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TAX STRUCTURE DEVELOPMENTS IN INDIA: 1950-90

M. M. Sury

The Indian tax system has undergone major structural changes since Independence. Besides being the main source of revenue, both at the Central and State levels, it is a powerful instrument to realise various socio-economic objectives of national policy. This paper traces and analyses the evolution of the Indian tax system during the post-Independence period. It also critically examines its present features.

Before 1947, India was a dependency of the United Kingdom and encompassed the entire area which now forms the three countries of India, Pakistan and Bangladesh. It consisted of British Indian Provinces, and Indian Princely States. The political and economic scene changed greatly after 1947 when India emerged as an independent country merging in itself the former Princely States (called Part B states) but excluding areas of the other two countries mentioned above[1]. In view of the consequent lack of continuity and comparability between pre- and post- Independence India, we shall present, in the following, only a brief account of the tax system prevailing prior to Independence.

PRE-INDEPENDENCE TAX SYSTEM

The tax system of British India reflected characteristics of a traditional agricultural economy. India exported raw materials and imported manufactures mainly from Britain and other commonwealth countries. Import duties were levied on almost all items of imports and export duties mainly on jute and tea in which India enjoyed a near-monopoly in the world market. Revenues of the Central Government were dominated by the customs duties. Various customs and tariff enactments were passed from time to time the two main being The Sea Customs Act, 1878, and The Tariff Act, 1934. After Independence, the Sea Customs Act and other allied enactments were repealed by a consolidating and amending legislation entitled The Customs Act, 1962. Similarly, the Act of 1934 was repealed by the Customs Tariff Act, 1975.

The other important source of indirect tax revenue for the Central Government was excise duty on a few commodities. Excise taxation in its modern form dates back to 1894 when for the first time a duty at the rate of 5 per cent *ad-valorem* was imposed on cotton yarn of more than twenty counts. Excise at the rate of 6 *annas*[2] per Imperial Gallon was imposed on motor spirit in 1917 and on kerosene at the rate of one *anna* per Imperial Gallon in 1922. Another landmark in the history of excise taxation was the year 1934 in which excises were imposed on sugar, matches and steel ingots. Duties were imposed on tyres in 1941 and on vegetable product, 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 and the mill-made cotton cloth in 1949[3]. Before 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.

Among the direct taxes, the only important source of revenue was the income tax introduced in 1860 to overcome the financial difficulties created by the events of 1857[4]. In 1938-39, of a total Central tax revenue of Rs 73.90 crore, customs accounted for Rs 40.51 crore, Central excises Rs 8.66 crore, and income tax Rs, 13.74 crore (Table 1).

As for the British Indian Provinces, the chief source of revenue was land revenue, followed by Provincial excises, mainly on liquor (Table 1). Although under the Government of India Act, 1935, Provincial Governments were authorised to levy sales tax, they were slow in levying it. The Bombay Province levied a tax on the sale of tobacco in 1938. A retail sales tax on motor spirit and lubricants was imposed by Central Provinces in the same year. A multi-point general sales tax

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was levied in Madras Province at the rate of half a per cent in 1939 under the Madras General Sales Tax Act. The Princely States did not form part of the structure of public finances of British India. They had separate budgets and separate sources of revenue. The maritime States imposed their own customs duties independent of Government of India.

TABLE 1. STRUCTURE OF CENTRAL AND PROVINCIAL TAX REVENUES: 1938-39

(Rs Crore)

Central tax revenues		*Provincial tax revenues**	
Total taxes of which	73.90	Total taxes of which	56.07
Customs	40.51	Land Revenue	25.40
Taxes on Income	13.74	State Excises	13.08
Corporation tax	2.04	Stamps	9.53
Central excise duties	8.66	Registration	1.09
Salt duty	8.12	Devolution of taxes from the centre	3.98

Figures relate to undivided India.
* Data refer to nine provinces including Sind and N.W.F.P.
Source: *Report of the Taxation Enquiry Commission*, 1953-54, vol. 1, Tables 4 (p. 20), 5, (p. 23), and 7 (p. 25), Ministry of Finance, Government of India.

TAXATION POWERS UNDER THE CONSTITUTION

The Constitution of India, which became operative on January 26, 1950, makes elaborate and complex arrangements relating to the distribution of taxes between the Centre and the States. The underlying philosophy is to place at the disposal of each of the two tiers of Government adequate financial resources to enable them to discharge their respective responsibilities under the Constitution. Article 265 of the Constitution specifically states that no taxes shall be levied or collected except by the authority of law. The taxing powers of the Union and the States have been defined through precise entries. Thus, entries 82 to 92B of List I (Union List) in the Seventh Schedule to the Constitution refer to the taxing powers of the Union Government (see Annexure I). Entries 45 to 63 of List II (State List) in the same Schedule specify the taxing powers of the State Governments (see Annexure II). List III (Concurrent List) does not contain any head of taxation which means the Union and the States have no concurrent power of taxation[5]. The residual powers of taxation, as in general legislation, belong to the Union vide entry 97 of List I in the Seventh Schedule. For example, the gift tax imposed by the Union derives its authority from this residuary power.

