artificial silk fabrics. The justification for the levy of excise duty on rayon or artificial silk fabrics was that the use of these fabrics was widespread and that they competed, to some extent, with cotton cloth which was subject to an excise duty. The rate of duty is 6 pice per square yard. There is also in addition the levy of 3 pice per yard for the benefit of khadi and other handloom industries. The products of handlooms as well as units with less than twenty-five power looms are exempt from duty. The manufacturers are also provided with the alternative of payment of duty calculated at the rate of Rs 22-8-0 per loom per month inclusive of the additional levy. The duty forms about 7 per cent of the wholesale price.

59. The actual revenue from this excise duty is estimated at Rs 50 lakhs during the current year as against the estimate of Rs 1.60 crores given in the budget speech. This difference has been due to the reduction of the rate of duty from 1 anna 6 pice per yard to 6 pice per square yard and the raising of the exemption limit from 9 looms to 24 looms.

Cement

60. The excise duty on cement, which was also imposed for the first time in the 1954-55 Budget, is Rs 5 per ton and the revenue yield is estimated at Rs 2 crores during the current year. The duty forms about 5 per cent of the wholesale price.

Soap

61. The duty on soap was another of the new excise duties imposed in the 1954-55 Budget. A rate of Rs 14 per cwt. has been fixed for toilet soap and lower rates of Rs 5-4-0 per cwt. and Rs 6-2-0 per cwt. have been imposed on household and laundry soap in 'plain bars of not less than one pound in weight' and 'other sorts' respectively. The products of factories not using power as well as of factories using power but whose output during a financial year does not exceed 100 tons of household and laundry soap and 50 tons of other soap are exempt from duty. Further, the first 125 tons of household and laundry soap and the first 25 tons of toilet soap cleared for home consumption during each financial year are also exempt from duty. The revenue from the excise duty on soap is estimated at Rs 1.35 crores. The duty forms 7 to 10 per cent of the wholesale price.

Footwear

62. The duty on footwear which is the last of the four new items of excise duty introduced in 1954-55 is at 10 per cent *ad valorem*. The products of factories not using power as well as of factories using power not exceeding 2 horse-power and employing less than 50 workers are exempt from duty. The revenue expected from this head is Rs 82 lakhs.

63. As it is too early to assess the effects of the newly imposed excise duties on the four commodities mentioned above, we do not recommend any change in the rate of duty.

Exemption or Differentiation in respect of Small Scale Production

64. One of the features which has been noticed in respect of a number of excise duties is the exemption of small-scale production, e.g., in respect of handloom cloth, soap, foot-wear and rayon; in respect of matches there are different grades of duties varying according to the size of the factory, with the lowest rates for the cottage factories so-called.

65. These concessions and exemptions are granted on varying bases, such as non-use of power or machinery, number of workers employed in a factory, type or size of organisation, differentiation of product and scale of output. Non-use of power is a basis for exemption of output of sugar, cotton and rayon and artificial silk fabrics, soap and footwear. *Biris*, in the manufacture of which machinery is used, are subject to duty, while hand-made *biris* are not taxed at the manufacturing stage. The number of workers employed in a factory is utilised as a criterion in the levy of excise duty on footwear; thus, the output of units using not more than 2 horse-power and employing less than 50 workers is exempt. The type or size of the organisation may be taken into account; thus, cotton cloth manufactured in power-loom factories (i.e. factories without a spinning plant), rayon or art silk fabrics manufactured in units with less than 25 power looms, and soap produced in factories with capacity not exceeding 100 tons of household and laundry soap and 50 tons of other soap are exempt. The exemption of khandsari and palmyra sugar illustrates differentiation on the basis of type of product. The scale of output of the factory determines the rate of duty payable in the case of matches. The exemption of an initial slab of output from the excise duty on soap amounts to the grant of a concession to units with low outputs.

66. One of the reasons for exemption, which, however, does not apply to all cases, is the administrative problem of keeping a check on the production of scattered small-scale producers. This reason has particular force, e.g., in respect of soap and footwear which form the output of the smallest producers. Even in respect of these

articles however, the exemption is not restricted to the smallest producers who present the greatest administrative problem. There are two other economic considerations which enter into the determination of exemption, and more particularly of differentiation, e.g., in the case of the cottage match industry. One is the higher cost of production of the smaller producer and his relatively lower ability to bear taxation. The other is the desirability of encouraging production by labour-intensive methods, i.e., of methods which promote greater employment.

67. We have already made it clear (*cf.* Volume I, Chapter VI) that from the point of view of the Indian economy, there is a strong case for the special encouragement of small-scale and cottage industries. The tax system may be used for this purpose, but in a judicious manner. We would suggest a periodic review of the working of these concessions, so that policy in this respect may keep in step with the changing needs of the economy.

Possibility of Extension of Excises

68. We now come to the consideration of possible avenues of fresh taxation in the field of central excises. We give below a list of articles the production of which within the country has developed sufficiently to justify, in our opinion, the imposition of an excise duty in the interests of raising much needed revenue for financing further development.

69. It is obviously not possible for us to indicate the exact rates of duty that should be applied to these articles. We also realise that it may be necessary for Government to make more detailed investigations than we have been able to attempt into the circumstances of each industry before actually imposing the duties. The general justification for the extension of central excise tariff and an enhancement in the rates of existing excise duties is contained in Vol. I of our Report and in the first chapter of this Volume. The analysis made here is intended to indicate the limits up to which it should be possible to expand the existing revenue from central excise duties.

Sewing Machines

70. The industry has developed as a result of protection and the present level of production is adequate to meet the country's requirements, except in respect of industrial sewing machines. The number of sewing machines manufactured rose from 5,860 in 1947 to 64,139 in 1953 and the industry is reported to be working almost to its full capacity. The value of the output is about Rs 1.5 crores and a moderate rate of duty appears feasible. The cost of collection will be relatively small in view of the fact that there are only two units manufacturing complete machines.

Vegetable Oils

71. Similar agricultural products such as cotton and tobacco are subject to excise duty at some stage or the other and we consider that a levy on vegetable oil will be justifiable. The total quantity of vegetable oil produced in India is estimated at 1.41 million tons of which 0.36 million ton constitutes the production of *ghanis*. There are about 1,050 large mills, 8,600 small mills using power-driven *ghanis* and screw-presses and about 4 lakhs of *ghanis*. The total number of units registered under the Industries (Development and Regulation) Act, 1951, is, however, only about 2,100. The quantities of vegetable oil used in the manufacture of 'vegetable product' and soap are 0.25 and 0.05 million ton, respectively, and exports account for 0.03 million ton.

We consider that the production of *ghanis* should be exempted.

The Central Excise Department is already entrusted with the work of collection of the cess under the Indian Oil Seeds Committee Act. With this experience it will not be difficult to build up an organisation necessary for the collection of an excise duty and the cost of collection, will not, therefore, be high.

We consider that a relatively low rate of duty would be appropriate on this commodity.

Woolen Textiles

72. As cotton cloth and art silk are subject to excise, the taxation of woollen textiles will be

justifiable, as only comparatively well-to-do persons use them. There will be a further justification because there is no import duty on raw wool and wool tops (unlike in the case of the raw material of the art silk industry). The coarser rugs and similar articles used by the poorer people may be exempted.

There are 20 large and 122 small mills with an estimated production of 20 million lbs. valued at Rs 10 crores. A moderate rate of duty appears feasible for this article.

Biscuits

73. We consider biscuits as a suitable article for taxation. The indigenous production now meets almost the entire requirements and imports have steadily declined and in 1953-54 only 204 tons valued at Rs 9 lakhs were imported as against 2,393 tons valued at Rs 74 lakhs in 1948-49. The present production is of the order of 11,000 tons. On this article also a moderate rate of duty would appear appropriate.

Paper

74. The industry has developed as a result of tariff protection, and this provides justification for the levy of an excise duty on paper.

There are 20 mills manufacturing paper and paper board. The production of paper and paper board rose from 106,000 tons in 1946 to 138,200 tons in 1953. We consider that a moderate rate of duty could be levied, with exemption for hand-made paper.

Dry Batteries and Storage Batteries

75. The production of dry and storage batteries has developed as a result of protection. There are now 5 units manufacturing dry batteries and 13 units manufacturing storage batteries. Production has expanded considerably in recent years and is estimated at 153 million cells of dry batteries and 171,000 storage batteries, and we consider that a moderate rate of duty is feasible.

Electric Lamps

76. The indigenous production has replaced imports in respect of certain varieties and there is, therefore, a case for the imposition of duty. There are 11 units, and output rose from 9.2 million pieces in 1948 to 19.7 million pieces in 1953. A moderate rate of duty would, we think, be appropriate.

Aerated Waters

77. The Taxation Enquiry Committee of 1924-1925 considered that a tax on 'aerated waters' would be a comparatively unobjectionable way of raising revenue but that it should be given a low place in the order of preference. It thought that the tax would fall largely on the upper and middle classes. One objection to taxing this commodity which it mentioned was the possibility that it might drive people, who would otherwise avoid it, to the use of impure water. The Committee suggested a tax on cylinders of carbonic acid gas as a simple plan for taxing aerated water.

Definite data regarding the number of organised and unorganised units and their output are not available. a rough estimate of total output in India is 240 million bottles.

We consider that this is a suitable article for taxation because it is of the nature of a semi-luxury. There is no serious risk of fall in consumption as a result of the imposition of an excise duty. We do not think that the tax should be levied as an impost on carbon dioxide gas cylinders because such a levy will not permit of selectivity of rates on aerated waters of different specifications.

We, therefore, recommend the levy of a small duty on the products of the large factories with exemption for small units as necessitated by administrative considerations. It may be possible to apply the duty at graduated rates because of the wide range of prices.

Electric Fans

78. This industry has developed as a result of the high rate of import duty and restriction of imports. The production of electric fans increased from 158,800 in 1948 to 206,000 in 1953. There are 18 units manufacturing electric fans and we consider there is a case for a moderate duty.

Glass and Glassware

79. The glass industry has seen much expansion as a result of the protection granted for sheet-glass and the high revenue duty on other varieties. The production of sheet glass increased from 6.3 million sq. ft. in 1948 to 22.8 million sq. ft. in 1953. The production of 'blown and pressed ware' increased from 65,436 tons in 1948 to 69,168 tons in 1953. The value of the total production of glass and glassware is estimated at Rs 5.20 crores. There are 109 units in the industry. A fairly substantial rate of duty would, we feel, be justified.

Paints and Varnishes

80. The production of paints and varnishes has been fairly steady during the last few years and the output is about 31,000 tons. There are 150 units in the industry of which about 100 are of small size. The aggregate value of output is estimated at Rs 6.0 crores and we recommend a moderate rate of duty.

Ceramics

81. Substantial progress has been made in the manufacture of good quality crockery and other ceramic products in the country in recent years and imports have been reduced. There are at present 67 factories of which 5 are big units. The production is estimated at 10,400 tons of 'white wares', 600 tons of 'sanitary wares', 33,600 tons of 'stone wares' and 228,000 tons of 'refractories'. About 374,000 doz. of 'glazed tiles' are also produced. The total value of output is about Rs 3.50 crores. We are of opinion that there is a case for a substantial rate of duty on this commodity.

82. We estimate that the proposals we have made in this chapter for (a) the enhancement of existing duties and (b) the imposition of new duties would, if implemented, result in the existing receipts from Central excises going up by roughly 40-45 per cent.

CHAPTER VII, PART II

CENTRAL EXCISE ADMINISTRATION

Appellate Procedure

13. Before we discuss other administrative problems relating to central excise, we shall deal with the appellate procedure in central excise matters as in a number of representations it has been suggested that an independent authority should hear appeals. *Mutatis mutandis* the same appellate procedure exists on the central excise side as on the customs side. We would, therefore, recommend that revision applications to the Government of India should be heard by an Appellate Tribunal in the same way as would be provided for on the customs side. As, however, the volume of work involved on the central excise side will not justify the setting up of a separate Tribunal, we suggest that the proposed Appellate Tribunal for customs should deal with the central excise cases also.

System of Control in Central Excise

14. It will be convenient to deal with central excise administration under two broad heads, *viz.*, as affecting manufactured articles and unmanufactured articles. Except tobacco and coffee, all other centrally excised articles come under the category of manufactured articles.

Manufactured Articles

15. In regard to manufactured articles, the excise control commences with the licensing of the factories concerned. A bond has to be executed by a factory which provides that the entire output of articles subject to central excise duties would be produced for the charging of duty

and that they would be satisfactorily accounted and this is supported by adequate security. The amount of the bond is the equivalent of the duty on a fortnight's output or on the maximum quantity of goods likely to be in storage at any time, whichever is less. The maximum amount of the bond is ordinarily Rs 50,000. The amount of the security is decided by the Collector with reference to the standing of each factory. It is usually Rs 10,000 for a big factory and for smaller factories it may be as low as Rs 100.

16. Excise control is exercised by the officer of the Central Excise Department who is posted at the factory. He is charged with the duty of keeping a watch over the operations in the various departments of the factory so as to prevent illicit disposal of the commodities manufactured. Although the articles produced become liable to levy of duty as soon as they are produced, the manufacturers are permitted to store them without payment of duty in approved store rooms within the factory premises and duty is collected only at the time of the removal of the goods outside the factory. These accounts are checked by the Central Excise Officer in charge and also by supervising officers. Th manufacturer is required to provide, free of cost, office accommodation for the central excise staff posted at the factory and where so required , residential accommodation for this staff near the factory at a rent not exceeding 10 per cent of the pay of the officer concerned.

Criticism of Excise Procedure

17. The method of control exercised under the Central Excise Rules on the production and clearance of goods from factory premises has come in for a certain amount of criticism from the interests affected. It was urged before us that it interferes with manufacturing processes, it is expensive for Government and is irritating to the manufacturers. It was also alleged that it does not fully serve the purpose for which it is intended, *viz.*, to prevent loss of revenue through pilferage. A suggestion was, therefore, made that the procedure should be considerably simplified by making it possible for excise duty being collected on the basis of audited accounts, subject to such conditions as Government may lay down regarding the form in which they should be kept.

18. Two important features of the present system are that accounts have to be maintained of production and storage, and that clearances from the factory premises should be verified personally by the Central Excise Officer posted at the factory. There is no doubt that both for the factory and for the administration it is more convenient for the duty to be collected at the time of the clearance of goods. It facilitates the removal of finished goods from the factory to godowns and thus avoids interference by central excise officers during manufacture. Since clearances are normally made for the purpose of sale the present system also helps the factory owners to make payment of duty practically at the same time as they recoup it from their agents and dealers. As central excise duty is levied on goods and not on persons, the point at which it should be collected is when the goods are manufactured, but since practical difficulties do not make that possible, the next best course is to collect it at the time of clearance from the factory premises. It seems to us reasonable for Government to ensure that for the period intervening between production and clearance the goods should be kept in a proper place and under adequate supervision. The procedure followed in India in this regard is also practically the same as that obtaining elsewhere. Physical supervision is considered to be necessary in such cases in almost every country. For instance, the following extract from a standard work on Canadian taxation will be of interest:

"The habitat of the exciseman is the brewery, the distillery, and the cigar, tobacco and cigarette factory. Not only are these his native surroundings but in many instances they provide his abode during his working hours..... The exciseman is less a tax collector than a combination of policeman, accountant and chemist. He rules this field of manufacturing with almost undisputed sovereignty. No person

may enter on any of the activities subject to excise without first obtaining a licence ... the granting of which is by no means automatic."*

19. Another argument advanced against the existing system is that it is too costly. The entire cost of collection of central excise duties in India works out to 4.5 per cent of the total duties collected. This includes the cost of collection of duty on commodities such as tobacco, which entail complicated administrative arrangements that are relatively more expensive. We do not think that this cost is high considering the responsibilities that the Department has to discharge. We are, therefore, unable to accept the argument that physical supervision by central excise officers is too expensive a mode of collection of duty on manufactured articles. We are of the opinion that the existing system is advantageous both to the manufacturers' interests and to the administration alike, and that even the provision in regard to the compulsory allotment of quarters to the central excise staff (on payment of rent, of course) will, if viewed in this light, be accepted as salutary.

Difficulties of Match Factories

20. It has been represented to us that the present central excise rules cause hardship for the small scale manufacturers of matches. The main points of complaint relate to:
(a) the requirement of security for the bonds and
(b) pre-payment of duty.

Withdrawal of Security Deposit

21. It has been stated that there was no provision in the Matches (Excise Duty) Act and Order of 1934 for the deposit of security by the manufacturers of matches. There were special safeguards such as the requirement that the store room for the deposit of matches pending payment of duty would be under Government lock and that receipts and issues would be made only under the excise officer's supervision. While retaining these special features for matches, the consolidated Central Excise Act and Rules, 1944, which replaced the special enactment for matches also extended to it the requirement of security which was of a general character applicable to other excisable goods where the store rooms were not under Government lock. The interests representing the small scale match factories have represented that this imposes a severe strain on the financial resources of small units and deters persons of small means from setting up factories. They have argued that Government revenue is adequately safeguarded by the fact that the store rooms for finished matches are under Government lock, and matches cannot be removed except under the excise officer's supervision. They have, therefore, urged the withdrawal of the provision in the rules requiring security to be furnished by manufacturers of matches.

22. We observe that the contention that there was no provision for demanding security under the old excise procedure is incorrect. Section 25 of the Matches (Excise Duty) Order, 1934, provides that every holder of a licence for the manufacture of matches or splints and veneers shall furnish such security as may be demanded by the Collector for the observance of the conditions of the licence and for the payment of duty. Nevertheless, there is force in the contention that adequate safeguard for revenue is provided by the fact that matches have to be stored, pending payment of duty, only in godowns which are under excise custody. Further, we observe that for similar bonds to be executed by licensees of warehouses for the storage of tobacco, there is provision for a bond with surety even though the warehouses are in the custody of the owners and there is no continuous excise supervision as in the case of matches. We, therefore, recommend that the alternative of a bond with surety should be provided for the manufacturers of matches as a measure of relief for the small units.

Deferred Payment of Duty

23. The excise duty on matches is realised in the

* J. Harvey Perry: Taxation in Canada (P. 344).

form of banderols which are required to be affixed to boxes of matches before removal from factories. The banderols are purchased from treasuries either on payment of cash or on credit. For purchase on credit, a bond is required and payment of the value of the banderols in cash is insisted on before removal of the matches from the factories.

24. It has been represented that the excise duty on matches amounts to 50 per cent of the wholesale price and it is a hardship to small units with slender resources to find the funds for payment of the duty before sale of the matches and a suggestion has been made for a system of deferred payment of excise duty in such cases.

25. We appreciate this difficulty experienced by cottage factories. The necessity for replenishment of the funds locked up in payment of excise duty before removal of matches from the factories makes them accept whatever prices are offered, and this reduces their bargaining power. We, therefore, recommend that a system of payment of excise duty in arrears may be introduced as a measure of relief to the cottage factories. We understand that a similar concession was granted to the tea industry as a temporary measure when it was faced with a crisis. It may be laid down as a condition of the concession that a bond with security or surety to cover the outstanding amount should be executed and the factories may be required to deposit the duty in respect of all removals during a month not later than the last day of the following month.

Unmanufactured Articles

26. In the case of unmanufactured articles excise control commences at the stage of cultivation. Every grower is required to make a declaration in respect of all land upon which the products are to be grown before making use of any land for growing such products. Those who cultivate ten acres or more are required to make this declaration in writing and those who cultivate less are permitted to furnish the particulars orally to the central excise officer who visits him for the purpose. The growers are not required to obtain any licence in their capacity as growers but have to obtain a licence if they intend to cure the tobacco or coffee cultivated by them. The small scale growers who cultivate solely for personal consumption are not required to obtain a licence for curing because such products are exempt from duty. At the end of the harvesting season the growers are required to make a declaration of the products grown by them and here again the requirement of a written declaration is confined to those who cultivate ten acres or more.