The Constitution does not provide for any taxing powers for local governments. However, the implication of Article 276 is that the taxes on professions, trades, callings or employment are for the benefit of a State or of a municipality, district board, local board or other local authority. The States on their own may assign any of the taxes in the State List to local bodies. The taxes generally assigned to local governments are property taxes, octroi, and taxes on vehicles.

The property of the Centre is exempt from State taxation under Article 285(1). Likewise, the property and income of the States are exempt from Union taxes [Article 289 (1)], except that Parliament may by law provide for Central taxation of any trading activities of a State which are not incidental to the ordinary functions of Government [Article 289(2)]. In respect of Union Territories, Parliament has the power to impose any tax included in the State List.

Restrictions on Taxing Powers of the States

Although a State Legislature enjoys the power to levy any of the taxes mentioned in List II, in the case of certain taxes, this power is subject to certain restrictions imposed by the substantive provisions of the Constitution. Some examples of these restrictions are: (1) The power to impose taxes on the sale or purchase of goods other than newspapers belongs to the States vide entry 54 of List II in the Seventh Schedule. However, Article 286 ensures that sales taxes imposed by the States do not interfere with imports and exports or interstate trade and commerce which are matters

of national importance. In view of this, Article 286 places the following restrictions upon the powers of the States to enact sales tax legislation: (a) No law of a State shall impose ... a tax on the sale or purchase of goods where such sale or purchase takes place (i) outside the State, or (ii) in the course of imports into or export out of the territory of India; (b) with regard to interstate trade, there are two restrictions: (i) the power to tax sales taking place in the course of interstate trade and commerce belongs to the Union vide entry 92A of List I in the Seventh Schedule, and (ii) the sales tax on interstate sales of 'declared goods' (i.e., goods of special importance in interstate trade) is subject to certain restrictions in terms of the nature of levy and rate of tax. (2) A State Legislature is empowered to levy a tax on professions, trade, calling or employment vide entry 60 of List II in the Seventh Schedule. However, the total amount payable in respect of any one person to the State by way of such tax is not to exceed Rs 2,500 per annum [Article 276(2)].

DISTRIBUTION OF CENTRAL TAXES

Although the taxation powers allocated to the Union and the States are mutually exclusive, yet all the taxes and duties levied by the Union are not meant entirely for the purposes of the Union. The revenues from certain taxes and duties leviable by the Union are totally assigned to or shared with the States to supplement the revenues of the States in accordance with their needs. It is a tribute to the foresight of the founding fathers that they realised that the sources of revenue allocated to the States may not prove sufficient in view of their growing welfare, maintenance, and developmental activities. Hence specific provisions were made to set apart a portion of Central revenues for the benefit of the States. These provisions make a distinction between the legislative power to *levy* a tax and the power to *appropriate* the proceeds of a tax so levied. Accordingly, the Central taxes may be classified under the following categories:

Duties levied by the Union but collected and appropriated by the States (Article 268). These include duties of excise on medicinal and toilet preparations containing alcohol, and stamp duties on bills of exchange etc., as mentioned in entries 84 and 91 of the Union List respectively.

Taxes levied and collected by the Union but assigned to the States (Article 269). These include: (a) duties in respect of succession to property other than agricultural land; (b) estate duty in respect of property other than agricultural land; (c) terminal taxes on goods or passengers carried by railway, sea or air; (d) taxes on railway fares and freights; (e) taxes other than stamp duties on transactions in stock-exchanges and future markets; (f) taxes on the sale or purchase of newspapers and on advertisements published therein; (g) taxes on the sale or purchase of goods other than newspapers, where such sale or purchase takes place in the course of inter-State trade or commerce; and (h) taxes on the consignment of goods (whether the consignment is to the person making it or to any other person), where such consignment takes place in the course of inter-State trade or commerce. These taxes correspond to entries 87, 88, 89, 90, 92, 92A, and 92B in the Union List.

Tax levied and collected by the Union and distributed between the Union and the States (Article 270). This category comprises taxes on income, other than agricultural income (entry 82 of the Union List). Under Article 270, 'taxes on income' does not include a corporation tax[6].

Taxes levied and collected by the Union and which may be distributed between the Union and the States (Article 272). The Union duties of excise come under this provision (entry 84 of the Union List).

Taxes levied, collected, and wholly appropriated by the Union viz., Customs duties, corporation tax, taxes on the capital value of assets (entries 83, 85 and 86 of the Union List) and fees in respect of matters in the Union List.

Rationale for Distribution of Taxation Heads Between the Centre and the States

The Constitutional division of the areas of taxation between the Union and the States rests on economic and administrative rationale. Taxes with interstate base and those in the case of which uniformity in rates is desirable are vested in the Union Government. Also, taxes which the taxpayer can evade by shifting his habitat, or where the place of residence is not a correct guide to the

true incidence of the tax, belong to the Union. Taxes which are location-specific and relate to subjects of local consumption are with the States. Broadly speaking, taxes on production, with some exceptions, are levied by the Union and taxes on sale by the State Governments.

The underlying philosophy of Articles 268 and 269 is to place under the charge of the Union the taxes and duties which have interstate character and require uniformity in rate structure for the smooth conduct of business and trade activities throughout the country. For example, the desirability of uniform rates of stamp duties on bills of exchange, cheques etc. (entry 91) throughout India is understandable for the smooth conduct of commercial and related transactions. Interstate disparities in their rates and tax regulations can hinder, and even disrupt, the free flow of trade and commercial activities. Similarly, entry 92 of List I refers to 'taxes on the sale or purchase of newspapers and on advertisements published therein'. This tax is retained with the Union to protect the freedom of the press, and avoid undue tax burden on the newspaper industry, particularly the regional language newspapers. Commenting upon the soundness of the constitutional arrangements regarding division of taxation powers, the Sarkaria Commission on Centre-State Relations observed: "A well balanced distribution of heads of taxation based on economic and administrative rationale between the Union and the States and adequate arrangements for sharing of resources is vital for the proper functioning of the two-tier polity. We are of the firm view that the basic scheme of the Constitution dividing the field of taxation between the Union and the States and incorporating adequate arrangements for sharing of resources between them, is sound and no major modifications in it are called for" [Sarkaria, Part I, 1988, p. 271].

LEVEL AND COMPOSITION OF COMBINED (CENTRE AND STATES) TAX REVENUE

The level of taxation in a country is traditionally judged in terms of the ratio which taxes bear to some measure of national income aggregate. It is a common practice to use the ratio of tax revenue to GDP at market prices for this purpose. Tax/GDP ratio is generally regarded as an index of relative tax burden on the society. It also reflects the degree of government control over disposition of purchasing power in an economy. For instance, in 1950-51, taxes formed a mere 6.7 per cent of GDP; the ratio increased to 8.3 per cent in 1960-61, to 11.0 per cent in 1970-71, and reached 17.1 per cent in 1987-88 (Table 2, col. 6). Broadly speaking, slightly more than one-sixth of the GDP is now placed in the hands of public authorities in the form of taxes and it may be said that the tax policy has performed well as an instrument of resource mobilisation.

TABLE 2. TRENDS IN THE LEVEL AND COMPOSITION OF TAX REVENUE IN INDIA

(Rs Crore)

Year	GDP at current market prices	Total taxes (Centre & States)	Direct taxes	Indirect taxes	As percentage		
					Col. 3 of Col. 2	Col. 4 of Col. 3	Col. 5 of Col. 3
1	2	3	4	5	6	7	8
1950-51	9,366	627	231	396	6.7	36.8	63.2
1955-56	10,258	768	259	509	7.5	33.7	66.3
1960-61	16,201	1,350	402	948	8.3	29.7	70.3
1965-66	26,145	2,922	734	2,188	11.2	25.1	74.9
1970-71	43,163	4,752	1,009	3,743	11.0	21.2	78.8
1975-76	78,761	11,182	2,493	8,689	14.2	22.3	77.7
1980-81	135,812	19,843	3,268	16,575	14.6	16.5	83.5
1985-86	262,603	43,267	6,252	37,015	16.5	14.4	85.6
1987-88	332,553	56,976	7,483	49,493	17.1	13.1	86.9

Note: The GDP figures available upto 1987-88 are according to the New Series released by C.S.O. in June 1989. The tax-GDP ratios given in this table (col. 6) will not agree with ratios quoted in this paper from other sources because of conceptual differences.

Sources: For column 2, C.S.O., *National Accounts Statistics (New Series) 1950-51 to 1970-80*, 1989, Statement 1, and *National Accounts Statistics, 1990*, Statement 5. For columns 3, 4, and 5, *Report on Currency and Finance* (Various years), Reserve Bank of India.