27. Those who cure the products grown by them as well as those who are not growers but purchase the tobacco or coffee in the uncured state for curing are required to obtain a licence for curing. Those who cure less than 100 standard maunds are issued free licences whereas those who cure more have to pay a licence fee of Rs 5 per year. The curers are required to furnish returns of the quantities actually cured by them and here again those who cure less than 100 standard maunds are permitted to make oral returns. As soon as the products are cured, they have to be cleared by the curers either on payment of duty or by transfer to a private or public bonded warehouse. Where, however, a curer is not able to dispose of the products in this manner and prefers to retain the products with him awaiting an opportunity for good prices, he may do so by obtaining a licence for a curer's bonded store room.

28. All those who deal in unmanufactured tobacco, i.e., wholesale and retail dealers, brokers and commission agents, manufacturers of tobacco products, and owners of bonded warehouses for the storage of tobacco pending payment of duty are licensed and are required to maintain accounts. Persons licensed to keep warehouses are required to execute bonds with surety or security for the due payment of duty. Th amount of the bond is fixed on the basis of the capacity of the warehouse. The movement of unmanufactured tobacco exceeding two seers can take place only under a prescribed transport document.

Representation from the Trade

29. The representations made to us in regard to unmanufactured articles are mainly concerning tobacco, and we proceed to discuss the important suggestions and complaints.

Disposal of Tobacco by Growers

30. It has been suggested to us by certain interests representing tobacco merchants that the growers should be required to dispose of their crop immediately after curing instead of permitting them to retain it up to the end of June of the following year. Th main reason given for this suggestion is that it will reduce the chances of defrauding revenue.

31. As indicated earlier, the Central Excise Rules do require that the tobacco should be cleared on payment of duty or by transfer to a private or public bonded warehouse immediately after curing. There is, however, a provision permitting growers to retain their crop up to the thirtieth day of June in the year following that in which it was harvested, on obtaining a licence for a 'curer's bonded store room'. The object of this provision is to safeguard the interests of the growers and it enables them to look for an opportunity of getting good prices. We do not support the suggestion for withdrawing this facility because it would throw the growers at the mercy of the merchants.

Restrictions regarding Warehouses

32. A general complaint that has been made to us is regarding the elaborate accounts prescribed for warehouse licensees and restrictions placed on processing and blending and the collection of duty on losses incurred in various operations. We recommend that a simplified procedure should be evolved and account should be taken of the losses that have occurred in transport, storage and in processing.

Transport Control

33. The system of transport control in respect of tobacco has come in for a good deal of adverse criticism. It has been represented that the procedure for transport permits needs overhauling and simplification; that transport permits issued by Central Excise Officers should not be insisted on in areas which do not produce tobacco; and that expensive measures for controlling the movement of duty paid tobacco are unnecessary and that control should not go beyond the limit of identification of the duty paid character of the consignments.

34. We observe that the prohibition of transport of unmanufactured tobacco without a valid transport document is an important safeguard against evasion of excise duty. Tobacco is consumed in some form or other in all parts of the country and the only means of identification of licit and illicit tobacco is the prescribed transport document. We observe that no fee is charged for the issue of these transport documents and that, to facilitate trade, movement of tobacco is permitted in certain circumstances under the transport certificates and sale notes issued by dealers.

35. We do not consider that any radical simplification of the system of transport control is necessary or possible. In fact, the system cannot be said to be to the disadvantage of the trade; on the contrary, by helping to identify licit transport, it saves the trade from harassment.

CUSTOMS AND CENTRAL EXCISE

STATISTICAL APPENDIX B - STATEMENT I. ANALYSIS OF CENTRAL TAX REVENUE

(In lakhs of Rupees)

Year	Salt Revenue Excise Duties	Central Excise revenue
1920-21	465	285
1921-22	409	280
1922-23	458	344
1923-24	698	317
1924-25	469	395
1925-26	389	321
1926-27	414	202
1927-28	419	219
1928-29	490	247
1929-30	414	377
1930-31	404	429
1931-32	527	619
1932-33	641	671
1933-34	565	723
1934-35	518	1,035
1935-36	543	1,214
1936-37	577	1,364
1937-38	573	790
1938-39	542	872
1939-40	788	680
1940-41	528	962
1941-42	758	1,333
1942-43	884	1,291
1943-44	688	2,769
1944-45	688	4,129
1945-46	803	4,692
1946-47	692	4,370
1947-48	27	3,889
1948-49		5,166
1949-50		6,853
1950-51		7,150
1951-52		8,761
1952-53		8,473
1953-54		9,400

Sources: (1) Statistical Abstract upto 1950-51.

(2) Figures for 1951-52 and 1952-53 are from Budget Memoranda.

(3) 1953-54 figures are from Revenue Bulletin for March, 1954 published by the D.G.C.I. & S. and from the Budget Memorandum.

Notes: 1. The figures in all columns relate to gross revenue.

2. Central excise revenue from 1939-40 onwards includes cess on coal and coke and collection under Sugar (Additional excise duty) Ordinances 1943, 1944 and 1946.

STATISTICAL APPENDIX E - STATEMENT I. CENTRAL EXCISE REVENUE REALISATIONS BY COMMODITIES (EXCLUDING SALT)

(In lakhs of Rupees)

	Commodities	1920-21	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36	1936-37
1.	Cotton piece-goods	231	219	187	157	218	147											
2.	Motor spirit (including power alcohol)	54	61	65	65	79	77	96	121	155	281	268	348	394	443	491	532	559
3.	Kerosene			92	95	98	98	105	97	92	96	144	248	277	281	297	284	301
4.	Silver											17	23	1				
5.	Sugar (including khandsari)															97	159	259
6.	Matches															137	203	205
7.	Mechanical lighters																	
8.	Steel ingots															12	35	34
	Total Gross Receipts	285	280	344	317	395	322	201	218	247	377	429	619	672	724	1,034	1,213	1,363
	Refunds and draw-backs	2	9	13	18	7	11	2	1	1	2	6	6	14	18	20	31	29
	Total net receipts	283	271	331	299	388	311	199	217	246	375	423	613	658	706	1,014	1,182	1,334

(Contd.)

STATISTICAL APPENDIX E - STATEMENT I. (CONCLD.)

(In lakhs of Rupees)

	Commodities	1937-38	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53	1953-54
1.	Motor spirit (including power alcohol)	136	125	113	188	178	263	293	290	233	181	127	133	168	198	203	196	262
2.	Kerosene	82	68	50	71	65	70	54	44	35	26	25	20	22	28	26	24	33
3.	Silver																	
4.	Sugar (including khandsari)	334	424	249	393	673	491	669	641	570	479	443	631	710	658	849	991	1,433
5.	Matches	201	218	225	229	296	332	473	556	652	444	482	729	744	804	861	935	878
6.	Mechanical lighters								2									
7.	Steel ingots	37	38	42	50	54	51	59	52	52	46	48	46	52	54	61	63	60
8.	Tyres					35	56	83	115	127	75	105	199	358	405	610	438	495
9.	Tobacco						2	965	1,728	2,082	1,895	1,872	2,530	2,588	3,179	3,540	3,395	3,324
10.	Vegetable product							94	111	133	129	101	194	218	219	249	278	281
11.	Betelnuts								131	184	85	29						
12.	Coffee								17	34	38	28	49	50	80	77	64	79
13.	Tea								150	190	210	305	365	250	340	432	338	212
14.	Cloth												89	1,321	981	1,633	1,343	2,158
15.	Cement																	17
16.	Soap																	7
17.	Rayon or art silk																	2
18.	Footwear																	7
19.	Miscellaneous								22	37	18	12	25	27	37	32	40	44
	Total Gross Receipts	790	873	679	931	1,301	1,265	2,690	3,859	4,329	3,626	3,577	5,009	6,508	6,983	8,573	8,105	9,292
	Refunds and drawbacks	23	7	28	13	17	11	275	315	55	80	51	18	66	151	205	145	100
	Total net receipts	767	866	651	918	1,284	1,254	2,415	3,544	4,274	3,546	3,526	4,991	6,442	6,832	8,368	7,960	9,192

Sources: (1) Combined Finance and Revenue accounts upto 1945-46.

(2) Central Board of Revenue thereafter.

Notes: (1) Total receipts from 1940-41 onwards do not include cess on coal and coke and collections under Sugar (Additional Excise Duty) Ordinances 1943, 1944 and 1946.

(2) The figures upto 1946-47 relate to undivided India. The figures for Part B States are included only from 1950-51.

STATISTICAL APPENDIX F - STATEMENT III. CLEARANCE OF EXCISABLE MANUFACTURED TOBACCO FOR DUTY

I CIGARS AND CHEROOTS

Tariff Class						1948-49	1949-50	1950-51	1951-52	1952-53	1953-54
								Nos. (00)			
Cigars and cheroots of which the value per hundred											
Exceeds			Does not exceed								
Rs.	A.	P.	Rs.	A.	P.						
30	0	0			0	330	322	219	147	60	66
25	0	0	30	0	0	404	287	380	525	201	51
20	0	0	25	0	0	761	727	1,029	807	602	603
15	0	0	20	0	0	2,732	1,985	2,249	2,199	2,121	1,873
10	0	0	15	0	0	5,801	4,349	5,416	6,877	6,543	6,219
5	0	0	10	0	0	28,533	22,016	22,391	35,204	33,620	31,947
2	8	0	5	0	0	125,724	87,943	82,646	87,350	85,316	80,008
1	4	0	2	8	0	434,853	369,553	381,762	777,282	775,445	587,517
0	14	0									
	from 1-3-51										
0	12	0									
	from 1-3-44		1	4	0	4928,219	5289,300	5562,609	6205,751	5415,747	4010,347
0	10	0									
	from 1-4-43										
	Total					5527,357	5776,482	6058,701	7116,142	6319,655	4718,631

II. CIGARETTES

Cigarettes the value of which per thousand											
								Nos. (millions)			
Exceeds			Does not exceed								
Rs.	A.	P.	Rs.	A.	P.						
50	0	0				26	60	62	48	51	46
40	0	0	50	0	0	85	192	530	1,438	1,329	1,296
30	0	0	40	0	0	1,434	1,240	864	14	3	31
25	0	0	30	0	0	682	407	374	268	223	162
20	0	0	25	0	0	4,813	4,379	4,572	4,983	4,006	4,189
15	0	0	20	0	0	2,733	1,518	162	337	284	367
10	0	0	15	0	0	2,422	4,037	5,894	2,691	1,973	2,061
			10	0	0	4,895	4,811	8,439			
7	8	0	10	0	0	}		280	5,918	4,408	5,116
	.	.	7	8	0*	}		426	5,258	6,250	6,507
	Total					17,090	16,644	21,603	20,955	18,527	19,775

Source: Central Board of Revenue.
Note: The figures upto 1946-47 relate to undivided India. The figures for Part B States are included only from 1950-51.
*From 1-3-51; prior to which date the lowest slab was 'not exceeding Rs. 10.'

STATEMENT IV. COFFEE: ACREAGE, PRODUCTION AND CLEARANCE FOR DUTY

Year	Acreage	Production	Clearance for duty	Rate of duty
1	2	3	4	5
	Acres	lbs.(000)	lbs.(000)	Re./lb
1944-45	108,012	25,969	13,428	0 2 0
1945-46	107,677	33,781	26,996	0 2 0
1946-47	105,367	21,861	31,088	0 2 0
1947-48	106,926	21,739	20,036	0 2 0
1948-49	111,393	29,586	25,157	0 3 0
1949-50	116,088	30,886	28,441	0 3 0
1950-51	218,743	41,448	42,062	0 3 0
1951-52	224,366	48,287	39,212	0 3 0
1952-53	N.A.	52,895	36,923	0 3 0
1953-54	N.A.	64,960*	42,346	0 3 0

Source: Central Board of Revenue.
Notes: 1. The figures prior to 1947-48 relate to undivided India. The figures for Part B States are included only from 1950-51.
2. There were 34,273 coffee estates and 33,975 growers in 1951-52.
* Estimates.

STATEMENT V. KEROSENE: NUMBER OF UNITS, RATE OF DUTY, PRODUCTION AND CLEARANCE

Year	Number of units	Rate of duty			Production	Clearance for duty
1	2	3			4	5
		Re./Gal.			Gals(000	Gals(000)
1940-41		0	2	$9\frac{3}{4}$	41,774	
1941-42		0	2	$9\frac{3}{4}$	36,115	
1942-43		0	4	6	24,660	
1943-44		0	4	6	18,940	
1944-45		0	4	6	17,004	15,832
1945-46		0	4	6	14,013	11,775
1946-47		0	3	0	13,945	13,531
1947-48		0	3	0	13,837	13,639
1948-49	3	0	3	0	11,120	10,863
1949-50	3	0	3	0	11,747	12,184
1950-51	4	0	3	0	14,905	14,730
1951-52	2	0	3	0	13,907	14,018
1952-53	1	0	3		14,402	13,194
1953-54	1	0	3		17,007	17,661

Source: Central Board of Revenue.
Notes: 1. The figures prior to 1947-48 relate to undivided India. The figures for Part B States are included only from 1950-51.
2. The 'number of units' figures in this and subsequent statements relate to units working in March.

STATEMENT VI. MOTOR SPIRIT (INCLUDING POWER ALCOHOL): NUMBER OF UNITS, RATE OF DUTY, PRODUCTION AND CLEARANCE

Year	Number of units			Rate of duty	Production Gals.(000)			Clearance for duty Gals.(000)		
	Motor spirit	Power alcohol	Total	Rs./ Gal.	Motor spirit	Power alcohol	Total	Motor spirit	Power alcohol	Total
1	2	3	4	5	6	7	8	9	10	11
1940-41	..	..	..	0 12 0	24,116		24,116	..	..	..
1941-42	..	..	..	0 12 0	24,403	Included	24,403	..	..	..
1942-43	..	..	..	0 15 0	25,398	in col. 6.	25,398	..	..	..
1943-44	..	..	..	0 15 0	33,906		33,906	..	..	..
1944-45	..	..	..	0 15 0	31,543	135	31,678	20,872	124	20,996
1945-46	..	..	..	0 15 0	24,488	1,330	25,818	23,788	1,206	24,994
1946-47	..	..	..	0 12 0	21,176	1,924	23,100	22,461	1,956	24,417
1947-48	..	..	..	0 12 0	16,207	2,123	18,330	15,765	2,074	17,839
1948-49	4	9	13	0 12 0	14,393	3,011	17,404	14,640	2,997	17,637
1949-50	5	11	16	0 15 0	15,894	3,543	19,437	15,293	3,058	18,351
1950-51	5	15	20	0 15 0	16,748	4,420	21,168	17,594	4,458	22,052
1951-52	5	16	21	0 15 9	16,674	5,953	22,627	15,917	5,767	21,684
1952-53	5	16	21	0 15 9	16,121	6,769	22,890	15,054	6,744	21,798
1953-54		N.A.		0 15 9	17,548	9,001	26,549	N.A.	N.A.	26,594

Source: Central Board of Revenue.
Note: The figures upto 1946-47 relate to undivided India. The figures for Part B States are included only from 1950-51.

STATEMENT VII. SUGAR: NUMBER OF UNITS, RATE OF DUTY, PRODUCTION AND CLEARANCE

Year	Sugar (Vacuum Pan)				Sugar (Khandsari)			
	No. Of units	Rate of duty	Production	Clearance for duty	No. Of units	Rate of duty	Production	Clearance for duty
1	2	3	4	5	6	7	8	9
		Rs/Cwt.	Cwt.(000)	Cwt.(000)		Rs/Cwt.	Cwt.(000)	Cwt.(000)
1940-41	..	3 0 0	23,324	..	..	0 8 0	392	..
1941-42	..	3 0 0	16,767	..	..	0 8 0	558	..
1942-43	..	3 0 0	20,397	..	..	0 8 0	319	..
1943-44	..	3 0 0	21,522	..	..	0 8 0	428	..
1944-45	..	3 0 0	16,976	19,410	..	0 8 0	516	586
1945-46	..	3 0 0	19,125	19,581	..	0 8 0	342	357
1946-47	..	3 0 0	16,352	15,666	..	0 8 0	425	377
1947-48	..	3 0 0	16,540	14,438	..	0 8 0	381	391
1948-49	121	3 0 0	19,357	20,443	448	0 8 0	395	425
1949-50	130	3 12 0	19,521	19,144	434	0 8 0	432	432
1950-51	142	3 12 0	21,688	18,522	516	0 8 0	420	421
1951-52	141	3 12 0	25,859	22,161	618	0 8 0	572	548
1952-53	126	3 12 0	28,757	26,159	486	0 8 0†	156	181
		+1 6 0*						
1953-54	142	3 12 0	26,626	30,216	..	..	..	..

Source: Central Board of Revenue.
Notes: The figures upto 1946-47 relate to undivided India. The figures for Part B States are included only from 1950-51.
*From 6th November 1952 to November 1953.
† Abolished from 15th July 1952.

STATEMENT VIII. MATCHES: NUMBER OF UNITS, RATE OF DUTY, PRODUCTION AND CLEARANCE

(in thousand gross boxes)

Year	No. of units	Rate o duty per gross of boxes																Production			
		40's			50's			60's			80's			Bengal lights & others				40's	50's	60's	80's
		Rs	As.	P.	Rs	As.	P.	Rs	As.	P.	Rs	As.	P.	Rs.	As.	P.					
1940-41	N.A.	1	0	0	..	..	..	1	8	0	2	0	0	0	5	0		18,367	..	2,922	1,287
														0	4	0					
1941-42	Do.	2	0	0	2	8	0	3	0	0	4	0	0	0	10	0		8,915	..	6,462	950
														0	8	0					
1942-43	Do.		"			"			"			"			"			2,467	9,144	2,749	415
1943-44	Do.		"			"			"			"			"			624	2,462	9,203	257
1944-45	Do.		"			"			"			"			"			488	2,336	15,582	196
1945-46	Do.		"			"			"			"			"			508	2,094	19,747	143
1946-47	Do.		"			"			"			"			"			183	14,879	5,686	118
					from 1-8-46																
					1	12	0														
1947-48	Do.		"			"			"			"			"			8	23,997	1,842	74
1948-49	Do.	abolished from 29-2-48			2	8	0		"			"			"			263	4,338	20,402	22
1949-50	232 Class A	2	0	0		..		3	0	0		..			"			242	..	19,924	..
	B	1	15	6		..		2	15	3		..						4,489		1,285	..
	C	1	15	0		..		2	14	0		..						373		15	..
1950-51	238 Class A	2	0	0		..		3	0	0		..			"			492	..	20,190	..
	B	1	15	0		..		2	14	6		..						5,767		2,315	..
	C	1	14	0		..		2	13	0		..						663		22	..
1951-52	235 Class		"						"			..			"			656	..	21,110	..
																		6,582		2,495	..
																		739		28	..
1952-53	189 Class		"						"			..			"			605	..	22,385	..
																		8,744		2,855	..
																		717		22	..
1953-54	183 Class		"						"			..			"			434	..	19,722	..
																		10,508		1,818	..
																		611		29	..

(Contd.)

STATEMENT VIII. (CONCLD.)