Reliance on Indirect Taxes

However, a disquieting trend in the development of overall tax structure is the steady decline in the share of direct taxes. In 1950-51, direct taxes accounted for a sizeable 36.8 per cent of total tax collections. But, within a span of 35 years, the share dropped to 14.4 per cent in 1985-86, and further to 13.1 per cent in 1987-88 (Table 2, Col. 7). It is customary to explain the limited role of direct taxes in developing countries in terms of their peculiar circumstances which include large agricultural sector of subsistence nature, small-scale industrial activities, lack of monetisation and accounting practices, and low levels of income. Even a modest exemption limit of personal income tax keeps the vast majority of income earners outside the income tax net. In addition to these underlying reasons, several specific factors both at the Central and State levels have also contributed to the reduced role of direct taxes. These include (a) scaling down of rates of direct taxes, (b) plethora of exemptions/concessions, (c) ineffective administration and (d) tax evasion.

A low share of direct taxes has serious equity implications. Indirect taxes do not allow considerations for the personal circumstances of the taxpayers as do direct taxes. It is not possible to grant exemptions or to allow deductions or to have a progressive rate schedule. It is true that incidence of indirect taxes depends on (a) the selection of commodities for taxation and (b) the rate of taxation on them. It is desirable, therefore, that luxuries and comforts are chosen for heavy taxation with necessities of life either exempted or only moderately taxed. However, in poor countries, the demand for luxury items is limited and is price elastic. On the other hand, the demand for necessities is large and price inelastic. Hence, the tax authorities are obliged to extend the tax net to daily needs. This makes the distribution of indirect tax burden often, though not always, regressive requiring even the poorest of the poor to contribute to public exchequer.

Moreover, a substantial amount of indirect taxes is paid by the Government to itself. Broadly speaking, public expenditure, at all levels, forms one-third of total spending in the country. Customs, excise duties, and sales taxes and the hikes in them entail additional expenditure on the part of the Government. Commodities like motor vehicles, petrol, air conditioners, water coolers, and steel furniture are favourite items for heavy and additional taxation and these are also the items extensively used by defence and civil establishments of the Government. Therefore, a substantial part of indirect tax revenue including the additional tax effort is merely a book transfer and does not reflect increase in real resources at the command of the Government[7].

The declining share of direct taxes caused concern in Government circles which found expression in official documents. The Seventh Five Year Plan noted: "Contrary to the expectation that with economic development the ratio of direct to indirect taxes would increase, as a result of poor performance of direct taxes the Government has been forced to rely increasingly on indirect taxes, which rose from 11.7 per cent of GDP at market prices in 1975-76 to 14.0 per cent in 1984-85, while direct taxes fell from 3.4 per cent to 2.3 per cent during the same period" [Planning Commission, 1985, Vol. I, para 4.60]. The Long Term Fiscal Policy (LTFP), while seeking to correct the imbalance, maintained: "While the predominance of indirect taxes in the present situation is unavoidable, it cannot be gainsaid that a certain balance has to be maintained between direct and indirect taxes. Taxes like the personal income tax have an important role in the tax structure and cannot be substituted by taxes on commodities. It is not easy to tailor commodity taxes to the circumstance of taxpayers in the same way as is possible with the personal income tax. Hence, although reliance on indirect taxation cannot be avoided in the foreseeable future, it is necessary to make a transition to a system whereby income tax makes a larger contribution to revenue. Such transition is not possible without a distinct improvement in the buoyancy of the income tax in response to growth in incomes. An important objective of fiscal policy must be to reverse the decline in the share of direct taxes over the long term"[8].

More specifically, LTFP projected the share of direct taxes to increase from 1.5 per cent of GDP

in 1985-86 to 2.1 per cent in 1989-90 and the share of indirect taxes from 6.3 per cent to 7.3 per cent of GDP over the same period. As it turned out, the share of direct taxes remained constant at 1.5 per cent while the share of indirect taxes increased to 8.1 per cent of GDP (Table 3). The promises held out in the Seventh Plan and the LTFP to reverse the retrograde trend of declining direct taxes remain unfulfilled.

TABLE 3. LTFP PROJECTIONS AND BUDGETARY TRENDS OF CENTRE'S TOTAL, DIRECT, AND INDIRECT TAX REVENUE (NET OF STATES SHARE)

(As Per Cent of GDP)

	1985-86		1986-87		1987-88		1988-89		1989-90	
	LTFP	Actual	LTFP	Actual	LTFP	Actual	LTFP	R.E.	LTFP	B.E.
Total taxes	7.8	8.7	8.2	8.9	8.7	9.1	9.2	9.0	9.4	9.6
Direct taxes	1.5	1.5	1.7	1.5	1.8	1.3	2.0	1.5	2.1	1.5
Indirect taxes	6.3	7.1	6.5	7.4	6.9	7.7	7.2	7.5	7.3	8.1

RE = Revised Estimates; BE = Budget Estimates
Source: *Economic Survey*, 1989-90, p. 82, Table 6.4 (excerpted), Government of India.