(in thousand gross boxes)

Year	No. of units	Production			Clearance for duty						
		Others	Bengal lights	Total	40's	50's	60's	80's	Others	Bengal lights	Total
1940-41	N.A.	..	142	22,718	N.A.	..	N.A.	N.A.	N.A.	N.A.	N.A.
1941-42	Do.	..	128	16,455	"	N.A.	"	"	"	"	"
1942-43	Do.	26	29	14,830	"	"	"	"	"	"	"
1943-44	Do.	4	46	12,596	"	"	"	"	"	"	"
1944-45	Do.	71	..	18,673	431	1,658	15,091	198	70	..	17,448
1945-46	Do.	132	..	22,624	450	1,251	19,280	136	130	..	21,247
1946-47	Do.	..	275	21,141	158	14,265	5,983	127	..	273	20,806
1947-48	Do.	..	421	26,342	8	23,919	1,617	74	..	422	26,040
1948-49	Do.	..	150	25,175	176	4,388	20,358	22	..	138	25,082
1949-50	232	..	692	27,020	261 4,455 373	..	19,980 1,222 15	..	..	450	26,756
1950-51	238	..	356	29,805	456 5,775 681	..	20,159 2,287 21	..	..	394	29,773
1951-52	235	..	268	31,878	657 6,655 736	..	21,151 2,412 29	..	..	276	31,916
1952-53	189	..	387	35,715	613 8,522 697	..	21,952 2,755 22	..	..	401	34,962
1953-54	183	1	484	33,607	445 10,591 617	..	19,732 1,935 29	..	1	481	33,381

Source: Central Board of Revenue.
Notes: (1) The figures upto 1946-47 relate to undivided India.
(2) The figures for Part B States are included only from 1950-51.
(3) A - Factories whose output exceeds 500,000 gross boxes per year.
B - Factories whose output does not exceed 500,000 boxes per year but exceeds 100 gross boxes per day.
C - Factories whose output does not exceed 100 gross boxes per day.
(4) There were 7 class A, 88 class B and 94 class C Factories in 1952-53.
(5) Matches of type Bengal lights containing not more than 12 matches per box are charged 10 annas per gross from 1941-42. All other matches are charged 8 annas for every 1,440 matches or fraction thereof from 1941-42.
(6) The figures of small units are not separately available prior to 1949-50. The concessional rates of duty for these units have therefore not been indicated for those years.

STATEMENT IX. STEEL INGOTS: NO OF UNITS, RATE OF DUTY, PRODUCTION AND CLEARANCE

Year	No. of units	Rate of duty			Quantity	
					Produced	Cleared for duty
1	2	3			4	5
		Rs/Ton			Tons (000)	Tons (000)
1940-41	..	4	0	0	1,285	..
1941-42	..	4	0	0	1,363	..
1942-43	..	4	0	0	1,299	..
1943-44	..	4	0	0	1,339	..
1944-45	..	4	0	0	1,193	..
1945-46	..	4	0	0	1,295	..
1946-47	..	4	0	0	1,200	1,053
1947-48	..	4	0	0	1,191	1,191
1948-49	7	4	0	0	1,162	1,162
1949-50	7	4	0	0	1,309	1,309
1950-51	8	4	0	0	1,402	1,377
1951-52	8	4	0	0	1,507	1,477
1952-53	8	4	0	0	1,560	1,549
1953-54	10	4	0	0	1,501	1,501

Source: Central Board of Revenue.
Note: The figures up to 1946-47 relate to undivided India. The figures for Part B States are included only from 1950-51.

STATEMENT X. TYRES AND TUBES: NO OF UNITS, RATE OF DUTY, PRODUCTION AND CLEARANCE

Year	Tariff class	No. of units	Rate of duty	Quantity	
				Produced Nos. (000)	Cleared for duty Nos. (000)
1	2	3	4	5	6
			Ad Valorem		
1941-42			10%	6,113	N.A.
1942-43			"	6,483	N.A.
1943-44			"	7,807	N.A.
1944-45	Tyres		"	3,496	N.A.
	Tubes		"	4,349	N.A.
	Total			7,845	
1945-46	Tyres		10%	3,911	3,775
	Tubes		"	4,846	4,797
	Total			8,757	8,569
1946-47	Tyres		10%	3,952	3,514
	Tubes		"	5,093	4,547
	Total			9,045	8,061
1947-48	Tyres		10%	4,152	3,943
	Tubes		"	5,372	5,159
	Total			9,524	9,102
1948-49	Tyres		15%	4,893	4,777
	Tubes		"	4,907	5,010
	Total	6		9,800	9,787
1949-50	Tyres	Motor tyres and tubes	30%	4,910	4,656
	Tubes	Others	15%	3,920	3,740
	Total	7		8,830	8,396
1950-51	Tyres		As in 1949-50	4,551	4,405
	Tubes		As in 1949-50	5,872	5,472
	Total	8		10,423	9,877
1951-52	Motor tyres		30%	872	825
	Motor tubes		30%	852	810
	Other tyres		15%	4,168	4,210
	Other tubes		15%	4,779	4,591
	Total	7		10,671	10,436
1952-53	Motor tyres		30%	657	581
	Motor tubes		30%	583	532
	Other tyres		15%	4,276	4,012
	Other tubes		15%	4,039	4,120
	Total	7		9,555	9,245
1953-54	Motor tyres		30%	834	741
	Motor tubes		30%	709	649
	Other tyres		15%	4,867	4,802
	Other tubes		15%	5,218	5,450
	Total	7		11,628	11,642

Source: Central Board of Revenue.
Note: The figures up to 1946-47 relate to undivided India. The figures for Part B States are included only from 1950-51.

STATEMENT XI. VEGETABLE PRODUCT: NO OF UNITS, RATE OF DUTY, PRODUCTION AND CLEARANCE

Year	No. of units	Rate of duty	Quantity	
			Produced	Cleared for duty
1	2	3	4	5
		Rs/Ton	Tons (000)	Tons (000)
1943-44		5 0 0	2,109	N.A.
1944-45		5 0 0	2,475	2,427
1945-46		5 0 0	2,773	2,763
1946-47		5 0 0	2,653	2,702
1947-48		5 0 0	1,987	1,909
1948-49	19	7 0 0	2,769	2,785
1949-50	34	7 0 0	3,300	3,122
1950-51	47	7 0 0	3,257	3,106
1951-52	43	7 0 0	3,868	3,571
1952-53	38	7 0 0	4,221	4,013
1953-54	48	7 0 0	4,112	4,011

Source: Central Board of Revenue.

Note: The figures up to 1946-47 relate to undivided India. The figures for Part B States are included only from 1950-51.

STATEMENT XII. TEA: NO OF UNITS, RATE OF DUTY, PRODUCTION AND CLEARANCE

Year	No. of licensees	Rate of duty	Production	Clearance for duty
1	2	3	4	5
		Re./lb.	lbs.(000)	lbs.(000)
1944-45		0 2 0	450,180	109,467
1945-46		0 2 0	488,279	139,613
1946-47		0 2 0	556,531	157,906
1947-48		0 2 0	538,877	203,296
1948-49		0 3 0	529,756	549,689
1949-50	1,924	0 3 0	543,692	537,222
1950-51	2,223	0 3 0	624,524	624,114
1951-52	2,069	0 3 0	651,193	627,576
1952-53	2,066	0 3 0	632,497	609,952
1953-54	2,179	L.T. 0 1 0	633,845	624,297
		P.T. 0 4 0		

Source: Central Board of Revenue.

Notes: (1) The increase in quantities in Col. 5 from 1948-49 has been due to the revised procedure under which tea meant for export was also required to pay excise duty which was later transferred to the Customs head on export.

(2) The figures up to 1946-47 relate to undivided India. The figures for Part B States are included only from 1950-51.

(3) 'L.T.' represents loose tea and 'P.T.' represents package tea.

STATEMENT XIII. CLOTH: NO OF UNITS, RATE OF DUTY, PRODUCTION AND CLEARANCE

Year	Tariff class	No. of units (Composite mills)	Rate of duty	Quantity	
				Produced Nos. (000)	Cleared for duty Nos. (000)
1	2	3	4	5	6
1949-50	Superfine		From 1-1-49 25% *ad valorem*	320,642	306,933
	Fine		From 1-3-49 6.25% *ad valorem*	845,406	734,259
	Medium		From 1-3-49 Re 0-0-3 per yard	1,901,063	1,664,978
	Coarse		From 1-3-49 Re 0-0-3 per yard	317,047	211,247
	Total	225		3,384,158	2,917,417
1950-51	Superfine		From 1-2-50 20%	186,064	152,482
	Fine		From 1-2-50 5%	1,192,617	678,232
	Medium		Re 0-0-3 per yard	1,946,200	1,362,430
	Coarse		Re 0-0-3 per yard	406,867	286,218
	Total	263		3,731,748	2,479,362
1951-52	Superfine		20% *ad valorem*	293,533	272,617
	Fine		5% *ad valorem*	1,275,998	1,114,631
	Medium		Re 0-0-3 per yard	2,352,059	2,117,807
	Coarse		Re 0-0-3 per yard	372,395	316,425
	Total	265		4,293,985	3,821,480
1952-53	Superfine		20% *ad valorem* or from 9-5-52 Re 0-3-0 or Re 0-3-6 per yard	200,945	187,181
	Fine		5% *ad valorem* or from 9-5-52 Re 0-0-7 to Re 0-1-0 per yard	1,147,566	966,985
	Medium		Re 0-0-3 per yard	2,759,006	2,675,984
	Coarse		Re 0-0-3 per yard	533,446	390,217
	Total	265		4,640,963	4,220,367
1953-54	Superfine		Re 0-3-3 (Re 0-2-0 from 25-10-53) per yard	290,709	260,391
	Fine		Re 0-1-3 per yard	757,736	662,004
	Medium		Re 0-0-3 per yard	3,248,828	2,850,837
	Coarse		Re 0-0-3 per yard	602,470	443,833
	Total	279	(plus additional duty of Re 0-0-3 per yard on all varieties with effect from 15-2-53)	4,899,743	4,217,065

Source: Central Board of Revenue.
Note: The figures for Part B States are included only from 1950-51.

REVIEW ARTICLE*

RADICALS IN SEARCH OF AN IDENTITY?

Suneeti Rao

Reality is a many splendoured totality. Man gains knowledge and understanding about it from his own social and cultural background and mental framework. His personal world view crystallizes through his own reading of reality. This view may not be the same as those acquired by others from their individual standpoints. For instance, the Marxists believe in only one kind of inequality, *viz*, that caused by the economic relations of class and disregard discrimination on the grounds of gender, race, caste, etc. Hence their standpoint is different from that of feminists or of scheduled castes who have been putting up with inequities arising from gender and caste. Conception of social reality from any one standpoint alone is incomplete. In fact, there is nothing amiss about the plurality in the understanding of social reality from diverse standpoints.

Further, grasping or understanding social reality is an ongoing process. In the process of grasping itself the context changes and a new horizon of knowledge and understanding is opened. Hence there can never be a permanent, definitive solution, such as marxist-socialism, to all problems. 'What we call society is not a transparent social structure where things and people can be ordered and harmonised according to the principles of far-sighted doctrines or historical lesson-teaching' [Mercer, quoted from Ray, 1993, p. 1253].

However, those in power address the issues before them from their own understanding of the reality and inflict their world view on the powerless, or 'the subalterns', as the only right path to development. Such assertion is the derivative of 'fetishism', 'an immensely complex social, psychological and ideological phenomenon', with 'a connotation of irrationality and mysticism'. Paradoxically, Marx himself explains 'fetishism' as follows : in capitalist society, by virtue of the prevailing social relations, the illusion of fetishism stems from 'the substitution of one thing for another ... together with a loss or lack of awareness, a forgetting, that the substitution has taken place'. Such substitution and 'forgetting' result in domination of human beings by inanimate objects, processes and ideologies. [See Kerruish, 1991, p. 154 & p. 166]. In India after Independence, the marxist-socialist path of progress itself has been a fetish of the rulers. Most of the cherished developmental projects have substituted people, and it is forgotten by all, the rulers in particular, that benefit from development is intended to reach the people not the projects, however impressive they may be. Projects are for the people and not *vice versa*. Progressive social legislations such as abolition of *zamindari* and of untouchability have been enacted and it is taken for granted that all such social evils are on the decline, without any inquiry into their implementation. The natural corollary of such dismal, skewed development is the protest from the suffering victims. The story of such protests is the theme of Omvedt's volume under review. The new social movements (NSM) are essentially protest movements of the powerless against the state-directed developmental effort, which is ingrained in socialist tradition,. The NSM want to awaken the powerful rulers who are obsessed with imposing their own subjective 'socialist' standpoint on them (the protesting weak). The NSM, thus, throw a challenge to the existing social order, to the establishment and to the state.

Origins of the NSM

In the 1970s and the 1980s these movements were conceptualised as 'nonparty political formations' which brought together women's organisations, nonparty mass organisations, such as the *Jharkhand Mukti Morcha* and 'voluntary agencies' or NGOs. Also they are perceived as

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*Omvedt, Gail, 1993; *Reinventing Revolution: New Social Movements and the Socialist Tradition in India*, Pp. xvii+353; M.E. Sharpe, New York.

'grass roots' movements basically apolitical. With a broad overall organisation, structure and ideology aiming at social change, they are autonomous movements of social liberation. They have entirely different causes and radically conflicting priorities. They themselves, through the ideologies they generate, define their respective exploitation and oppression, the system that generates these and the way to end such exploitation and oppression. Yet, peculiarly, they have been oriented as single-issue efforts or one-point programmes, i.e., diverse, separate movements, seeking their own distinct goals. How are they to bring about total social revolution? Omvedt, however, is silent on this hiatus in the thinking of the NSM. Possibly, she hopes that with the success of all the NSM together, the dawn of revolution will ensue.

Ideology of the NSM

Ideological shibboleths of Marxism are not acceptable to the NSM. To them most of these are now 'fossilized' dogmas. For instance, Marxists adhere to the view that when one section of the population produces a surplus whose use is controlled by another section, exploitation takes place. And it is exploitation which gives rise to class conflict. Classes may be defined in terms of 'exploitation' - those who produce the surplus as against those who appropriate it. All societies having a significant surplus social product are divided into the dominant and the subordinate or the ruling and the ruled classes. Alternatively, classes may be defined on the basis of how individuals are related to the means of production, i.e., in terms of 'property', that is, those who own the means of production and those who are nonowners. The economic interests of these classes are diametrically opposed to one another and the political-legal-ideological superstructures of such societies almost invariably support the interest of the dominant class, since these structures are themselves determined, to a large extent, by forces and relations of production taken together. But this narrow notion of *class* does not hold good under Indian conditions. For, firstly, the two definitions do not identify coinciding groups, that is, some owners of the means of production could be exploited, whereas some nonowners would appropriate the surplus. As Robert Dahl pointed out as early as in 1971, it is not that *class* is unimportant, but that when considered as somehow more 'real' than other bases of social differences, the importance of the latter (e.g., language, religion, race) is undermined [Dahl, 1971, Pp. 106-107]. In the Indian context, such criteria as gender, caste, place of residence, ethnic identity, etc., provide vital grounds for discrimination. Secondly, unlike the traditional Marxists, the NSM do not consider 'the means of production as abstract, ahistorical, nonclass and nongender things given by the bourgeois society which can simply be separated from their private property form and used by the proletariat and other toiling masses' (through state ownership). Instead the NSM take them as historically specific forms in which the system is internalized. That is why these movements (the NSM) are challenging the validity of the existence of some of the means of production, and the relation of these to nature and the industrial science and technology which take nature as an enemy to be overpowered (p. 170). In short, exploitation in India cannot be ended just by following in the footsteps of the then USSR or communist China.

Curiously, the NSM have hardly ever clashed with the capitalists. Their battle is against the state. The tribal environmentalists among the NSM know that state power in the hands of the working-class would not prevent the abuse of their ecology and the consequent degradation of the quality of their life. Similarly, the *Dalits*, the former untouchables, the backward communities (BCs) from the organised labour, experience the same discriminatory treatment from their *savarna* comrades in the unions as the one meted out to them by the management. The wives of the union leaders and those of the managers suffer similar indignities at the hands of their menfolk. If the villages are deprived of such amenities as electricity, tap water, telephone, hospitals, schools, roads, transport, etc., or if the procurement prices

for agricultural products are set low, the rich as well as the poor peasants undergo hardships. Hence the 'monocolour' character of communism and its tendency to ignore 'nonclass' issues (p. 236) are rejected by the NSM. They search for alternatives, for 'reinventing revolution'. To them 'revolution' is a concept with heuristic value. Socialism merely means a new order of human society. It is of necessity objective. It need not transform itself into a subjective point of view of the working-class and through this means fuse the objective laws of historical development to their subjective awareness. Historical development can take place in new legal and social orders, the form of which need not necessarily be the Marxist-communist form. The NSM's conception of historical materialism is a philosophically-inclined general outlook on life and the world. Also, they contend, modes of development cannot be reduced to any laws for they just represent a given historical phase [Badaloni, 1979, Pp. 80-109].

Strategies of the NSM

The NSM, in spite of being revolutionary in their aspirations and antisystemic in their impact, and consequently, using a wide variety of militant, law-defying strategies of action, distinguish themselves from those based on 'taking up the gun', from the various armed outfits. They have been using in their struggles traditional cultural symbolism by radically reinterpreting history. They have been as strongly opposed, as the left parties, to the only force in the country that, in their view, can legitimately be called 'fascistic', Hindu fundamentalism.

Analysis of the NSM

The full analysis of the NSM requires a modified Marxist, i.e., a historical materialist, inquiry into the contemporary capitalist system as well as a probing into the interaction between these movements and 'the politics of the period, including the issues raised by the ethnic-nationality movements, e. g., those of Assam and Punjab' (p. xvi). This is what Omvedt has undertaken to do in this study.

The author has selected from a number of movements for such causes as women, prostitutes, ecology, science, health, civil liberties, child labour, bonded labour, tribals and so on, the following four for detailed treatment :

1. the anticaste movement,
2. the women's movement,
3. the farmers' movement, and
4. the environmental movement.

History of the Socialist Tradition in India

The monograph consists of four parts which are further divided into eleven chapters with more than a dozen very useful tables inserted in between, besides an introduction outlining its contents. The first chapter enunciates the first and the most famous of India's 'social movements', the national struggle for Independence, that inspired many generations of Indians. The pre-Independence roots of both 'old' and 'new' social movements as well as of 'traditional' and 'alternative' socialism are examined in this chapter. The birth of the Indian National Congress in 1885 may not be anti-imperialist but soon the then 'extremist' Congressmen such as Bal Gangadhar Tilak declared "*Swaraj* is my birthright, and I will have it". Bhagat Singh, the youthful hero proclaimed: "Revolution is the inalienable right of mankind. Freedom is the imprescriptible birthright of all. The labourer is the real sustainer of society", (p. 6).

This fervent nationalism sowed the seed of socialist tradition. Omvedt is, however, more concerned about the other pre-Independence parallel movements in India, ushered in by middle and low castes, peasants and tribals. They had often defined themselves in ways contradictory and opposite to such mainstream nationalism of the Indian intelligentsia, particularly when it was obscured by the 'Hindu' definition of Indian identity. They were, no doubt, local movements limited to particular regions, such as Jotiba Phule's demand for *Balistan* or a Tamil fisherman, Singaravelu's Labour and Kisan Party of

Hindustan, (Self-Respect Socialist Party) or Dr. B.R. Ambedkar's struggle for the liberation of the untouchables, or the 'Telangana' movement of 1946-1950; but what they emphasised was their 'non-Aryan' identity in contrast to Hindu one. For they were apprehensive of the *Swaraj* being receded to an orthodox *Hindu Raj*, where they would be as oppressed and exploited as before. Such '*dalit* and nonbrahman movements of the 1920s and 1930s were invariably maligned as pro-British', since they opted for their own battles against the system rather than joining the national struggle for Independence (p 21). The author analyses the role of the Indian Marxists and Communists in these movements and comes to the conclusion that they not only totally neglected these movements but at least in one case prevailed upon Singaravelu, the leader of one such movement, to dissolve it and join the National Congress (p. 17). As regards the socialist tradition of the Indian National Congress before Independence, Omvedt observes that Tilak, and in any case his followers, were reluctant to involve workers into the nationalist movement, and that, it was Gandhi who really made the Indian National Congress into a mass organisation (p. 7). Her observation regarding Tilak, however, does not sound precise, in the sense that Tilak might have neglected workers' or other downtrodden masses' struggles for improving their plight, yet he did endeavour to get their support for the cause of national Independence by converting the Hindu religious festivals into mass political rallies, for instance, through 'the political recruitment of the God *Ganapati*' [Cashman, 1990, Pp. 37-60].

Gandhi too, according to Omvedt, initially did not find anything wrong in the dominance of the traditional elite 'who idealized the hierarchical caste society and saw reform in simply removing the "excrescence" that had developed.' For he believed in *Ram-Raj* as his ideal for a free India, where the established elite would be the trustees of the deprived masses. He looked forward to the regeneration of the self-sufficient Indian village. He was totally opposed to industrial capitalism and was a sort of the first 'Green' India had; he definitely was a 'critique of capitalism but from a precapitalist perspective'. Those 'who placed their hopes in modern technological progress' and 'whose vision of India was ultimately based on a community defined in terms of the low-caste majority', challenging the dominance of the high caste elite opposed Gandhi's paternalistic *Ram-Raj*. Ultimately, however, he did succeed in absorbing the energies of *dalits*, women and other ostracized groups into the Congress structure but the Congress came to be controlled by high castes with intellectual-bureaucratic tradition and with orientation to a capitalist industrial development. Similarly, Congress leaders like Nehru began to define nationalism as 'Indian nationalism ... a nationalism that stood *above* or *outside* the different religious communities and took as its unit the individual Indian citizen, a pure nationalism unsullied, in theory, by the 'primordial' pulls of caste, religion, community, etc., ... rigorously conceptualized only in opposition to the notion of communalism' and to the identities involved therein such as the *Hindu Mahasabha* and the *Rashtriya Swayamsevak Sangh* (RSS) (p. 25). These attempts resulted in the abstractly secular assertion of Indian nationalism, which only the intelligentsia could appreciate, not the masses. Today the *Sangh Parivar*, the political heir to the *Hindu Mahasabha* and the RSS, denounce the same as pseudo-secularism. For it only masked the hold of high-caste Hindu males in the Congress. It could neither prevent the emergence of a separate Muslim state, Pakistan, nor co-opt the *dalits*, and the *shudras*, i.e., the 'other backward castes' (OBCs), 'the people of my village' (p. 27). Although Gandhi was marginalised, his own Hindu paternalistic world-view, accepting hierarchy, fostered statism. Omvedt quotes Frankel, '...the ideological preferences of the first generation of nationalists (were) an unlikely blend of the religious morality preached by Mahatma Gandhi and the materialistic philosophy advanced by Marx, ...' (p. 31).

The then Indian Marxists, however, failed to perceive the implausible character of the nationalism as well as of the socialist path of development promoted by the Congress-ruled state in the later decades.

The NSM in the Post-Independence Developmental Decades

State power became the way to wealth. The author is critical of the developmental process in India, which she describes as 'Gandhian-Socialist collaboration, sharing the loot'. There exist several studies offering statistical evidence of how the incessant increases in salaries of the government employees and of employees in the public sector as well as enhancement of the allowances and perks of the legislative representatives curtail the developmental expenditure and how compulsions of electoral politics rather than the needs of the weaker sections decide the strategies for expending whatever is left of it. C.T. Kurien, [1992], in his recent study pertinently points out that the growth process in India has in its train led "only a small minority (to) the pole of 'riches and plenty', whereas an overwhelming majority who toil are to be seen at the opposite pole of 'deprivation and hardship'. At the root of this depressing situation ... is the grossly unequal distribution of social power, emanating from the extreme inequality in ownership and control of (productive) non-labour resources" [Nadkarni, 1992, p. 774]. Omvedt is concerned here with movements (the NSM) that aim at revolutionizing this situation in their own way. The NSM have just contempt for such concepts as justice or social engineering which to them are bourgeois charity. She refers to the Rudolphs' study of India's political economy, *In Pursuit of Laxmi*, [1987], with *Laxmi*, the goddess of wealth, symbolising the Indian state. The study confirms that state planning and government programmes are less means of development than ways of channelising the surplus to nurture a whole range of intermediary looters along the way (p. 32). Prime Minister Rajiv Gandhi conceded categorically that no more than 15 per cent of the money his government earmarked for anti-poverty programmes actually reached the poor [Shah, 1993].

Omvedt also assails this seedy side of development. According to her, Tornquist's concept of 'rent capitalism', a system in which political bosses profit from charging 'rent' for the use of what are legally public resources, describes the reality of rural India (p. 32). In support she quotes from a satirical popular song by a NSM peasant organiser in Maharashtra that in order to obtain from the state official, the *satbara*, (a 7/12th extract, the term for a land record), '7 bottles of whisky and 12 chickens' are needed to bribe him, literal translation of the term *satbara* being 'seven' and 'twelve' (p. 33).

The discriminated groups, the real subalterns, were offered, what the Congressmen call, the 'four anna socialism, an apt way of characterising India's post-Independence path of development', as against the 'twelve annas' of the leftists, meaning that the difference between the policies of the Congress and of the Marxists was only of degree and *not* of kind (p. 28). Omvedt scoffs at the 'four anna socialism' of the Congress as well as the 'twelve annas' of the Marxists many a time in her treatise.

The Four Movements: 1. The Anti-Caste Movement

Omvedt traces the career of the anti-caste movements since 1917, from Satyashodhak to *Dalit Panthers*, to *Dalit Sangharsh Samiti* (DSS now JSS - *Jana Sangharsh Samiti*), to pro- and anti-Mandal agitations, with a good deal of statistics. She chalks out the developments in the three states of Maharashtra, Bihar and Karnataka primarily in detail. Her inference is that the anti-caste movement brings forward two questions: (i) a combined analysis of 'caste and class', and (ii) recognition of *dalit* identity.

The Marxists insist that the 'caste war' is in reality a 'class war', while the Ambedkarites emphasise that a 'caste war' *by itself* is progressive. How? There is no answer. In fact, Ambedkar himself had put forward the first 'class-caste' line, but the Ambedkarite *Dalits* took almost a casteist position. Leftist *Dalit* youth were weaned away from Marxism by fear of the Brahman leftist leadership and by their deep-rooted suspicion that the left support was only hypocritical.

With the possibility of creating alternate leadership as well as alternate symbols for India, 'not Rama but Shambuk ...not Arjun but Ekalavya', *dalits* set their eyes on state power, on ushering in *Dalitistan* where they would not only inherit all that 'modernity' could offer but also have equal right in the process of carrying forward the heritage of ages (Pp. 74-75). Incidentally, the definition of *Dalits* is widened here. They include all the downtrodden, marginalised, exploited and excluded sections of one of the poorest countries of the world, such as *atishudras*, *shudras* and tribals. They argue that their 'main contradiction' is with caste Hindus, *savarnas*, particularly, Brahmanism. They want to fight it in alliance with all low, non-brahman castes, the OBCs. *They* claim that their fight is not just for 'reforms' but against the system. Yet, as Omvedt rightly points out, they have conceptualised neither socially, nor politically, nor economically the system in a different way. No agenda for abolition of caste consciousness or a blueprint for an alternative casteless society have emerged in any of their movements. Their leaders favour 'state socialism', industrialisation, large-scale agriculture, public planning and change of 'exploitative relations of production' through land reforms. Like the Marxists they are equally unaware of the camouflaged exploitation in the relation between agriculture and industry, between rural and urban and between man and woman. They have merely changed the leftist language of attack from 'bureaucracy/ capitalism/ feudalism' to *'tilak, taraju talwar'*, meaning *'Brahmins/ banias/ kshatriyas'*. There is no discussion about how ultimately these *savarnas* will come to accept the *avarnas* as equals.

Omvedt refers to the battle for renaming the Marathawada University at Aurangabad, Maharashtra, after Dr. B.R. Ambedkar. This proposal was accepted by the Maharashtra Legislature way back in 1978. It was vehemently opposed by the caste Hindus at that time. In the ensuing violence scores of people, mostly *Dalits*, lost their life. No efforts have been made since then to bring about an amicable settlement. Naturally, now when the better-off among the *Dalits* have succeeded in getting it changed, the caste Hindus are up in arms against the *Dalits*. None bothered to find out the real reason for such militant opposition which Omvedt, too, attributes to the casteist bias of *savarnas* against the *Dalits*. Sadly, the real *Dalits*, the outcastes in the villages and hamlets, are being burnt alive in their shanties and huts. And they just don't know for what cause they are made to sacrifice and suffer. Their children usually do not have in their vicinity even a properly functioning primary school to go to.

Ironically, this issue also demonstrates how illusory the unity between the *shudras* or the OBCs and the *atishudras*, i.e., the BCs, is. For here the former have joined hands with the caste Hindus against the *Dalits*. Similarly, the parties that justify *Hindutva* are too, divided on the issue. It only confirms that our policies regarding caste and religion have failed so far to integrate our society. Omvedt is silent on all these aspects of the caste problem.

2. The Women's Movement

Regarding the women's movement, Omvedt charts its course from 1972-73. She regrets that women's issues play no ideological role in the Marxist- socialist struggles against oppression, although women are the main victims of exploitation. The reasons are the same as in the anti-caste movements, their traditional dogmatic preconceptions such as, women's issues are 'non-class' issues, only a part of the mainstream; their household unpaid work is not *really* work resulting in surplus; subsistence production is not 'social production'; feminism is a bourgeois concept; etc. Their formula is, therefore, similar 'additive' - 'class and caste and gender/patriarchy'. Patriarchy is thus simply viewed as a cultural part of the oppressive and exploitative capitalist superstructure. In contrast, the autonomous women's movements of the feminists strive for redefining 'exploitation'. Women are equally exploited in the process of reproduction, just as the workers -landless agricultural labourers, tenants, share croppers, industrial labourers - are in the process of

production. The society must recognise this exploitative relationship between man and woman, transform the 'family system' accordingly, abolish hierarchical structures and ideas between sexes and, thus, usher in a revolution in the social relations in society. The feminists aspire to redefine not only woman herself, her role, her image, but also the kind of society she wants to live in. Consequently, they undertake causes like men's help in domestic housework, drunkenness among men, and so on. In addition both, leftist parties as well as independent women's organisations, wage a battle against the usual gender discriminatory practices like violence against women in the form of rape, dowry death, etc. Also both claim women's right to property, share in political power through reservation, particularly exclusive right to village governance (Pp. 93-94). The ideological difference between the two kinds of women's organisations is that the party-affiliated organisations demand equality whereas the independent feminist movements, generally confined to urban environs, believe in the separate, autonomous identity of women. In addition, Omvedt speaks of yet another conception of the women's movement, that is women, particularly poor rural women, as powerful agents of change (Pp. 199-200). They try to get 'all-women panels' elected in local self-government bodies, and, in the words of Sharad Patil, 'dream of restoring matriarchy'. Omvedt, quoting Vandana Shiva and Gabriele Dietrich, talks of '*stri shakti*' and 'a women-directed alternative development'. She praises the role of the rural Indian women, who have been in the forefront of ecological struggles, like the *chipko* movement.

Omvedt perceives the threat of contemporary religious fundamentalism to women's interests but hardly comments on the Marxist-socialist apathy towards Muslim women's problems - their personal law totally unjust to women or the obnoxious custom of veil *(burkha* or *purdha*). Nowhere in the book under review cognizance is taken of the fact that '...if women's rights are a problem for some modern Muslim men it is neither because of the Koran nor the prophet, nor the Islamic tradition, but simply because those rights conflict with the interests of a male elite. This elite faction is trying to convince us that their egotistic, highly subjective and mediocre view of culture and society has a sacred basis ...Islam ...' [Mernissi, 1993, Preface, p. ix]. Also certain issues of great concern to women are not discussed in the volume, e.g., the controversy regarding sex determination tests (amniocenteses) as a means of discarding unwanted female fetuses; the dichotomy between the two factions - the pro-life (anti-abortionist) and the pro-body (woman's right over her body and, consequently, her exclusive right to opt for abortion, if she so wishes); or the difference of opinion among the women's groups about the bill introduced in the Parliament for accepting the 'irretrievable break-down of marriage' as a ground for granting divorce. Nor is there any reference to the agitations for legislative measures against such social evils as female infants being neglected, malnourished and at times killed. Further, Omvedt does not say whether the new women's movements work for improving the lower rates of literacy or employment among women.

3. The Farmers' Movement

The statistics of the 'development decades' of the post-1950s, says Omvedt, show clearly that 'the most significant and increasing differentiation seems to have been between industry and agriculture, and between the organised and unorganised sectors'. She corroborates her point by quoting from Dandekar [1990, 1987], "The agricultural sector is not only bearing the burden of the residual population but, in the past eight years, has further suffered from a differential rise in prices.... The per capita NDP (National Domestic Product) in the unorganised nonagricultural sector in 1970-71 was 1.8 times the same in the agricultural sector and the gap widened to 2.3 in 1980-81. In the organised sector the per capita NDP was already 4.2 times the same in the agricultural sector and the gap widened to 5.7 in 1980-81.... Herein lies an explanation why, while food is available and at least half the population

lives on a nutritionally inadequate diet, the per capita consumption of food grains does not increase."

Omvedt regrets that few Marxists took notice of Dandekar's arguments or investigated the said hiatus. But there is nothing surprising in their attitude. As analysed by Maria Mies and others, the third world colonial countries like India are usually exploited both ways, through the imperial plundering of the natural resources of that country and through the extremely low payments for the labour of peasants, miners, plantation workers and forest-dwellers. Such low-paid labour is viable because of the domestic, unpaid labour of women at home which does not produce surplus value but does produce surplus for the family. After attaining Independence most of these countries have accepted a development model which emphasizes modern industrialisation. The investment capital necessary for this purpose must be generated either through foreign aid or through indigenous exploitation of some strata of society. Peasants and female workers are usually the targets of such exploitation as their labour provides 'socially invisible subsistence and commodity production'. Actually, women are doubly exploited. Their *unpaid* household work, especially in the rural areas, results in surplus for the family and, thereby, makes low wages of the male members in the family viable for survival. Additionally, as female workers they receive lower wages than their male counterparts. This *low-paid* labour of theirs generates surplus for the economy. Thus, after the victory in national liberation or in revolutionary struggles in socialist countries, the poor peasants and women are 'impoverished' and 'marginalised' and not 'proletarianised'. For they constitute the informal, unorganised sector which produces goods and services at much lower costs than the organised, formal sector; the free-wage labourer is the proletarian 'hero, from whom the Marxists expected the revolutionary transformation, ... and (who) cannot easily be *squeezed* for the generation of more surplus', [see Mies, 1986, p. 197]. Due to the low level of development, the surplus in agriculture and industry is too low to pay every worker an adequate wage. The way-out sought is a kind of splitting up of the economy into a modern, capital-intensive, socialised, formal, organised sector with well paid labour and a subsidiary, labour-intensive, private, technologically backward, informal, unorganised, non-priority sector with cheap labour and disguised unemployment. In India, the farmers' leaders call this divide as India versus Bharat. It coincides with the urban versus rural or agriculture versus industry divide. Agriculture has been aptly described as 'a parking lot for the poor', [see Dandekar, 1993]. 'How is it that ... the men and women who sowed the seeds, harvested the crops and minded the herds have perished for lack of food? How is it that they died of hunger in those parts of the world, whereas most of the people who do not produce foodstuffs were spared?' [Spitz, quoted in Olpadwala, 1993]. According to a recent report, the largest absolute numbers of severely malnourished people in the world are to be found in India and Bangladesh, in spite of their dramatic advances in food production [Olpadwala, 1993]. India is self-sufficient in food grains since the mid-1970s, and holds food reserves of 20 million tonnes or more and is a net cereal exporter. And still these two countries account for the lion's share of the 40,000 children of one year or less that UNICEF estimates die daily on the planet from causes that are entirely and only hunger-related. In India, 70 per cent of the population lives in villages and half of it is landless. Even many who own land cannot produce enough to feed their families. A survey of 50,000 households in eastern India revealed that 'nearly half the families in West Bengal and one-third in Orissa did not produce enough food to feed their families for even *one* month in the year'. This situation of world hunger (food insecurity) has, as per the report, two roots -failure of public policy (detrimental public policy) and the destructive effect of regressive, stifling social structures, both present in the third world countries as well as in the industrialised countries. These are subsumed by Omvedt under one expression - 'the realities of uneven statist-directed capitalist development in India' (p. 114).

They include faulty economic and social policies, investments diverted to non-priority and luxury needs, agricultural production shunted to cash and export crops, food crops, when grown, given over to producing non-essential items like wines and liquors, animal feed, etc., and to other non-human consumption, 'deliberate' sabotage of public food distribution systems by the wealthy, the capture of the benefits of technological progress by large landowners, uses and misuses of international food aid as an instrument of gaining control and influence around the world, keeping prices of basic agricultural commodities artificially low to favour the more concentrated and politically volatile city populations and the rural poor physically and psychologically brutalised. The farmers' movement rightly agitates for eradication of rural poverty *not* through development but only through remunerative prices for their products. The unorganised labour residing in slums in towns and cities are rightly referred to as 'refugees from Bharat to India'. They could be the project-displaced persons who were hunted out of their hereditary habitats in the countryside for constructing dams that would supply water and electricity to the urban population. Once Bharat is 'liberated' from India, a 'nonlooting accumulation of capital that would be balanced and decentralized, with a village-centered agro-industrial economy', would abolish mass rural poverty (p. 121). That is what the farmers' leaders believe and they intend to use their 'power ... both as a producer and a consumer' not only in their struggles, like *rasta roko*, fasting, mass rallies, even 'delinking Bharat from India', but also in elections.

Finally, Omvedt points out that this alienation between 'India versus Bharat' and the crushing of the farmers' movement in Punjab, with the help of state terrorism, had taken the hue of Hindu-Sikh communal divide. The Sikh religious fundamentalism and the demand for a separate state of Khalistan were the aftermath of the state-procurement of grain, particularly wheat, from the Punjab at low prices and the resultant discontent of the farmers. All may not subscribe to this last point of hers.

Class Analysis and Peasants in India

Initially, capitalism, especially agricultural capitalism, an inevitable transitory phase in the progress towards socialism, is established when relations of production on the land are transformed and the peasantry is freed to form a working class of wage labourers - a process called 'primitive accumulation'. Emergence of a class of wage labourers is thus central to the orthodox Marxist tenet which has been confronted by the NSM. The crucial criterion for production relations to be termed as capitalist, commoditisation of labour involved in it, is absent in Indian villages - it is not free of all extra-economic constraints, to be sold to the best paid employer. As pointed out by Rudra [1987], caste, feudal values and taboos, including territorial limitations do not allow an agricultural labourer to work for the best-paid employment. Consequently, the NSM point out that 'the accumulation of the earth's resources for the increase of capital has imposed many facets of a money economy and the logic of production for profit, on regions throughout the world, but not primarily by turning the people of those regions into wage labourers. ... (In India) the process did not dissolve the caste system and the hierarchy and occupational specialisations imposed by it; rather, it used it ... in a way that often increased hierarchies and internal inequalities. As a result, many of the struggles waged by the toiling masses against the system easily took caste and community form' (p. 20). 'Much of the focus of the new movements is on 'community' rather than 'class', even when their demands are economic' (p. 312). Their struggle is an 'economistic' one but not 'class struggle' (p. 125), as defined by Lenin and Mao who are irrelevant to the Indian scene. Lenin and Mao divide rural population into classes, such as 1) landlords, 2) rich peasants, 3) middle peasants, 4) poor peasants, and 5) agricultural labourers. Lenin believes that the former three (exploiters) purchase labour while the latter two (exploited) hire it out, whereas Mao claims that the first three classes, owning a marketable surplus of product, belong to the haves, as against the last two have-nots.