TRENDS IN CENTRAL TAXES

Central taxes account for about two-thirds of total tax collections in India[9]. The relative significance of various taxes in Central revenues has undergone major changes since Independence. As in the case of combined (Centre and States) tax revenues, the Central tax structure has also evolved around indirect taxes and the share of direct taxes in Central revenues has declined steadily over the last four decades. Broadly speaking, there are three main elements of Central tax system viz., Union excise duties, customs duties, and income tax. Besides, there are some capital taxes, namely estate duty (now abolished), wealth tax, and gift tax, which, though not of much revenue significance, deserve attention.

Union Excise Duties

In the post-Independence period, a major change in the Indian tax system pertains to the phenomenal rise in the relative revenue significance of Union excise duties. In 1950-51, excise revenue accounted for a modest 16.8 per cent in total Central tax collections (Table 4). But, within a span of 20 years, its share shot upto 54.9 per cent in 1970-71. Thereafter, it declined to 50.5 per cent in 1975-76, to 49.3 per cent in 1980-81, and to 45.2 per cent in 1985-86; for the year 1990-91 it is budgeted at 42.6 per cent. The LTFP noted the following reasons for the decline: "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" [Ministry of Finance, 1985(a), para 4.8].

At the time of Independence, excise taxation was highly selective in terms of commodity coverage. However, with the launching of Five Year Plans in the early fifties, necessary resource mobilisation required widening of excise base; direct taxation had a very narrow base and, because of the policy of import restriction and substitution, the relative revenue significance of customs duties was dwindling. The prospects for extension of excise coverage improved with the increase in industrial production. The Taxation Enquiry Commission (TEC), 1953-54, after having studied the then existing excise system, made important recommendations in terms of tariff structure and commodity coverage[10]. It observed: "It is necessary to emphasize that higher taxation of luxury articles will, by itself, not produce sufficient revenue. For any substantial receipts from commodity taxation and appreciable restraint on consumption in the economy as a whole, it will be necessary to extend excise and sales taxation to the consumption of lower income groups and of goods which are commonly classed as necessaries, including several goods which are included in the Essential Goods Act under Article 286 of the Constitution" [Ministry of Finance, 1954, Vol. I, p. 149].

TABLE 4. TRENDS IN THE LEVEL AND COMPOSITION OF CENTRAL GOVERNMENT TAXES

Central taxes	Value in Rs Crore									Percent to Total Tax Collection								
	1950-51	1955-56	1960-61	1965-66	1970-71	1975-76	1980-81	1985-86	1990-91 (B.E.)	1950-51	1955-56	1960-61	1965-66	1970-71	1975-76	1980-81	1985-86	1990-91 (B.E.)
A + B Total tax collection	404	483	888	2,060	3,206	7,608	13,179	28,671	57,988	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
A. Direct taxes of which	174	171	290	602	870	2,205	3,004	5,657	11,422	43.1	35.4	32.6	29.2	27.1	29.0	22.8	19.7	19.7
(i) Corporation	40	37	111	304	371	862	1,310	2,865	5,289	9.9	7.7	12.5	14.7	11.6	11.3	9.9	10.0	9.1
(ii) Personal income tax	132	131	166	271	473	1,214	1,506	2,509	5,676	32.7	27.1	18.7	13.2	14.8	16.0	11.4	8.7	9.8
(iii) Other taxes*	2	3	13	27	26	129	188	283	457	0.5	0.6	1.5	1.3	0.8	1.7	1.4	1.0	0.8
B. Indirect taxes of which	229	315	599	1,457	2,337	5,403	10,175	23,014	46,566	56.7	65.2	67.5	70.7	72.9	71.0	77.2	80.3	80.3
(i) Customs duties	157	166	170	539	524	1,419	3,409	9,526	20,625	38.9	34.4	19.1	26.2	16.3	18.6	25.8	33.2	35.6
(ii) Union excise duties	68	145	414	898	1,759	3,845	6,500	12,956	24,735	16.8	30.0	46.6	43.6	54.9	50.5	49.3	45.2	42.6
(iii) Other taxes**	4	2	15	20	54	139	266	532	1,206	1.0	0.4	1.7	1.0	1.7	1.8	2.0	1.8	2.1

* These are estate duty, wealth tax, gift tax, and some other taxes of minor revenue significance.

** These are State excise duties, taxes on vehicles, sales tax, octroi, duties on electricity, stamp and registration, entertainment tax (all from Union Territories without legislature) and foreign travel tax.

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

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 excises on them to raise much needed revenue for financing development programmes. The TEC proposed also significant hikes in the rate of duty on commodities like kerosene, sugar, matches, tea, and cloth. It estimated that its proposals regarding enhancement of duties and imposition of new duties would have increased the then existing receipts from Central excises by roughly 40-45 per cent. These recommendations laid the foundation of excise policy for the years to come. In 1955-56, the excise revenue accounted for 30.0 per cent of the total tax revenue of the Central Government; in 1960-61, its share had risen to 46.6 per cent. It was only 16.8 per cent a decade ago in 1950-51.