Such division of the conventional type is inapplicable to the Indian village vista. In order to stress exploitation, the NSM divide rural population in India with two parameters, class and caste (Table 3.1, p. 53). Yet the Marxist notion of 'class' is no longer valid here, as it is, to a certain extent, in the anti-caste movement and the women's movement- by adding 'caste' and 'gender' to 'class'. For the NSM assert the unity of the peasantry against urban India.

The farmers' movement poses one of the strongest challenges not only to the traditional Marxist theory of social change but also, equally, to the Indian state. The reasons accorded by the farmers' leaders are: cheap raw material for factory production and cheap food for urban population are provided by extracting both the surplus labour of the peasants and the produce of the land; as a result, capital accumulation has been taking place primarily from agriculture; and the basis of such accumulation is not so much property ownership, as per the Marxist concept of 'surplus value', but the force and violence used by the state. The farmers' movement is for retaining the accumulated surplus at the village level by remunerative prices for their products. Its thrust is decentralist and antistate, contrary to the basic tenets of Marxism - large scale 'collective' production and state ownership of the means of production. The question of price policy for agricultural products is, at any rate, highly controversial. The leftists argue that any rise in price would benefit only surplus-producing big farmers, the *kulaks*, who have a lion's share of marketed output. On the contrary, not only the urban poor but agricultural labourers and small farmers, too, who buy food grains would be adversely affected.

4. The Environmental Movement

The environmental movement coincides with the farmers' movement, they can be viewed as two major wings of a broad peasant movement in India. They have arisen in protest against the incorporation of the peasantry into the world capitalism. The main cause of ecological destruction is the demand for natural resources generated by the consumption of the rich, in India and abroad as well. It affected the people of all castes, classes and genders. Thus, the environmental movement in India is not necessarily for the 'green' or 'clean earth' or for saving the mankind's heritage and endangered species in flora and fauna, as in the west, but for the very survival of the tribals and the very poor.

If India is divided into three basic types of agro-ecological zones - the highly inegalitarian but productive coastal deltas and river valleys; the relatively more egalitarian plateaus and grasslands; and the most egalitarian hilly and mountain areas - the farmers' movement arose *primarily* in the second region while the environmental movement arose *primarily* in the third region. This did give it frequently a more of a tribal component and a more egalitarian community base. Consequently, Marxists support the environmental agitations readily, they being considered as movements of subsistence-oriented poor peasants. As against this, the farmers' movement is viewed as belonging to rich and middle peasants who harvest cash-crops. However Marxists do not subscribe to the ideological orientation of the environmentalists. Nevertheless the environmentalists' challenge to the modern 'industrial system' is championed by Gandhians wholeheartedly. Similarly, they are joined by the urban, upper middle-class intellectual activists, sensitised by the global ecological concerns.

The movement consists of diverse localised agitations. Its mass base consists of those adversely affected by developmental projects, such as, nomads, fishworkers, tribals, and non-tribals, because their immediate survival is endangered in the face of a threat to their traditional way of life. Their attitude to forests has always been subsistence-oriented. They resented the commercial forestry imposed on their lives, as vehemently as the introduction of fertilizers, HYVs and insecticides by nontribal agricultural experts. They have always identified development with displacement, deprivation of their access to forests through state-ownership and a

subordinate status. It is estimated that out of the 40 million project-affected persons to be resettled and rehabilitated since Independence, 20 million are tribals, although they constitute only 7.5 per cent of the population. Naturally their movements have a thrust, challenging the system as inherently destructive, and pose an alternative, sustainable model of development. They have a kind of embryonic 'people's plan' with numerous village-based reconstruction projects - small dams, percolation tanks, etc., and low water-using cropping patterns. Even after the completion of the International Year of the Indigenous Populations (1993), the state has not legally recognised the tribals as the indigenous people of India, despite they being called *adivasis*, the original inhabitants since ages. Consequently, they cannot claim the rights of the indigenous people as prescribed by the UN.

Encounter with Political Power

The leaders of the other NSM consider direct involvement in politics as a sure way of leading the movement to disaster. They see themselves more as 'pressure groups', to maintain 'a balance of power' among the big political parties (p. 160). Their economic struggles are directed against the state, yet their thrust is *not* at taking the state power but at 'eroding the state', at surplus retention by the producers, at democratic participation and decentralisation, and 'their concern (is) ... how at each point on very long commodity chains a greater percentage of the surplus can be retained' (p. 309). The farmers' movement, as well as other NSM, thus endeavour for opportunity for self-determination. They demand the right to equal participation in all social decision-making processes that affect one's life as well as the right of equal access to the means of self-realisation. This is how they reconstruct Marx's concept and theory of freedom. Peffer's analysis of Marxism [1990] would ordinarily provide them with an apt definition for the freedom they are striving for. To him freedom comprises both, *negative freedom* and *positive freedom*. The former means freedom from undue interference by others and a maximum system of equal liberties, while the latter means freedom to determine one's own life to as great an extent as is compatible with a like opportunity to all. This dichotomy resembles broadly the one in our Constitution, that between the Fundamental Rights and the Directive Principles of State Policy. The NSM are the agitations of people who want to translate these Directives for development into reality on their own terms, yet when they strive to do so their Fundamental Rights are, many a time, ruthlessly interfered with by the state. They are, thus, bereft of both negative as well as positive freedom. And hence their challenge is to the state.

In the later years of 1980s, Omvedt finds all the NSM being irrevocably pulled into the political sphere. The NSM are movements of groups that are exploited through the new processes of contemporary capitalism, e.g., peasants being *forced* to produce for capital through market exploitation *managed by* the state; peasants and forest-dwellers being *victimized* by environmental degradation ensuing from the developmental projects of the state; etc. 'The primary basis of capital accumulation was the exploitation of peasant production ... outside the realm of capitalist production and commodity exchange and *mediated mainly by force* (of the state), not the ownership of property' (emphasis added) (p. 125). The Indian state was so powerful, so much at the centre of the exploitative machinery weighing on people's lives, that the NSM activists had to confront the state, whether they were challenging the domination of the bureaucracy by high castes, patriarchy, big dams and development projects or low prices for agricultural products. The plunge toward politics, however, took varying forms for the different movements (p. 259). All the same, their thrust has all along been on the establishment of a nonexploitative - casteless, nonpatriarchal, nonlooting - sustainable society (p. 314), not just on taking over state power but on creating a new kind of state, with 'a new strategy regarding the relationship between men and women and between people of different castes and nationalities ... (regarding)

alternative ways of organising and managing the production processes, alternate concepts of agriculture and of agriculture/ industry/ ecology, and alternative health care' (P. 170). They 'are oriented in one way or another more to equality than to growth' (p. 309). Tragically, despite their redefining of 'politics', 'reinventing revolution', and thereby posing 'broad challenges to the Indian state, they ... were unable to transcend their frameworks to give a real shape to overall political developments' (p. 171). Similarly, at present in India 'there is no political formation that is expressing the direction that is implied in the thrust' of the NSM (p. 300) and 'politics' has remained an extremely problematic sphere for all of them (p. 310).

Indian Marxist Intellectuals and the NSM

Omvedt, after mapping out the above four movements in detail, directs her attention to the interaction between the NSM on the one hand and the Marxist intellectuals as well as the leftist parties in India on the other. Marxist intellectuals designate the NSM as 'popular movements' or more precisely as 'petty-bourgeois populist movements' (p. 160). They criticise the NSM for their vocabulary of decentralization, plurality, autonomy and participation (p. 300). Omvedt does not find it necessary to give any rationalization for such criticism since she is advocating the cause of the NSM. Traditional Marxism, as Ray [1993] confirms, has always been 'an arch-contestant of decentralisation. ... The concept (decentralisation), following the line of libertarian leftism, came into vogue ... in the 70s (in Europe). The politics of the street saw the emergence of numerous marginal groups. These preached self-management, local control and politics of personal transformation, spurred on by a peculiar mix of western Marxism, Maoism and Lacanian psychoanalysis' (p. 1,256). But the primary question of the Marxists is to what extent these revolts and deviations pose a challenge to the ruling class. The struggles of the powerless should aim at changing the structures that create such power relations. Marx was committed to revolution, to changing the world and raising the working class to power. He had to conduct a clear-sighted, rigorous and ruthless scrutiny of all popular movements, their weaknesses and strengths as well as of the classes, especially of the working class, in order to help steel it for battle. Mere socialist sensibility or confused, emotional espousals of the people's causes or heroic resistance by the oppressed do not guarantee by themselves a break from the hegemony of elitist historical practices. '(T)he decisive importance of the master-slave dialectic - of the specificity and historically ubiquitous form of class struggle' cannot be denied [Perusek, 1993].

However, the advent of the modern technology (sophisticated control system, personal computers, automation, etc.) has resulted in momentous transformations in economic mechanisms, institutional forms and cultural consciousness in the modern world. One of them is the emergence of the sprawling middle-class stratum, whose status and income are derived from services of many kinds. Consequently, the traditional working class and the scale of manufacture itself have continued to shrink. Finance capital has become substantially independent of industrial capital. Again central to the organisation of economic and political resources is not merely the nation state but the international and sub-national surroundings. The entire cultural fabric of organised capitalism - big cities, big factories, the dominance of wage-labour in social life - has been profoundly reconstituted. The impact of these developments is the disappearance of the manufacturing proletarian. Of course, it is felt mostly in the First World (industrialised West) rather than in the Third World developing countries like India. In fact, it is argued that this genre has not been eliminated at all. It has been transported to the Third World, where all the sweat-trades are being carried out and which is now being exploited. Omvedt never refers to the ramifications of the modern technology for India. Maybe because, the urban manufacturing labour, as long as it is organised, is not the exploited *class* in India. The law being pro-labour and the trade

policy protectionist, have accorded it a domineering position so far. With the acceptance of the policy of liberalisation and also of the Dunkel proposals, the scenario is likely to change.

Leftist Parties in India and the NSM

The NSM have all emerged during the period between 1972 and 1985, a period in which the solutions of 'traditional socialism' are so overwhelmingly discredited that they are faced with the task of 'reinventing revolution' (Pp. xv - xvi). They are aware that 'the first wave of socialist movement in India (has) nearly exhausted its transformative force'. [See Yadav, 1993, p. 2,199.] The NSM have, nevertheless, taken 'Marxism' not as an enemy to be destroyed, but as a fallen entity to be reformed, and they have carried on often angry dialogues with it (p. 315). For, after all, the theoretical tendency of the NSM activists is that of Marxist intellectuals. In fact, Yadav [1993] asserts : 'Different constituencies of this (Indian left) movement have acted at different times as focii of various other emancipatory ideas and actions in Indian public life - civil rights, women's emancipation, defence of minorities or other marginalised sections of society, promotion of literacy, popular culture and literature'. Thus it is generally not accepted that they are distinctly *new* social movements.

Moreover, credit for the achievements of the NSM is grabbed by the traditional socialists, both from the ruling Congress and the leftist parties, who claim responsibility for the legitimisation and ideological presence of a pro-people, anti-oppression and anti-exploitation culture in public life in India, conducive to the NSM. Unfortunately, such legitimisation is merely apparent and not real, since the high platitudes have never been translated into reality.

The Marxist parties in India, in contrast to the Marxist intellectualdom, accept the broad issues of the NSM, but only partially. Hence, they accord the NSM qualified support. The party workers want, for example, in the case of the farmers' movement debt relief to be dispersed to the poor peasants exclusively, or, in the case of anti-caste movements, to add 'economic criteria' for caste-based reservations. Again the NSM activists, particularly their leaders, are strongly attacked by the parties as 'kulak' or 'CIA-inspired' or 'serving the imperialist interests'. Naturally the NSM activists are sceptical of their support and reproach the parties for coming only to increase their political base or as leaders without mobilising the masses, 'generals without tanks' (p. 161). They also ridicule the leftist parties for 'their typical planner's faith in the possibility of remedying through governmental machinery what this machinery has itself been responsible for inducing' (p. 141). They, therefore, criticise the Marxist parties for 'revisionism', for coveting control or share in control of government (p. 162).

Conclusion

Finally, Omvedt sums up that the NSM arise 'on the ruins of earlier anti-systemic movements'. But it is only a part-truth. However aggressively they might attack the Marxist-socialist, they arise out of them, and they cannot forget this history. She is also aware that the life-span of the NSM, except the anti-caste movement, has been quite short, and that Marxism, both at theoretical and practical levels, is passing through a crisis. Yet she disagrees that the future of the NSM is bleak, that the anti-caste movements are for merely shifting dominance, lower castes challenging the higher ones at all levels, or that feminist movements would simply disintegrate the family or that tribals' or farmers' protests are a serious threat to nation-state. On the contrary, she is confident that these very crises hold the key to opening new doors. It seems her analysis is sound, in spite of certain skepticisms mentioned earlier, wherever pertinent. For, scientific laws of dialectical materialism, governing 'nature, society and thought', assert that concrete reality is not static. The conflict of opposites drives reality onwards in a historical process of constant progressive and qualitative change, both evolutionary and revolutionary, a process sometimes represented in the

triadic schema of thesis, antithesis and synthesis. Omvedt perceives such synthesis in the concerns of the NSM.

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BOOK REVIEWS

Guhan S. *The Cauvery River Dispute: Towards Conciliation*, Frontline Publication, Kasturi & Sons Ltd., Madras, 1993, Pp. VIII+78, Price Rs 50/-.

The chief content of the Journal of Indian School of Political Economy is to review developments in Indian economy, polity and society since Independence with roots in the British period, wherever relevant. Dr. Guhan's monograph on the Cauvery river dispute fits aptly into the content of the Journal: Commencing from the time the first agreement was signed in 1892 between the Mysore Princely State and the British Government of Madras, the author reviews succinctly the disputes, agreements and developments that have taken place on the Cauvery river since then.

The monograph is divided into seven chapters. The first five chapters provide an account of Cauvery irrigation development in Karnataka and Tamil Nadu, together with the disputes that have arisen, the agreements signed and the course traversed by the two States. Chapter six explores settlements of river disputes in India and abroad as also the practices, principles and law relevant to them. The last chapter makes suggestions for conciliation of the divergent stands taken by the two States. The eight annexures at the end of the book give the text of the agreements signed in 1892 and 1924 by the two States, as well as the draft proposals prepared by the Governments of India, Karnataka and Tamil Nadu between 1974 and 1981. Extracts from the Inter-State Water Disputes Act, 1956 have also been given in the annexure.

The Cauvery river, which flows from the Western Ghats to the Bay of Bengal, traverses 381 km in Karnataka, 357 km in Tamil Nadu and serves in between as a common boundary for the two States on an additional 64 km. The development of irrigation on this river has been divided into three phases - In the first phase irrigation was based on the run of the river and constructions on it were only of a regulatory or diversionary character. In the second phase, commencing from the 1892 Agreement between the two States, and also the 1924 Agreement, the Krishnarajasagar dam in Karnataka and the Mettur dam in Tamil Nadu were constructed on the river. The third phase, began from 1934 onwards, when disputes between the two States began, and are continuing to date. The disputes have arisen largely because of irrigation development in the upper reaches of the river in Karnataka, to the detriment of available water supply to Tamil Nadu, particularly since 1971. The dispute had engaged the two State Governments since the 1950s, until 1990, when it was referred to the Cauvery Water Disputes Tribunal. The author traces the history of the settlement efforts and negotiations that have taken place between the two States and also under the aegis of the Government of India, before finally placing the same before the Tribunal. The Tribunal's interim order in June 1991 created the 'worst, episode of conflict in the history of the Cauvery dispute' (p. 41), with violence spreading first to Karnataka and later to Tamil Nadu. In view of the historical nature of the dispute, a summary of the developments that have taken place is recounted below.

Phase - I

In the first phase, i.e. before 1892, in the old Mysore State (Karnataka), channels leading from the Cauvery river and its tributaries were laid for providing irrigation directly and through an extensive system of tanks - 15 anicuts were constructed on the main river and 21 on its tributaries and sub-tributaries. In Madras (Tamil Nadu), major structures on the Cauvery and the Coleroon rivers included the Grand Anicut, Upper Anicut and Lower Anicut while 38 other anicuts were built on the tributaries of the rivers. The bulk of the anicuts were to control flooding in the delta region of the Cauvery river. As early as in 1807, there was correspondence between the then Government of Madras and Mysore State on the latter State's use of waters of the Cauvery to the detriment of the interests of Madras. Schemes for irrigation development continued in Mysore State even during 1831-81 when the administration of the State was taken over by the British Government. A public works Department was set up in 1856 for the purpose. In 1866, a master plan was prepared for the restoration, improvement and extension of tanks and other irrigation works

in Mysore. The schemes were only partially carried out following financial stringency because of the 1877-78 famine. With the restoration of the Maharaja's administration in 1881, the irrigation works in the master plan were revived again in Mysore.

Apprehensions began to develop in Madras about the possible implications of the small but steady and extensive investment in reservoirs, anicuts and regulatory works in Mysore State. In 1870, the Madras Government raised its concerns with Mysore state. In 1890 a conference of the two Governments' representatives took place, followed by an exchange of proposals which culminated in the Madras-Mysore Agreement of 1892.

Phase - II

The Madras-Mysore Agreement of 1892 required that Mysore State obtain the previous consent of Madras Government before taking up the construction of any new irrigation reservoirs, or anicuts or tanks on the Cauvery river or its tributaries as specified in the various Schedules to the Agreement. The Madras Government was to normally agree to the proposals of the Mysore State, in all cases except where its prescriptive rights to the use of water, acquired or existing, were to be protected. The Agreement was however silent on entitlements to surplus waters once the prescriptive rights of Madras, however arrived at, were met. In course of time both Mysore and Madras viewed the Agreement as prejudicial to their interests. Mysore felt that irrigation development in its State was subjected to stranglehold of the undefined prescriptive rights of Madras; Madras felt that it had been deprived of any share at all of the available surpluses of water. The 1892 Agreement therefore left much scope for conflict.

Between 1910 and 1924, Mysore State and Madras Government had a continuous conflict over the construction of the Krishnarajasagar dam (Mysore) and the Mettur dam (Madras) on the Cauvery river. Both the projects had been formulated by 1910; this was followed by correspondence between the two Governments and the Government of India (GOI). In 1913, the Government of India appointed an arbitrator who gave his award (Griffin Award) in 1914. The Award was rejected by the Madras Government, as it 'afforded inadequate protection to Madras in respect of the surplus waters of the river and of further extensions of irrigation' (p. 12). GOI did not accept the contentions of Madras and in April 1916 conveyed its decision to ratify the award without modification. The Madras Government appealed to the Secretary of State in England against this decision. The Secretary of State upheld the appeal by Madras in November 1919 and gave the Mysore State the option to (a) appeal against the Secretary of State's decision, or (b) to enter into fresh arbitration, or (c) to arrive at a negotiated settlement with Madras. Mysore accepted the last of the alternative. Accordingly another round of negotiations were initiated in April 1920 which continued until 1924 when an agreement was signed by the two States.

The 1924 Agreement (i) permitted Mysore to build the Krishnarajasagar dam to a height of 124 ft above the river bed and to an effective capacity of 44.827 TMC ft; Mysore agreed to regulate the discharge through and from the Krishnarajasagar reservoir in accordance with the Rules of Regulation annexed to the Agreement. Mysore also agreed to limit the extent of additional irrigation permissible to 1,25,000 acres plus one-third of the area actually irrigated by channels in or prior to 1910. The State could also extend its irrigation by means of reservoirs on the Cauvery and its tributaries to an extent of 1,10,000 acres. (ii) Madras agreed to limit the new area of irrigation under the Mettur project to 3,01,000 acres and the capacity of the reservoir to 93.5 TMC ft. (iii) If Madras were to construct new storage reservoirs on the Bhavani, Amaravathy or the Noyil tributaries, Mysore could construct 'offset reservoirs' in each such case, of a capacity not exceeding 60 per cent of the new reservoirs in Madras. (iv) The most crucial clause of the Agreement was that 'the limitations and arrangements laid down in certain specific clauses of the Agreement were open to reconsideration, at the expiry of 50 years from the date of its execution' (p. 15). Thus, in the views

of Karnataka, the Agreement did not hold good after 1974.

Between 1924 and 1934, Mysore and Madras completed the construction of the Krishnarajasagar dam (1931) and the Mettur dam (1934), respectively.

Phase III: 1934 onwards

In the period 1934 to 1972, Karnataka had extended its irrigated area from 3 lakh acres to 4.4 lakh acres, while Tamil Nadu's irrigated area increased from 14.4 lakh acres to 20.8 lakh acres. In addition, Tamil Nadu was able to obtain a second crop over an area of 4.5 lakh acres through irrigation. Karnataka commenced work on a number of projects in the fifties and sixties, claiming that most of them had been approved by the 1892 and 1924 Agreements or were outside the scope of the Agreements. Most of these schemes were to come into operation in the 1970s and 1980s. By 1990, the irrigation potential created in the State was about 13 lakh acres, and utilisation at 11.2 lakh acres. Tamil Nadu contended that it had not been furnished with full particulars to satisfy itself that these projects were within the stipulated limits of the Agreements. It also argued that the ayacut and utilisation envisaged were far in excess of the allowances made in the 1924 Agreement for new irrigation in Karnataka. The irrigation and impounding of water under the new projects would cause material diminution of assured supplies to Tamil Nadu through the limited flows from the Krishnarajasagar dam. Also in intent and spirit the 1924 Agreement covered storages in non-scheduled rivers, only if they did not affect Tamil Nadu's prescriptive rights. Further, between 1972 and 1990, Tamil Nadu had confined itself only to a number of small schemes in sub-tributaries in the dry areas, having a total ayacut of 50,000 acres and utilisation of 7 TMC ft of water. The consolidated summary picture from major and medium irrigation works on the Cauvery in the two States was as follows (p. 21).

State	Area (Gross Lakh Acres)	Estimated Utilisation /Requirements for Utilisation (TMC ft)
Karnataka		
1901	1.11	27.2
1928	1.11	27.2
1971	4.42	110.2
1990	11.20	-
(ultimate estimation)	(21.38)	(322.8)
Tamil Nadu		
1901	13.45	366.9
1928	14.44	391.2
1971	25.30	494.6
1990	25.80	501.5

Karnataka had formally given up adherence to the Krishnarajasagar rules of regulation since 1974, as in its view, the 1924 Agreement expired after 50 years in 1974. Instead it followed a system of *ad hoc* releases of water to the Mettur dam based on seasonal conditions, irrigation needs in Karnataka, and quantum of waters impounded in the Krishnarajasagar dam and other new reservoirs. As a result, since 1974 the inflows of water in the Mettur dam ceased to be predictable or assured.

The Cauvery water dispute in the third phase began in the 1950s itself when Karnataka began work on the Kabini Project. Correspondence in this regard continued between Tamil Nadu and Karnataka until August 1968 when the first Ministerial level meeting took place between the Union Minister for Irrigation and Power, the Chief Minister of Karnataka and the Public Works Minister of Tamil Nadu. This was followed by five more meetings in 1970 but Karnataka declined to give any assurance to adhere to the 1924 Agreement or to suspend work on any of its projects. Between 1968 and 1990, twenty-one meetings were held with the Union Minister for irrigation by the disputing States and five bilateral meetings too, but to no avail. Draft proposals for amicable settlement were made by the Centre, while separate proposals were submitted by the two warring States between 1974 and 1990. Finally, the Government of India set up in June 1990, the Cauvery Water Disputes Tribunal under section 4 of the Inter-State Water Dispute Act, 1956. On appeal to the Supreme Court by Tamil

Nadu, the Tribunal gave an interim order on June 25, 1991, whereby it directed Karnataka to ensure that 205 TMC ft of water was made available at the Mettur dam from its reservoirs in a 12 month period from June to May effective from July 1, 1991 until the final adjudication of the dispute was made by the Tribunal. The releases were to be made on a week to week basis in a regulated manner from June to May. Finally, the Tribunal directed Karnataka not to increase its area of irrigation from the Cauvery waters beyond 11.2 lakh acres. Karnataka resented the Tribunal's interim award as it felt that the amount of water to be made available to Mettur dam was excessive and the restriction placed on extending the State's irrigated area unfair. The violence that broke out in Karnataka, and later in Tamil Nadu, was the after-effects of this interim order. The monsoons were very favourable during 1991-92 and 1992-93 and Karnataka was able to supply more water to Tamil Nadu at the Mettur dam than that prescribed by the Tribunal in its interim order. The Tribunal is continuing with its adjudication and a final award is yet to be given.

What would happen if the Tribunal's award was unacceptable to either of the two States? In principle, the Centre has powers to direct a State under Article 256 of the Constitution to comply with the award of a tribunal and to invoke Articles 365 and 356 where a State fails to do so (i.e., President's Rule). But these steps would be difficult to contemplate in practical and political terms. The author has pointed out that 'essentially the dispute relates to the sharing of the waters in a river that is already being almost fully utilised' (p. 58). Again, the dispute is more than a hundred years old. 'The only way out of this impasse is for both the States to draw back from their irreconcilable positions and seek a reasonable *modus vivendi* based on considerations of fairness and equity related to historical entitlements as well as current realities' (p. 60).

The author has pointed out that a settlement of the Cauvery dispute would need to address to the *continuous* sharing of waters, year after year and season after season, subject to fluctuations of water availability and need. It would be appropriate for the Tribunal to approach this problem by allocating on the basis of shares to the States concerned, i.e., in percentage or ratio terms. This would benefit all the States in years of good rainfall and cause proportionate shortfalls in bad monsoon years. At the same time, as the lower riparian, Tamil Nadu has to face a reduction in the ex-upstream availability of water to which it had been traditionally accustomed to. The State should seriously explore measures to augment its water supply through modernisation of its irrigation system, conjunctive use of its ground water resources in the delta region, improved farm water management practices, conservation of rain water going waste, drainage improvement in the tail-end of the delta, etc. (p. 60).

All the way back in 1971-72, Tamil Nadu had informed the Irrigation Commission that "The Cauvery Delta System, which has been in existence for a great many years, has become outmoded and inefficient, and that the cultivators at the tail-end do not get adequate water. The fact that irrigation is practised from field to field undoubtedly leads to the wastage of water. The normal drainage problems in the deltaic plain are aggravated by the fact that drainage and irrigation are both done through the same channels" [Jain, 1972, Vol. II, p. 379]. The State Government had drawn up a project estimated to cost Rs. 49 crore to be executed over a period of ten years for modernising the Cauvery delta. "The main proposals involved in the modernisation scheme are the improvement of headworks, desilting of the river, construction of regulators across the main river and branch rivers, and the conversion of bed dams into regulators. Selected reaches of rivers and channels will be lined, and pipe sluices provided at all open off-takes. Field channels will be constructed under the project down to blocks of 20 hectares. There will be a systematic development of ground water through deep 'duty' tubewells and filter points. The drainage will be improved and will be done through separate channels. The modernisation will also include the construction of roads and communications, and farm works, that is re-levelling and re-bunding of

field" [Jain, 1972, Vol. II, p. 379].

The Irrigation Commission pointed out the benefits that were likely to accrue from the modernisation scheme. These included "(a) addition of 1.54 million hectares (3.81 m acres) to the total cropped area; (b) relief to about 16,200 hectares (40,032 acres) of land periodically subjected to submersion and waterlogging; (c) stabilization of irrigation in about 33,600 hectares (83,029 acres) of single cropped land in the Lower Coleroon Anicut System; and (d) increase in the area under sugarcane and pulses by 8,100 hectares (20,016 acres) each" [Jain, 1972, Vol. II, p. 375]. The fact that the area under irrigation on the Cauvery in Tamil Nadu increased from 25.30 to 25.80 lakh acres between 1971 and 1990, i.e., by only 50,000 acres, makes one feel that the ambitious project proposed in 1971-72 never really got off the ground. Otherwise, the area under irrigation should have increased to a greater extent. Whatever may be the Tribunal's final award, the Tamil Nadu Government should undertake improvements in the Cauvery delta area to be able to garner the scarce water resources of the river within its command.

The Irrigation Commission had also pointed out that awards by Tribunals, "notwithstanding there legal force, cannot carry the same conviction, nor give the same psychological satisfaction as agreements or compacts arising out of negotiation. Mutual accommodation or agreement go much further in the direction of ensuring equity, of redressing imbalances, and obtaining willing implementation, than judicial decisions, which more often than not, in spite of the probity and impartiality of the judge or arbitrator, have the effect of prolonging the agony of the riparian States. That the scope of mutual agreements often extends beyond what can be enforced by judicial decisions, is borne out by the history of successful negotiations - where compromise, mutual accommodation and even a willing sacrifice of interests to help solution have led to many settlements" [Jain, 1972, Vol. I, p. 349]. If only Karnataka and Tamil Nadu had come to some compromise over the last twenty years, the dispute would not have reached the stage to which it had reached today.

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Hasan, Mushirul, (Ed.) *India's Partition: Process, Strategy and Mobilization*, Oxford University Press, Delhi, 1993, Pp. vii+426, Price Rs 390/-.

India's partition has been a major event in recent Indian history. The forces that led to partition are in some ways active even today. Historians have therefore continued to delve into the past to get new understandings of the events of that time.

The present book, which is a publication in the series 'Themes in Indian History - Oxford in India Readings', gives us some 'readings' on this topic. It brings together some important texts, essays by various scholars, memoirs of some persons who lived through those times and even a short story. The texts are: Jinnah's speech of March 1940 recommending the Pakistan Resolution and the reactions thereto from Abul Kalam Azad, Mahatma Gandhi and Jawaharlal Nehru. The editor of this particular book in the series, Mushirul Hasan has himself contributed an essay on the Muslim mass contact campaign of the Congress and has also contributed an introduction surveying the various developments. The readings are enriched by copious footnotes, references and an annotated bibliography.

The General Editors of the series have this to say about this book:

The history of Partition is often associated with a series of paradoxes: the Muslim League which had no social support till the early 1940s, spearheaded a movement which fractured India; Jinnah, known as a secular nationalist till the early 1930s, became the spokesman of the Pakistan demand; the Congress which had fought for

national unity for decades, accepted the Partition Plan with *unseemly* ease. (emphasis added) The essays of this volume try to make sense of these paradoxes.

This study has, clearly, two dimensions. One is the high politics of the central leaders of the Congress and of the Muslim League. The other is the changes at the level of the people. Two of the essays deal exclusively with the high politics - One by Asim Roy, subtitled as 'the revisionist perspective' and the other by R.J. Moore, entitled 'Jinnah and the Pakistan Demand'. Two essays are on the developments in Punjab, two on Bengal, one on U.P., one on the princely State of Hyderabad. One essay is on the Muslim mass contact campaign of the Congress. Two articles are in the nature of memoirs and personal observations. Only one article is on the relationship of the ideology of Islam as a factor in determining the attitude of Muslims to the questions of independence and governance.

As regards the 'high politics', a view which has taken root during recent years, called the revisionist view, is that Partition was not really Jinnah's aim, it was only his bargaining position; that he really wanted to solve the Hindu - Muslim problem in a united India; that it is the Congress which failed to meet the Muslim aspirations for a share in power, etc. This reviewer has already reviewed through this journal a book expressing such a revisionist view [JISPE, 1992, Pp. 190-191]. In the present book the revisionist view has been examined by Mushirul Hasan in his introduction and by Asim Roy and R.J. Moore in their essays. That the revisionist interpretation explains away the paradoxes is perhaps true but that is no proof of its validity. While Asim Roy argues strongly in favour of the revisionist interpretation, R.J. Moore effectively demolishes it. The revisionist interpretation is based on (i) Jinnah being originally a nationalist, (ii) there being no mention of Pakistan in the Lahore Resolution, (iii) Jinnah's acceptance or near-acceptance of various constitutional solutions which fell short of Pakistan, (iv) the vagueness of the Pakistan Resolution as to the desired constitutional arrangements, (v) Jinnah's reference to India as the common motherland of Hindus and Muslims, and finally (vi) even Nehru's statement prior to 1940 that he didn't suppose that the differences between the Congress and the Muslim League were very great. Asim Roy says that the revisionist perspective offers a much clearer and more logical and convincing interpretation of the battle between Jinnah and the Congress in which 'both openly stood for what they did not want, said what they did not mean, etc.' (p. 104). However, he does admit that the 'assumed' vagueness of the Pakistan Resolution and Jinnah's astuteness seem a little dubious (p. 129) in as much as whatever its vagueness, that resolution was immediately and universally identified with the demand for Pakistan and Jinnah welcomed such identification. Mushirul Hasan himself considers the interpretation of the Congress role put forward by Ayesha Dalal, the main proponent of the revisionist view, to be one-sided since 'it is almost solely based on official sources, on Muslim League records and Jinnah's private collection' (p. 40). The Congress records do not figure in her interpretations. R.J. Moore has gone further and has adduced evidence to show that a separatist demand had already been formulated by various Muslim leaders by 1938 - by Sir Muhammad Iqbal, Sir Abdoola Haroon of Karachi and Mian Bashir Ahmad, a friend of Iqbal. Moore has shown that Bashir Ahmad's writings of October 1939, and the petition made by the Aligarh scholars in November 1939, provided the very words which Jinnah used to put forward the Muslim demands. Moore has argued that while Jinnah was ready to accept quite different constitutional forms from time to time, 'the essence of the Pakistan demand - the right to a territorial asylum, to the self-determination of the Muslim nation in the north-western and eastern regions of India - was never compromised'. Moore argues that the final outcome (Jinnah being left with a truncated Pakistan which served Muslim interests very poorly) 'lends no support to speculation that Pakistan demand was Jinnah's bargaining counter for power in a united India or that the Partition hoisted him with his own petard' (Pp. 194-195).

The revisionist view is epitomised by the sentence 'both (sides) openly stood for what they did not want, said what they did not mean ...'. Making this sort of a judgement about what any person wants or means may be fair in political arguments but hardly acceptable in a scholarly, historical account, particularly when such a judgement is formulated as a solution to assumed paradoxes.

The other dimension of the study is the ground conditions which gave rise to the Muslim demands and carried those demands to the stage of Partition.

As historical facts show, the Muslim League grew first in Uttar Pradesh. The background to the Muslim separatism in that province has been outlined by Lance Brennan. The picture there is that Muslims in Uttar Pradesh had prospered as a result of their collaboration with the British power. They had gained separate Muslim electorates, weighted representation under the Lucknow pact, guaranteed shares of government employment, promises of a share in power at the highest level, etc.

This picture however changed in many ways when the Congress came to power in 1937. The greatest shock to the Muslim elite was that they as a community no longer had a say in the government. The Congress would not share power with the Muslim League MLAs unless they merged with the Congress. The bureaucracy did not have the earlier hold on power, rather it was under pressure from the district and local functionaries of the Congress. The land-holding Muslims were threatened by agrarian reforms. Urdu was giving way to local languages. Even the new education system was alien to the Muslim culture. The pattern repeated itself in all the provinces where Muslims were in a minority and the Congress was in power. Even when the Congress tried to be liberal where Muslim interests were concerned, there was no way, the interests or the entrenched positions of the Muslim elite could be protected. Mohammad Mujeed says in his article that 'if I were to give the one all-important reason for the upsurge of sentiment which ultimately led to the partition of the country, I would say that it was the reaction of this class to the realities of democracy' (p. 401). It was this Muslim elite which injected a religious element into their fight against the Congress.

In Bengal also the Hindu-Muslim divide was because of economic factors. Here the roles of the two communities were reversed. It was the Muslim peasantry mainly of East Bengal, whose interests clashed with those of the Hindu landlords. It was the Hindu representatives in the legislature who opposed agrarian reforms. The Praja Party lead by Fazlul Huq represented the interests of the peasantry but could not achieve much as it could not form a government on its own and had to make alliances with others. It is here that the Praja Party lost popular support, which swung to the Muslim League. Partha Chatterjee, who has discussed in his essay the Bengal politics, asks the question: was the widespread expression of the demand for Pakistan among the Muslim peasantry of east and north Bengal any different from, or anything more specific than, their desire to free themselves from *zamindari* domination to establish a more just relationship with the state machinery? 'We cannot be certain', says he, 'only further research can give us more definite answers' (p. 273).

The story of Punjab is entirely different, as told by David Gilmartin and Ian A. Talbot. Here the Muslim society was divided into several vertical factions. The Islam practised in Punjab was not classical Islam at all, but a system of religious patrons and their beneficiaries. The patrons were either the disciples or descendants of saints and were supposed to possess the divine charisma which could give material benefits to such persons as put themselves under their patronage. The patrons or *Pirs* often became big landowners and also the channels through which the authority of the British Government was exercised. *Pirs* and landlords thus held complete sway over the population. When modern politics came to Punjab, the Unionist party utilised this social structure of the Punjab peasantry as its support. It was only later, when the all-India politics was undergoing change and became more important, that the Punjab leaders accepted the supremacy of the Muslim League, which in due course destroyed

altogether the local parties.

The Muslim League's march towards becoming the sole representative of Indian Muslims thus took quite a zigzag course and is on the face of it quite confusing. It looks almost a scene from the 'theatre of the absurd'. As if to add to this sense of the absurd, we have a short story in this book about an imagined exchange of lunatics between India and Pakistan. The burden of the story is the sense of incomprehension of the event of Partition on the part of the lunatics. The catchy phrase of the 'revisionist' writers that 'both (sides) openly stood for what they did not want, said what they did not mean' also reduces the whole phenomenon of Partition to an absurdity.

It is only Farzana Shaikh who, from among the contributors to this book, goes deep into the question of ideology. She says: '...the emergence of Muslim fundamentalism in parts of the Middle East and South East Asia has clearly demanded that we reassess and redefine the role of Islam in terms of its potential not only to legitimate but also to impel political action and behaviour. The specificity of historical studies which have until now tended to view Indian Muslims as a case apart must therefore, it seems, be complemented by a broader approach which regards them as a part of wider ideological tradition ....' (p. 82). Farzana Shaikh then goes on to expound the Islamic ideas about representation - that in the Islamic view it is the community which is more important than the individual, that it is the community which has to be represented and that too by a person belonging to and able to represent the consensus of that community. According to Farzana Shaikh, the concept of fluid political alliances of individuals was alien to Islamic thought and the Muslim League's claim to be the *only* representative of all the Muslims in India and to the *equality of status* of Hindu and Muslim *communities* grew out of this basic Islamic concept. The failure of all the proposals put forward by the British to solve the communal tangle 'stemmed from the clash of two wholly irreconcilable set of political norms. The League was clearly unwilling to compromise on the view that Muslims and non-Muslims were rigid monolithic political entities, whereas Congress would accept no arrangement that threatened to undermine the legitimacy of freely arrived political alignment'. Shaikh has referred to Nehru's statement made as early as March 1937, i.e. much prior to the formulation of the Pakistan demand, that his party viewed with alarm the prevailing tendency to regard India's communal groups as politically rigid, mutually exclusive entities without a sense of shared common interest (p. 90).