In early 1960s, there was further expansion in the coverage of excise taxation. In 1960, eleven additional goods were subjected to excise duties including aluminium, pig iron, silk fabrics, and motor vehicles. In 1961, the excise system was extended to sixteen more goods which included, *inter alia*, soda ash, caustic soda, cosmetics and toilet preparations, and copper and copper alloys. In 1962, ten more products including gases, rubber products, plywood, jute manufactures, iron and steel products were covered.

In 1968, duties were imposed on radio-parts, steel furniture, leather cloth, and chocolates. The biggest expansion was in 1971 when 25 additional products including linoleum, ready-made garments, vacuum flasks, pressure cookers, etc., were brought under the excise net. The process of covering more and more items under the excise system reached its pinnacle when, in the 1975-76 budget, Tariff Item No. 68 was introduced encompassing all goods not elsewhere specified. Although the Centre 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.

In the early days of the excise system, emphasis was on specific rates. The emphasis shifted to *ad valorem* rates as the economy started experiencing frequent spells of inflation. In the seventies, there was a major shift from specific rates to *ad valorem* rates. However, beginning with the eighties, this was not only halted but reversed because of disputes over classification and valuation of goods for purposes of excise levies. At present, duties of excise are mainly specific or *ad valorem* though a number of variants of these two forms also exist. 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. Important commodities subject to *ad valorem* rates of duty are: organic chemicals, pharmaceutical products, leather, footwear, ceramic products, tools and implements, machinery and mechanical appliances, electrical machinery and equipment, and miscellaneous manufactured articles. In 1985-86, specific duties (including the specific component of *ad valorem*-cum-specific duties) were estimated to account for 66.7 per cent of the total estimated excise revenue (Table 5). Broadly speaking, specific duties account for two-thirds and the *ad valorem* duties for one-third of the excise revenue.

Excise duties vary within a wide range. Broadly speaking, necessities of life are either exempt or taxed at low rate, comforts and semi-luxuries are moderately taxed while luxuries, tobacco, and some petroleum products stand out distinctly as high-rated tariff items. Capital goods bear a relatively low rate of duty.

Commodities such as sewing machines, water coolers, utensils, pressure cookers, hurricane lanterns, unprocessed fabrics, and bicycles, though on the tariff list, are completely exempt from the payment of duty with a view to reducing tax incidence on the common man. However, a host of other commodities bear a wide amplitude of excise rates. The rate of duty[11] on food products like cheese is 15 per cent and on butter and vegetable oils it is still low at 10 per cent. Sugar, an essential food item of mass consumption, bears a specific duty of Rs 24 per quintal. Excise duty on pharmaceutical products ranges from 12 to 15 per cent *ad valorem*.

TABLE 5. 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
Specific rate	6,095.32	49.3
Ad valorem rate	3,452.22	27.9
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.

Essential household goods are taxed moderately with *ad valorem* rates of duty ranging from 10 per cent on footwear, 15 per cent on clocks and watches, to 30 per cent on washing machines. *Ad valorem* rates of excise duty on semi-luxuries range from 25 per cent on tape recorders and refrigerators to 40 per cent on colour television. Luxury items bear a high rate of duty with cosmetics and air-conditioners subject to 105 and 110 per cent *ad valorem* duty respectively.

Tobacco items are conspicuous for very high rate of duty. *Ad valorem* rate of duty on fine variety of cigars 75 per cent, and on smoking mixtures 225 per cent. Cigarettes bear specific rate of duty based on the length of the stick. In value terms, the rate of duty in certain cases goes as high as 400 per cent. Petroleum products stand out clearly for bearing specific rates of duty. The rate of duty on motor spirit is high, on diesel oil moderate, and on kerosene, used by the poor as fuel and for lighting, very low.

Most capital goods are presently classified under Chapter 84 of excise tariff and are subject to 15 per cent of *ad valorem* rate of duty. Some important items are machine tools, cranes, textile and printing machinery. However, calculating machines, automatic data processing machines, and other office equipment are subject to 20 per cent *ad valorem* duty.

The excise law provides a variety of exemptions and preferences to promote a host of socio-economic objectives like employment generation, export promotion, and encouragement of small industries. To ensure equity and employment, the excise law grants general exemptions to certain sectors of production manned by weaker sections of society and which produce goods consumed mainly by low income groups. Some important sectors under this category using labour-intensive technology are non-power operated units, cottage and village industries, handicrafts, and leather. Recently some estimates have been made regarding the annual cost of protecting or subsidizing employment through concessions in excise duties. It has been estimated that the annual cost of protecting or subsidizing employment through concessions in excise duties works out to Rs 523 per full-time worker in the handloom industry, Rs 881 in khandsari, and Rs 2,669 in cottage sector of the match industry [Dandekar, 1980, Pp. 91, 113, 117].

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. This 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. 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 Indian Standard Institution, and the descriptions and explanatory notes of the Customs Co-operation Council Nomenclature. The domestic trade parlance was also relied upon. Still, tariff classification lacked a definite philosophy and direction, leading to frequent disputes and litigation between the administration and the assessees.

In pursuance of the decision announced in the

budget speech for the year 1984-85, the Government set up, in September 1984, a Technical Study Group on Central Excise Tariff "to recommend to the Government of India the lines on which the Central excise tariff should be revised". The 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 Group, with some modifications to suit the needs of the Indian excise system, was a synthesis of the Harmonised System Nomenclature (HSN)[12], the then existing excise tariff nomenclature, and the understanding in domestic trade parlance. 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 Group was accepted by the Government and a new Central Excise Tariff Act, 1985 came into effect from February 28, 1986.

One perennial problem of the excise system has been the taxation of inputs and the resulting cascading effect on the prices of final products. Before the Second Five Year Plan, 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. It is well-known that excises on inputs lead to cost and profit escalations and also help promote vertical integration in industries to the disadvantage of small-scale sector. To minimise the cumulative effect of excise levies, the Central Excises and Salt Rules, 1944, contained certain provisions under which inputs could be exempted from taxation. For example, 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 instance compressors for refrigerators) to take credit for the said duty in the Proforma Credit Account to get adjustment of duty on the final excisable goods. 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 Committee also recommended the introduction of value added tax at the manufacturing stage, called MANVAT, to tackle the problem of cascading effect of excise taxation [Ministry of Finance, 1978, Part II, p. 306].

In pursuance of the proposal made in the Long Term Fiscal Policy (LTFP) Statement (December 1985), Government introduced a modified system of value added tax or MODVAT with effect from March 1, 1986. The MODVAT scheme provides for instant and complete reimbursement of the excise 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 the new scheme. The credit under MODVAT is available to a manufacturer of a final product only if the final product is dutiable. Credit is allowed only after the evidence of payment of duty is received by the Excise Department. 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. The machines, plant, equipment, 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.

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 the 1987-88 budget. 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.

The Government had made it clear in the LTFP 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 in the 1986-87 budget to retain the collection of excise duties at the earlier level. This was justified on grounds of resource mobilisation for the Plans.

The introduction of MODVAT was claimed by official circles to have the following advantages. (1) It aims at making excise levies transparent so that the effective rate of taxation on a particular commodity could be known. This information would be helpful in undertaking studies of excise incidence the results of which could be used to control and decide excise burden on different commodities. (2) It seeks to avoid cascading effects associated with a traditional turnover tax. It is 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. (3) The scheme would encourage indigenisation because full set-off is available when indigenous inputs are used. The scheme does not permit credit of basic and auxiliary customs duties on imported materials and components. Although MODVAT scheme provides for set-off of countervailing duty, this element of import duty is insignificant in comparison with other elements of import duty, namely, basic and auxiliary duties. (4) The scheme is intended to check excise evasion because credit of input duty cannot be claimed unless actual production is declared to excise authorities. (5) The scheme would 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 would become irrelevant for manufacturers in view of set-off. Previously, selective set-off triggered disputes as regards the eligibility of an input for set-off. The introduction of HSN would further reduce the scope for ambiguities.

The introduction of MODVAT raised doubts about its possible misuses. The Comptroller and Auditor General (CAG) in his 1989 report detected many irregularities in the implementation of the MODVAT scheme. For example, in 41 cases, duty of Rs 173 crore was not levied on waste generated in the course of processing of inputs in respect of which MODVAT credit was taken. As already noted, MODVAT credit is not admissible in case the final product is exempt from duty. According to CAG, 108 manufacturers irregularly took MODVAT credit of Rs 1.75 crore on account of duty paid on inputs used in the manufacture of final products which were exempt from duty. Following the revelations of CAG, the Government constituted in October 1989 a Working Group under the chairmanship of S. Venkatarama to examine simplification of the MODVAT procedure without having adverse revenue effects. The Working Group submitted its report in June 1990 and recommended a number of procedural simplifications and modifications to make the scheme simple to administer and easy to comply with.

Beginning 1986-87, the budget papers classify excise revenue under 139 commodity heads. Of these, the ten top revenue items together account for 47.5 per cent of the total excise yield from basic duties budgeted for the year 1990-91 (Table 6). It is evident that in spite of a generalised system of excise taxation, a substantial part of revenue is derived from a limited number of commodities.