It is in this context that one has to see the opinion of Sir Iqbal *et al.* that 'the life of Islam as a cultural force' and 'the development of Shariat clearly depended upon the creation of one or more Muslim States with absolute majorities' (p. 91). Mahatma Gandhi had even noted the Muslim League propaganda that, for Muslims, to live under Hindu rule was sin (p. 72). It may be that prior to 1937 the Punjab peasantry was eons away from classical Islam or that the Bengal peasantry saw in the Pakistan demand only their deliverance from the domination, but they were certainly swayed by the ideology put forward by the Muslim League and, more importantly accepted Jinnah as their Saviour. Islamic ideology has also necessarily to be based on classical Islam. We can see a parallel in the Hindutva ideology, which is based not on village deities or folk-traditions but on Brahmanical concepts. What Jinnah added to the Islamic ideology was a political dimension - that of parity between the Muslim nation and the 'Other'.

If Farzana Shaikh's analysis is taken into account, we are led to a simpler model of the Partition story, more understandable than the absurdistic model which has been put forward by the revisionists. What happened was that prior to Mahatma Gandhi's mass agitations, high politics remained in the hands of the elite who managed a delicate balance of their own positions by pacts and alliances. Jinnah did not have to strike a discordant note at this stage and passed off as a secular and nationalist politician. Political and economic changes however brought the masses closer to the state structure and had to be taken into account by the leaders. At that stage it was easier to depict class differences as communal

differences. For example, with the monetization of the agricultural sector, the moneylender became more powerful; and he was invariably a Hindu, since money-lending was taboo in Islam. It was easier to depict agrarian reforms as anti-Hindu or anti-Muslim. The Hindu society was already used to thinking in terms of caste-groups. For them the Muslims were always a different caste-group. With this compartmentalisation of society there is no wonder that communal politics took immediate roots. Communal ideology became prominent. On the Muslim side, the idea of a single community ruled by the representatives of that community, in accordance with that community's norms, an idea which already existed in classical Islam, was picked up and became the centre of the communal movement. Sir Iqbal could not think of any other model. The reformist Schools in Islam - Seabandis, Bareluis, Ahrars, Jamaats and others - ignorant of the needs of the day, could not give any other model. Jinnah simply exploited the given model with all his forensic skills. That model required the communal division of India. The Congress tried to win over the Muslim masses through its mass-contact campaign but failed when Congressmen were in power during 1937-39. Many of their actions could be depicted as anti-Muslim. When they resigned for opposing India's forced participation in the Second World War, they were simply imprisoned and put out of action. The Muslim League in the meantime consolidated itself as the sole representative of the Muslims. It proved its position in the 1946 elections. Its final aim was the establishment of a sovereign state for the Muslims. The Congress had by now become mentally prepared for Partition. Nobody expected a sudden termination of the British Rule. So the Muslim League was prepared to accept interim arrangements short of Pakistan but only on the condition that the interim arrangements also conformed to its concept of parity between the Muslim nation and the 'Other', and of the Muslim League being the sole agent of the Muslim nation. The Congress also was prepared for any interim arrangements that did not crystalise such a division. The British decision to quit immediately and the upsurge of communal violence left no time for playing with interim arrangements. Final choices had to be made. The Congress therefore accepted Partition for which it was already prepared and the Muslim League accepted a truncated Pakistan when it found that it could not get anything more.

All the elements of such a picture are scattered throughout the present book. Put them together and you have the picture before you.

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B.P. Patankar,
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Sathe, S.P., *Towards Gender Justice*, Research Centre for Women's Studies, S.N.D.T. Women's University, Bombay, 1993, Pp. 88, Price Rs 40/-.

This book is the first publication of the Gender Series planned by the Research Centre for Women's Studies. This series seeks to enhance our knowledge of women's status, problems, and struggles in all spheres of life. The present book takes a comprehensive view of the interplay of legal and social factors which keep women away from getting the full benefits of legal justice. The idea of movement for equal justice in the eyes of the law is relatively new. In the nineteenth century the social reformists tried to emancipate women with social changes radical for the time but certainly not free from patriarchal biases shared by reformers as well as the British rulers. With this gender bias, full justice was bound to be denied to women. But things have not changed much even to-day. This is the theme of the three lectures incorporated in this book.

With English education and English legal system, radical change was introduced in the outlook of the Indian intelligentsia by its exposure to Western liberalism and to the benefits of the rule of law. The pursuit of gender justice started when

Mahatma Phule and Savitribai started (in 1848) a school for girls. From this period Sathe starts his discussion on gender justice. The idea of not interfering with native religious beliefs left the colonial rule to enforce traditional law which was based on social and gender inequality. This policy also resulted in not changing the personal law of both, the Hindus and the Muslims, which contained manifest injustices against women. Whether it was the problem of *Sati*, female infanticide, rape - all were dealt with by law so that no legitimate justice was given to the female. For instance, in the famous *Rakhmabai* case, she as a child was married to a most unfit husband; still her litigation could not stand in the court of law, though the case was settled outside the court with a payment of Rs 2,000 to her husband. But the case certainly brought out one thing, that there was ferment going on in the Indian society and individual liberty was gaining recognition at least in a small section of society. But law has not been on the female side so that it has not been able to eliminate the flesh trade in the name of religion in the case of *Devdasis*.

Even after Independence the attitudes of the law givers have not changed. The Hindu Code Bill introduced by B. R. Ambedkar was opposed by conservatives in the Congress party, including Dr. Rajendra Prasad, the first President of the Indian Republic, so that Nehru was forced to withdraw the bill and Dr. Ambedkar resigned on the issue. In other words, like the colonial state, independent India too was reluctant to undertake social reform through legislation out of fear of offending the religious susceptibilities of the people. Rajiv Gandhi's Government showed similar reluctance, for instance, in the *Shah Bano's* case. His withdrawal of maintenance to Muslim ex-wives, by husbands through the Muslim Women's Act of 1986, after the Shah Bano judgement is a case in point. This was 100 years after the *Rakhmabai's* case of 1885. Muslim orthodoxy got the law altered to women's disadvantage.

The second lecture by Sathe deals with 'Sexism: Constitution and Judicial Process'. The Constitution makers never thought that the patriarchal value system itself needs to be contested. Patriarchy accords subordinate place to women and the decisions in the law courts are after all undertaken by male judges not free from patriarchal ideology. Even when equality is granted by the Constitution, it does not make it a social reality. After the Constitution became the law there is a queer picture of a contradiction between equality mandated by the Constitution and inequality sanctified by tradition and custom. No divorce laws are on the side of women in any religion in India. So is the case of rules and regulations in the employment of women and the legal interpretation of the rules. The Land Reforms Acts also gave unequal status to men and women. Even while censoring films regarding servility of women to men, most judges fail to be free from gender bias. If judges, the elite of the society, show such biases what can one expect from the lower down interpreters of the law?

In the third lecture, the intention is to see various legal methods of women's empowerment and how law could be used more effectively to bring about gender justice. Although the pursuit of gender justice spans over the last 163 years, barring a few pockets of modernised liberated sections of women, injustice and inequality have continued. To fight male hegemony the females should be equipped with powers and rights. In the Constitution, there is often a reference to sex but not to gender. Sex is a narrower term than gender. One suggestion by Sathe is to incorporate gender justice in the concept of social justice. Establishment of gender equality is necessary. Equality should not mean similarity. Women need different rights and entitlements with regard to their reproductive function. Democratic social culture and secular polity are the musts for gender justice. Gender justice does not thrive in a fundamentalist regime. There should be state intervention to empower women to get gender justice. The very nature of offences such as dowry deaths require a less technical and socially sensitive approach by various components of the

criminal justice system. It is not enough to provide legal sanctions. The whole legal system including judges down to persons conducting criminal investigations need intensive gender sensitisation training programmes.

The book by Sathe does real justice to gender justice.

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Kher, Mānik, *From Shadows to Light - A Socio-Legal Approach to Work Atmosphere*, Times Research Foundation, Pune (India), 1991, Pp. viii+142, Hard Back, Price Rs 130/-.

Kher's volume, *A Socio-Legal Approach to Work Atmosphere*, essentially contains four rather disparate essays, three of which she had presented at different seminars. The four essays relate to the nature of industrial conflict, worker militancy in India, trade union democracy, and industrial democracy. Two more chapters have been added in the book. The first, which is an introduction, is titled: 'Towards a Sociology of Legal Change', and the last, which is the concluding one, is titled: 'Looking Beyond'. Two case studies have been added as appendices, one each after chapters 2 and 3.

In the essay on industrial conflict, Kher presents some useful data by analysing Indian superior courts' decisions on labour law which relate to 'legality' and 'justifiability' of strikes and the time consumed in obtaining legal justice. Here, she is concerned with the use of strikes and lock-outs as means of industrial dispute resolution over a period of time. She also cites cases to show the attitude of the Supreme Court of India to these actions. She laments the use of trade unions by politicians for political purposes (p. 25) and also 'the government's lenient approach towards irresponsible behaviour of the organized labour' (p. 27). By citing data on time taken in decisions of higher judiciary she in effect demonstrates, though not explicitly, the futility of the existing adversarial model of industrial relations in India. The case of *the Bajaj Lock-out* appended to this essay, even as it is difficult to accept this as the usual profile of industrial disputes in India, is interesting, and seems to have influenced many of her observations in the paper. In the short essay on labour militancy in India, she scans literature on this theme from the period 1947 to 1990 to show that trade union actions have never been totally free from violence (p. 64). She laments the increasing use of trade union power as a money-making business and as a short cut means to political power. She also blames managements for labour militancy due to their apathy to workers' problems. In this essay too, her observations seem to be guided more by the *TELCO* case on militant and violent unionism, given in the appendix to this essay.

The chapter on union democracy begins with an observation of the emergence of internal unions in India, and managements' preference for them. In this essay, Kher draws attention to the process of union democratization in three industrial organizations in Pune. She examines the administrative procedures of the unions concerned and members' awareness and participation in union activities. She argues that workers value internal democracy in trade unions. Kher also notes that managements make subtle efforts to weaken the trade union activities in their company by following the policy of 'divide and rule' and 'favoured promotions'. She quotes some studies on union democracy by foreign scholars, but makes no reference to, perhaps, the only scholarly work on this theme in India by Mamkoottam [1982], who studied union democracy at *TISCO* - one of the biggest private sector companies in India.

In the last essay on industrial democracy she notes the failure of workers' participation schemes that have been evolved in India so far. The reasons attributed to this are lack of honesty and trustworthiness between management and labour and prevalence of self interest over organizational interest. She also suggests an 'alternative scheme' of 'employee stock option'

system to motivate workers towards workers' ownership of the organization and thus greater motivation for productivity (p. 127). But she has not studied participation issues in the context of grievance procedure and collective bargaining situation, which in the Indian context are intimately and perhaps inseparably connected with this issue [Johri, 1992, p. 142].

The *Socio-Legal Approach to Work Atmosphere* makes some useful analysis of data relating to the time taken by superior courts in deciding labour cases. The two appendices following chapters 2 and 3 are also interesting reconstructions of two live cases. Especially to a student of socio-legal research on labour law and industrial relations, these presentations may appear quite revealing, though are not sufficient for a fuller understanding of the dynamics of the underlying issues. In fact this insufficiency is one of the serious shortcomings of Kher's formulations.

A careful appraisal of Kher's work would reveal its four glaring limitations. Firstly, she appears to be attempting a sociology of legal change and promises to use 'grass root' data on the topics of the essays, and shows tremendous optimism towards a brighter industrial relations scenario in the time to come, as is suggested by the title of the book. But in actually doing so, there is a wide gap between promise and delivery so much so that even the title of the book has remained inappropriate and unjustified. Her analysis hardly demonstrates any sociology. She has attempted to pull together rather disparate themes to develop her supposed sociology of legal change. And she inappropriately makes references to other laws including personal laws for developing a perspective in this regard (Pp. 4-11). The specialist does not have much to learn from her explanations which appear to be more suggestive than analytical. Only occasionally she refers to the impact of legal provisions on social practices and vice versa.

It is dissatisfying to note that most of Kher's formulations, because of absence of any level of abstraction, miss the operation of larger structural forces. Nowhere does one feel any teleological development of her 'sociology of legal change'. She has not even been able to adequately distinguish between symptoms and causal roots, and also often presumes the operation of the system without demonstrating it. And her analysis appears extremely simplistic or even wishful. She has also failed to appreciate that the implementation of law is a process in which dominant political values are subtly imbibed, and that the law which manifestly appears to be egalitarian and just, in its mode of operation and enforcement, often leads to projectedly unintended and, at times, reverse consequences. For example, this is revealed by some recent work on the working of the Industrial Disputes Act, 1947 (IDA). It is well known that the Indian industrial relations model hinges on the principal central law, the IDA, so much so that the personnel managers in India are labelled as the children of the IDA. But she has rather surprisingly omitted any serious consideration of the sociology of this law, except by making cursory references here and there. In fact, studies reveal that it is this law which has 'juridified' the work atmosphere and promoted the adversarial culture in industrial relations (Saini, 1991, p. 1).

Another serious limitation of Kher's book is that she has not at many places correctly appreciated legal and other positions. For example, she wrongly presumes that sections 17 and 18 of the Trade Unions Act, 1926, provide immunity to labour against criminal and civil liabilities, including against violence. Otherwise, why should she suggest a change in these sections? The reason she gives for this suggestion is 'to curb the destructive tendencies of workers and their instigating leadership' (p. 66). Actually, however, a careful reading of these sections would reveal that under these provisions the immunity is in effect merely against the right to withhold labour from ... becoming a criminal conspiracy and not from criminal offences as such. Such immunities are available even in other systems as well, including those of the U.K. and the U.S.A. These immunities are the very spine of any trade union law and have become too internalized to be questioned. Again, she wrongly observes that '...

with an increase in the frequency of work stoppages, the Supreme Court has laid down in 1990 (in the case of *Bank of India* v. *T.S. Kelawala*, 1990 II LLJ 39) that workers are not entitled to wages during the strike period (p. 12). But, studies have reported a 'low incidence of work stoppages in (*sic*) previous decade' [Johri, 1992, p. 149; and Verma, 1993, p. 103]. Lastly her assumption of 'consensus' or 'conflict' view of society keeps changing and from that point of view her formulations appear quite naive. Indeed, her overall conclusions appear frustrating to the reader. Those wanting enlightenment on the sociology of labour law in India are bound to be disappointed, and are in effect left with hearing some sermons on good industrial relations. Beginners, especially students of industrial relations, may, however, find some interesting case studies for analysis.

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Sathe, S.P. *Administrative Law*, (5th ed.), Tripathi Pvt. Ltd., Bombay, 1991, Pp. ix+504, Price Rs 120/-.

The vast expansion of powers of administrative state in the 20th century has resulted in the phenomenal growth of administrative law worldwide. Consequently administrative law has come to be taught as a compulsory subject in the law schools all over and also in India. In this context there arose the need for good text books. S.P. Sathe's book, *Administrative Law*, now running in its fifth edition in a short span of two decades, has come to occupy a pride of place in the legal literature on administrative law.

Administrative law deals with 'the delegated powers and procedures of non-legislative and non-judicial (i.e., executive or administrative) officials and agencies of government and with judicial review of their actions, particularly as they affect private interests' (Forward by Ralph F. Fuchs to Fourth Edition, p. vii of the Fifth Edition).

The central inquiry in administrative law is how to make the government accountable for what it does in the exercise of rule-making, adjudicatory and discretionary powers. Rule-making or delegated legislation by the bureaucracy being an inevitable necessity in modern government, norms and control mechanisms have been evolved by the courts to keep it within the boundaries of enabling legislation. Control is exercised by the Parliament and state legislatures in various ways as laying procedures, Committees on Subordinate Legislation, etc. Judicial control takes place at two stages, namely, at the threshold of delegation on constitutional grounds and subsequently on the scope of the rules themselves on the touchstone of fundamental rights and on grounds of *ultra vires* and other norms of procedural due process.

The exercise of judicial and quasi-judicial powers by the government has to be in accordance with the principles of natural justice, evolved and articulated by the judiciary. The exercise of discretionary powers by the administration cannot run riot. In a democratic society, the public officials must exercise discretion in a non-arbitrary and non-discriminatory manner.

Sathe has critically and succinctly analysed the leading judicial decisions and updated the significant legislative and judicial developments in these areas. As the author himself has said, this edition involves besides additions and editing, re-writing of substantial parts in response to emergence of new concepts, new institutions and

new law (p. ix).

The most remarkable addition is the chapter on tribunals, commissions, etc., and judicial review of their determinations. In an insightful analysis the author has surveyed the origin of tribunalisation and the fillip that it received from the incorporation of articles 322A and 323B in the Constitution by the Forty Second Constitution Amendment Act, 1976. Within the inherent constraints of a text book, the author has discussed the powers and procedures of some tribunals and the general principles of judicial review of tribunal decisions. The author has highlighted 'the new thrusts in tribunalisation typified by grievance redressal systems under new legislations as the Family Courts Act, 1984, Administrative Tribunals Act, 1985 and the Consumer Protection Act, 1986,' (p. ix). He has made valuable suggestions for setting up an apex body over tribunals as the Council on Tribunal in Britain for reviewing the working of tribunals. A welcome and useful addition is the examination of the powers and procedures of national commissions, such as the Commission for the Scheduled Castes and Scheduled Tribes and the Commission on Women, as their scope of inquiry relates to weaker and disadvantaged sections of society. The provisions of the Commissions of Enquiry Act, 1952, the tool for governmental inquiries and investigations, have been critically commented upon.

Judicial control, an important aspect of administrative law, is legal control of government by the court. This usually takes two forms: public officials and institutions are liable to be sued for torts, breaches of contract and so on. Further, many governmental activities are also subject to what is called judicial review. Both forms of judicial control are basically retrospective. They are concerned primarily with dispute resolution and not dispute avoidance. The author has ably analysed the various methods of judicial review, constitutional and statutory, namely, the writ mechanisms and the residuary appellate jurisdiction of the Supreme Court and the statutory appeals. Grounds of judicial review have also been examined. The evolution of public interest litigation (PIL) as a panacea for enforcement of fundamental rights of vulnerable sections of Indian society by the Supreme Court has been critically analysed. In the words of the author: 'The PIL has doubtless been a welcome development in Indian Public Law. It facilitates access to courts and helps deprofessionalisation of the legal process. But this instrument must be used most sparingly and with circumspection. Most of the PILs have not progressed beyond interim orders or reliefs. The lack of resources on the part of the courts to follow up the matter after judicial disposal is an important impediment. PIL can be meaningful and effective only when the normal judicial process becomes less technical, dilatory and expensive. Reform of the system of delivery of justice is therefore long overdue. Unless and until that happens, the PIL is bound to remain a mere tokenism' (p. 389).

The main heads of governmental liability in torts and contracts have been analysed, particularly the former depicting the liberal judicial trend in restricting the scope of 'sovereign functions' of the state.

The institution of Ombudsman of Scandinavian origin has been set up in many democratic countries of the world, as a way of filling the gap for deficiencies and limitations, in judicial and parliamentary mechanisms for reviewing administrative action. The main function of an ombudsman is the redressal of genuine grievances of citizens against the administration. In India, this institution has taken different appellations, *Lok Ayuktas* at the state level (several states have appointed *Lok Ayuktas*) and *Lokpal* at the central level (yet to be appointed). The author has critically examined the provisions of the various *Lokpal* Bills introduced in the Parliament by various governments in the last two decades but were allowed to lapse. In his view, 'The Lokpal will not be of any use to the common man whose main grievance is against maladministration, red tape, callousness and negligence. We feel that it might turn out to be another cosmetic office to induct a sense of complacency. What we need is a system which will provide quick relief to people against administrative

action as well as administrative inaction' (Pp. 499-500).

One of the chief impediments to accountability for the performance of governmental functions is government secrecy. Control of administrative action is very difficult without access to information. The governments the world over tend to be secretive. Secrecy is often justified in public interest. This century marked the whittling down of the scope of governmental secrecy by the courts in USA, UK, and India. However, the notorious Official Secrets Act, 1923 is still on the statute book in India. Consistent with the norms of democratic governance, the Indian courts have curtailed the claims for governmental privilege to withhold information in litigation. There is a persistent demand from citizens' groups and legal activists to repeal this Act and enact a Freedom of Information Act. The author has analysed the contours of governmental secrecy and has examined relevant judicial decisions which have liberalised the rigours of secrecy regime in court proceedings thus reinforcing the view that secret state is an anathema to civil societies wedded to the rule of law and norms of public accountability.

It is felt that the ushering in of the 21st century will increasingly replace command economy by market economy worldwide. This phenomenon will, of course, reduce state ownership and control of production processes but will not minimise state regulation of economic activity. Consequently the relevance of administrative law as a tool for control of administrative process will not diminish but, on the contrary, will only increase.

S.P. Sathe's contribution to generation of knowledge in so vital a branch of law as administrative law is invaluable. The book is essential reading for students of law, public administration, political science and sociology, administrators, lawyers, judges and the media.

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ANNOTATED INDEX OF BOOKS AND ARTICLES ON INDIA

EDITOR'S NOTE

These abstracts are prepared by the author of each book/article sent to us voluntarily in response to our invitation through the Economic and Political Weekly. These cover publications after 1st January 1986. Only abstracts of books/articles so received are published. The index, therefore, is not exhaustive and complete.

The limit of 250 words and 100 words for abstracts of books and articles, respectively, is strictly enforced. Only a minimum amount of copy editing is done in order to bring the abstracts within the prescribed limits. The readers should approach the author of the abstract, not this Journal, for any clarifications.

BOOKS

1994

B.D. Dhawan, *Irrigation in India's Agricultural Development*, Commonwealth Publishers, New Delhi, 1994, Pp. 283, Price: Rs 350/-.

The focus in this book is on the three issues of productivity, stability and equity impacts of irrigation development in India. The author has made extensive use of countrywide statistics and other secondary data to assess at state level the productivity and stability contributions of irrigation.

Among the several questions the author pays particular attention to the following ones. Does ground water irrigation add more to crop productivity than canal irrigation? For enhancing agricultural diversification what are the desirable changes in irrigated cropping patterns in various regions of the country? Has irrigation really failed to reduce instability of agricultural production in general and of food grains production in particular? What causes unequal production gains from irrigation between small and large farmers?

This is the second edition of the book which was first published by Sage in 1988. After its first publication it was extensively reviewed both in journals and the print media. An Epilogue to the new edition has been added. This is more in the nature of reassuring the readers about the robustness of the empirical results, much less as a rejoinder to some critics of the criticism raised by them in their reviews.

Saini, Debi S. (Ed.), *Labour Judiciary, Adjudication and Industrial Justice*, Oxford & IBH Publishing Company, New Delhi, 1994, Pp. xiii+257, Price: Rs 295/-.

The Indian industrial relations model confers quasi-judicial powers on Labour Courts, Industrial Tribunals, and Industrial Courts (under the Bombay Industrial Relations Act, 1946), to investigate and settle industrial disputes. How has the labour judiciary used this adjudication model in realising the objectives for which it was created? This book is designed to explore this issue. It includes essays from well-known experts from academics including those who specialise in labour law, law and society, labour economics and labour sociology, jurists and judges of the higher judiciary, senior labour advocates, labour conciliators and administrators, and eminent trade union leaders. The contributors, among others, include Professors Upendra Baxi, N.R. Sheth, Pramod Verma, Debi S. Saini, VRS Cowlagi, Chief Justice T.U. Mehta (retd.), Justice D.A. Desai (retd.) and Labour Commissioner

N.A. Vhora (Gujarat). The essays are based on doctrinal as well as empirical analyses.

Labour law and society is a completely barren field in India. This book represents, perhaps, a first attempt of its kind in India whereby labour law issues are examined in the social context. Among others, the essays deal with topics such as tribunal procedure and approach, dynamics of delay, framework of industrial conflict, and role of judiciary in industrial equity, industrial peace and industrial relations. Some essays analyse the grass root realities of the working of our model; others are based on rich judicial or administrative experience of the authors.

The introduction and the essays in this book will not only stimulate theoretical debate but also provide a foundation for further doctrinal and empirical research.

The book will be of interest to students, scholars, practitioners and judges in the area of labour law. It will also interest labour sociologists and management scholars.

The Journal will publish in each issue Annotated Bibliography of Books and Articles on Indian Economy, Polity and Society, published after January 1, 1986. Authors are requested to send their entries with full details of publication and annotation not exceeding 250 words for books and not exceeding 100 words for articles. Use separate sheet for each entry.

BOOKS RECEIVED

Currently, a large number of books are being published on Indian economic, political and social problems and developments. We give below a list of books we have received with a request for a review. For want of editorial resources, it is not possible to review all of them though many deserve a critical review. Interested readers are requested to write to the editor indicating which of the following books he would like to review or write a full review article on. We shall be glad to do the needful. Readers are also welcome to review books recently published, but not appearing in the following list. As the contributors to this Journal are aware, all contributions published here are adequately remunerated.

Alagh, Yoginder K., Raghuvir J. Mody and Rohit D. Desai, (Eds); 1. *Sectoral Growth and Change*; 2. *Stability and Development: Essays in Honour of D.T. Lakdawala*, Har-Anand Publications, New Delhi, 1993.

The set of essays in these two volumes are contributed as papers at a national seminar organised at the Sardar Patel Institute of Economics and Social Research, Ahmedabad. Economic policies and development strategies have undergone considerable change in India during the last decade. The first volume analyses the sectoral aspects of development with respect to policies and performance in India, while the second one discusses structural adjustment, stability and economic growth. In the new trade policy regime with liberalised tariff rates and new pricing policy, exports and sectoral growth rates are expected to rise. It has been shown in the first volume that import restrictions adversely affected output in the manufacturing sector. Some of the specific issues dealt with in this volume are: trade gaps as binding constraints and the role of foreign aid and borrowing; reforms in tariff and pricing policies, particularly details of phasing and sequencing; technology policy requirements and failures; industry level reactions to new policies; case studies of expanding (electronic) and stagnating (textile) industries; the new agricultural policies; investments and markets in agro-climatic planning; land and water management; participatory development and sustainable growth; agricultural price policies and intersectoral flows; the economies of non-crop based sectors.

The main issues elaborated in the second volume include: the nature of the dominating constraints in the next phase of development, i.e., savings, agricultural growth, foreign trade or combinations of these; the phasing and sequencing of reform; the nature of growth possibilities and trade-off between inflation and growth;and details of fiscal, monetary and economic policies.

The emphasis in both the volumes is always on case studies, econometric results and specific arguments. Prof. V. M. Dandekar's learned inaugural address is a prelude to both the volumes. Also they are preceded by comprehensive introductions, detailing out the contents of each paper.

Dhawan, B.D.; *Irrigation in India's Agricultural Development: Productivity, Stability, Equity*, Commonwealth Publishers, New Delhi, 1994.

This is the 48th publication in the series *Studies in Economic Development and Planning* of the Institute of Economic Growth, Delhi, with S.N. Mishra as the general editor of the series. This itself is a second edition of the volume, which was first published in 1988. It is the outcome of a painstaking and detailed research effort, tackling such pertinent questions in agricultural growth and water management as the following:
whether ground water augments production more than canal water; whether changes are required in the cropping patterns in order to increase the productivity of irrigated lands; whether irrigation has failed to reduce the instability in agricultural output; and what the causes of inequitable sharing of the gains of growth between small and large farmers are.

The first three chapters of the study elucidate the conceptual problems, *a priori* expectations about the irrigation impact on farm economy and the methodology adopted by the author in the empirical investigations. These investigations are presented in the subsequent chapters. Three of these latter are devoted to productivity and income impact of irrigation while the next two deal with the empirical issue of stability impact of irrigation. The last but one debates the question of equity. The last chapter recapitulates the empirical findings and their policy implications.

Fernandes, Walter (Ed); *The Indigenous Question: Search for an Identity*, Indian Social Institute, New Delhi, 1993.

This is a collection of essays, brought out in the middle of the International Year of the Indigenous Peoples. The identity of the original inhabitants and its protection or their integration with the dominant mainstream have been controversial issues all over the world. The *Adivasis*, the original inhabitants of India, are the tribals of India. They are even denied the indigenous status. Hence, unlike in other countries, they are not accorded legally any special status. Control over natural resources of the regions where they live is the crucial question. They want the right to self-determination in their economic, political and socio-cultural life. Impact of industrialisation on them in Singhbhum district in Chotanagpur and Singrauli is analysed in two essays.

Hingorani, Anand T., (Ed); *Gandhi And Nehru*, Anand T. Hingorani, New Delhi, 1993.

This tome belongs to the *Gandhi Series*, inaugurated in 1941 and with more than fifty titles to its credit. The purpose of the series is to spread Gandhiji's message of Truth and Non-violence throughout the world. The editor/publisher has collected Gandhiji's writings under suitable headings and presented them to the public in attractively printed and beautifully bound volumes in English, Hindi and other Indian and foreign languages. The present volume, replete with photo sections, puts forth a panoramic history of India's freedom struggle under the leadership of Gandhiji and Nehru. It also shows how these two personalities- so unlike in their temperament and divergent in their views- nurtured an indissoluble bond of love and worked together tirelessly for ushering in a new social and economic order, based on equality and brotherhood of man, not only for India but for the entire human race. The usual quick reference tools such as an index, a glossary of Indian words and a short bibliography are provided.

Matthew, P.D.; *Constitution Of India: Simplified*, Indian Social Institute, New Delhi, 1993.

The Constitution being the basic law of the land, an attempt is made here to make the common man aware of his constitutional rights and duties. The matter is presented in a simple language without any legal jargon and in question-answer form. Yet the sequence of parts, articles and schedules of the Constitution is not altered. Also, the Preamble to the Constitution and the latest amendments are included. The introductory chapter offers a bird's eye-view of all the provisions of the Constitution as well as its historical perspectives. The book would be of immense help to general readers and non-law students of social sciences, particularly those appearing for competitive examinations.

Ministry of Finance; *Public Sector Commercial Banks and Financial Sector Reform: Rebuilding for a Better Future, Discussion Paper*, Department of Economic Affairs, Ministry of Finance, Government of India, New Delhi, 1993.

This is a *Discussion Paper* prepared for the Finance Minister's meeting with Chief Executives of twenty- seven public sector commercial banks and leaders of their trade unions.

India's public sector banks have a vital role to play in the new economic environment. They achieved the objectives set for them at the time of nationalisation, only quantitatively, i.e., in terms of spread of their branches, expansion of their deposits and diversification of their borrowers. This quantitative advancement has all along been at the cost of qualitative deterioration, in the sense that their profitability, efficiency and the quality of their loan portfolio have been neglected. This paper articulates the important elements of the recovery programme that the Government, the Reserve Bank of India and the banks themselves have formulated for such qualitative reform. The programme envisages transition of banks through financial, managerial and institutional strengthening but also provides full protection to all depositors of every public sector bank.

Pande, Divya; *Migrant Labour and Gender Dimension: Micro-Analysis of Gender Differentials in Migrant Workers- A Pilot Study in Maharashtra*, Research Centre for Women's Studies, SNDT Women's University, Bombay, 1993.

This field study in Maharashtra is one of the five exploratory studies which form a part of the national study on 'Migrant Labour and Gender Dimensions'. Migration is both a consequence and a cause of various social, cultural and economic compulsions. Women constitute a major part of the migration streams. Marriage and dependence on the breadwinner are the main factors responsible for it. The former is social migration, mostly from one village to another village, whereas the latter is the result of economic constraints experienced by the whole family that migrates, usually to urban locations, in search of employment. There is considerable variation in the migration patterns of women. This study provides a better understanding of it. It is, however, limited to migrant women as workers - brick-kiln workers, construction workers, crop-cutting workers, cane and bamboo workers and the factory workers. Special problems faced by them in the labour market are delineated.

Pursell, Garry and Ashok Gulati; *Liberalizing Indian Agriculture: An Agenda for Reform*, Policy Research Dissemination Centre, The World Bank, Washington DC, USA, 1993.

This paper [WPS 1172] belongs to the World Bank's *Policy Research Working Paper Series* on Trade Policy. Research for this paper was carried on jointly by the Trade Policy Division, Policy Research Department of the World Bank and the National Council of Applied Economic Research in New Delhi. It is part of a long-term research programme undertaken to quantify the impact of India's trade and other incentive and regulatory policies on agriculture. In fact, it is based on the final chapter of the monograph by the authors, entitled *Trade Policy, Incentives and Resource Allocation in Indian Agriculture* (in press).

After Independence India adopted trade and domestic regulatory controls. The process of liberalisation began in 1978, although at a very slow pace. In July 1991, when India embarked on a programme of economic decontrol, it received a great impetus. Nevertheless, the focus of reform has been on manufacturing, leaving agriculture out of its ambit, albeit agriculture accounting for two-thirds of employment in India and 30 per cent of her GDP. The paper covers such topics as 'the existing government interventions and their impact on cultivators' incentives', 'objectives (broad direction) of policy reform in the medium or long term' and 'strategy feasible for the short term', 'recommendations and suggestions on policy reforms' and 'likely implications of this reform agenda and safeguards for the poor'.

Raj, Dev; *Economic Development: Critical Appraisal Of GSP*, Anmol Publications, New Delhi, 1990.

The present volume opens up vistas in one of the most significant areas of International Economics, the Generalised System of Preferences (GSP). The concept of GSP, finalised in October 1970, is now expected to herald a new era of trade relations between the developed and the developing countries. High tariff protection in the developed countries hampers the expansion and diversification of exports from developing countries. Chapter-wise contents of the book include the evolution, concept and progress of the GSP; impact of tariff concessions under GSP on trade flow, the pattern of trade flow before and after the emergence of the GSP and its role in the balance of trade; the pros and cons of operations of the GSP, both of the donor and beneficiary countries; the Indian experience of the utilisation of tariff concessions under the GSP; limitations of the GSP; implications of Non Tariff Barriers for the GSP; future prospects for the GSP; and observations and suggestions. The annexures and the bibliography furnished at the end have further added to the value of the book. It is indispensable for exporters, policy makers and scholars of International Economics, particularly after the signing of the GATT.

Sathe, S.P.; *Towards Gender Justice*, Research Centre for Women's Studies, S.N.D.T. University, Bombay, 1993.

This is the publication by the Research Centre for Women's Studies, S.N.D.T. University, Bombay, in their *Gender Series*. In the words of Prof. Meera Kosambi, the series editor, this series 'seeks to enhance our knowledge of women's status, problems and struggle in all spheres of life.' This monograph is the first book under the rubric 'Gender and Law' of this series. It provides a frame work to elucidate how the interplay of legal and social factors deprives women of the 'equality before law' and of 'the equal protection of law' guaranteed by the Constitution. The monograph comprise three lectures delivered by the author under the auspices of the *Dr. P.B. Gajendragadkar Memorial Lecture Series*, in the Bombay University, with a preface by the author and one also by the series editor. The first lecture traces the history of pre-independence legislation pertaining to women and its social roots as well as repercussions. The second deals with the constitutional provisions for women, their genesis in the Constituent Assembly and their interpretation by various courts. The last one defines the concept of gender justice and chalks out the legal strategies of women's empowerment.

Singer, Hans, Neelamber Hatti and Rameshwar Tandon, (Eds); 1. *Aid and External Financing in the 1990s*, 2. *Joint Ventures and Collaborations*, 3. *Foreign Direct Investments*, and 4. *Adjustment and Liberalisation in the Third World*, Indus Publishing Company, New Delhi, 1991.

These four books are volumes 9, 10, 11 and 12, respectively, of the *New World Order Series*. They contain contributions of several authors, ingeniously arranged into several parts, edited and brought out by the editors. Where necessary, appropriate case studies have been included. The first one, volume 9 of the series, *Aid and External Financing in the 1990s*, brings together studies on such aspects as fungibility and allocation of aid; food aid and disincentive debate; aid, Dutch disease and two gap models; sector lending and other radical proposals; negative financing and options for Latin America; global imbalances and recent initiatives; and emerging issues for institutional coordination.

The editors delineate on each of the contributions in their exceptionally informative introduction and come to a rather gloomy conclusion that the outlook for the 1990s is very bleak for the less developed countries (LDCs), since the indications are that the debt-creating present flow

of capital market lending to the LDCs is not likely to improve.

Joint Ventures and Collaborations, the 10th volume of the series acquaints the readers with international implications of technological change, concerns of host countries and decline of national power, hypotheses on joint venture arrangements, government policy on internationalisation, global sourcing networks, international policy on data flows and rise of 'new' technological paradigm.

The editors' comments in the introduction to this volume are that the LDCs have great opportunities to exploit new technology, and that, with its help, a few among them may dominate the third world. They also point out that in the 1990s, the competitiveness of the newly industrialised countries (NICs) has resulted in governments playing more important role in international competition and protecting national industries.

The third book, the 11th volume of the series, entitled, *Foreign Direct Investments*, expounds certain important facets, like international investments and trade distortions, direct foreign investment and host country policies, direct foreign investment and trade flows, direct foreign investments and promotion measures and export growth, expropriation of direct foreign investment: emerging evidence, Intra-LDCs direct foreign investment and debt flows, evolving pattern of foreign investment: role of Multilateral Investment Guarantee Agency (MIGA).

Editorial critique in the introduction points out the hiatus between the phenomena of internationalisation and integration of economic life being a basic dictum of our age, on the one hand, and, on the other hand, economic thinking still being dominated by national issues, e.g., national economy, national income and balance of payments. Further, the editors review the role of multinational corporations (MNCs) today when the centre of gravity of internationalisation of business activity is shifting from trade to production itself. The total value of international production of a company with foreign operations is already set to exceed by far the exports of goods by major countries. There seems to be no limit to this internationalisation of production. Already a few hundred MNCs dominate the world economy. And the editors predict that it is possible that within the next generation about 400 to 500 of these corporations will own about two-thirds of fixed assets of the world economy. Consequently, the editors affirm that there is intense controversy about the rationale and contribution of direct foreign investment.

Adjustment and Liberalisation in the Third World, is the 12th volume of the series. It surveys the following perspectives of this problem: development policy and structural adjustment; world recession and international imbalances; adjustment and interdependence; policies for reform; the US, Britain and Japan; debt-equity swaps; debt burden and exchange rate; bases for a new approach; and international policies for adjustment.

The editors, in their introduction, stress the absolute urgency of designing adjustment strategy with a human face, that is, the strategy should not only protect the poor during the period of adjustment but also to ultimately integrate them into production economy. That is why the LDCs insist on adjustment with growth and equity, in spite of the growing hostility towards them in the external environment.

The Tribal Domestic Worker At The Crossroads: A Search For Alternatives, A Report On The Status Of Tribal Delhi Domestic Working Women, Indian Social Institute, New Delhi, 1993.

It has been the tradition of the Indian Social Institute to focus attention on the marginalised sections of the society by bringing out well-documented reports. The present, slim but very informative study reflects the status and position of tribals in India, specifically from Chotanagpur region. It has been prepared by seven researchers of the Institute, after three years' experience with

the subject of the study, the female tribal household workers in Delhi. It analyses the institutional and social policies of segregation and subordination of the tribal woman, explores the reasons for large scale migration, investigates into the sources of income in the cities and also observes the changes in the attitude of the migrated tribal working women, their relatives and friends. It explains the methodology used in the research, contains an appendix giving case studies and provides a useful bibliography.

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Maital, S.; 1973; 'Public Goods and Income Distribution', *Econometrica*, Vol. XLI, May, 1973.

Chakravarty, S. 1987; *Development Planning: The Indian Experience*, Clarendon Press, Oxford, 1987.

If a Reference is cited in a Note, the Note may use the shortened reference form:

4. For a critique of recent industrial policy proposals, see Marshall [Marshall, 1983, pp. 281-98].

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