Another notable feature of the present excise system is the taxation of necessities of life. It is true that to ensure equity, many items of mass consumption are exempt from duty as, for example, sewing machines, utensils, pressure cookers, unrefined oils, unprocessed fabrics, shoddy woollen fabrics, hurricane lanterns, etc. Nevertheless, a number of necessities are subject to excise taxation though at moderate rates. Some important items in this category are: sugar, kerosene, vegetable products, soap, matches, pharmaceuticals, footwear, cloth, toothpaste, etc.

Some of these items yield fairly high revenue. Taxation of necessities is regressive and burdensome to the low income groups and therefore undesirable, more so in countries like India where income levels of the masses are very low. From the standpoint of equity, it is necessary to review the desirability of retaining absolutely essential items on the excise tariff list.

TABLE 6. TEN TOP ITEMS OF EXCISE REVENUE (BUDGET 1990-91)

Sr.No.	Excisable Commodity	Revenue in Rs Crore (in descending order)
1.	Cigarettes and cigarilles	1,368
2.	Motor spirit	1,339
3.	Synthetic filament yarn	1,239
4.	Cement all sorts	1,058
5.	Iron and steel	892
6.	Tyres, tubes, and flaps	869
7.	Refined diesel oil	857
8.	Aluminium and articles thereof	609
9.	Plastics and articles thereof	482
10.	Motor cars	472
A.	Total from Sr.No. 1 to 10	9,185
B.	Total estimated revenue from basic duties	19,332
C.	A as per cent of B	47.5

Source: *Receipts Budget*, 1990-91, Annexure 2 (excerpted), Ministry of Finance, Government of India.

Custom Duties

Before Independence, customs duties formed the mainstay of Central tax revenues. But the share of customs revenue in Centre's total tax collections dropped from 38.9 per cent in 1950-51 to 16.3 per cent in 1970-71. Since then the share has increased; it was 35.6 per cent in the budget estimates for the year 1990-91 which is almost what it was in 1950-51 (Table 4). These ups and downs are due to changes in customs policy in response to a series of domestic and international happenings.

In the early 1950s, customs policy remained in turmoil. On the side of imports, because of rapid depletion of sterling balances soon after Independence, Government decided to follow a restrictive import policy. In the very first budget of independent India (1947-48), the Finance Minister outlined the salient features of the restrictive policy as follows: "Broadly speaking, that policy consists of dividing imports into three categories: free, restricted, and prohibited. Imports of food, capital goods, the raw material of industry and certain essential consumer goods are free and no exchange restrictions are placed upon their imports. Consumer goods which are not absolutely essential are licensed on a quota basis, while others which in the context of the economy of this country must be regarded as totally unessential and luxury imports have been altogether prohibited" [Ministry of Finance, 1947-85, p. 8].

India's commitments under General Agreement on Tariffs and Trade (GATT) were given effect to in 1948, the rupee was devalued, alongwith the sterling, against the dollar, in September 1949, and the Korean war broke out in 1950. Being a signatory to GATT, India could not raise, above a certain level, import duties on a wide variety of goods, but enjoyed reciprocal concessions from its trade partners. Imports of articles which enjoyed concessions under GATT constituted 19 per cent of the value of total imports while the value of exports, which received concessions, was 79.6 per cent of our total exports in 1952-53 [Ministry of Finance, 1954, Vol. II, p. 267]. The concessions obtained included items like mica, cashewnuts, and various jute goods. The concessions granted mainly pertained to consumer goods and machinery. Since the actual rates of import duty on machinery, which formed the bulk of imports, were already lower than the rates fixed by the Agreement, the effective concessions were chiefly on consumer goods.

In pursuance of its general policy of gradually replacing quantitative restrictions by higher import duties, the Government raised import duties on a number of items including articles made of paper, cutlery, etc., in the 1955-56 budget. Simultaneously, import quotas were liberalised. The high level of import duties, particularly

on luxury articles, did not leave much scope for raising additional revenues from this source, a fact lamented by the Finance Minister in his 1957-58 budget (final) speech. The worsening foreign exchange crisis reached its climax when in 1965 foreign exchange reserves touched the critically low level of less than Rs 100 crore. Consequently, a drastic rationalisation of the import duty structure was undertaken in that year, resulting in the introduction of a set of three rates of import duty: 40 per cent, 60 per cent, and 100 per cent *ad valorem*. Following devaluation of the rupee in June 1966, these rates were scaled down to prevent the cost of imports going up to the full extent of the devaluation. However, in view of the difficult balance of payments position, the rates were gradually restored in due course to the pre-devaluation levels. Rationalisation of import tariff was again attempted in 1971 when the following four rates of import duty were introduced: 30 per cent, 40 per cent, 60 per cent, and 100 per cent.

Although the Fiscal Commission (1949-50), had supported India's adherence to GATT in view of the need for international co-operation, later when domestic production base was strengthened and diversified, the Government felt it necessary to withdraw from GATT 'bindings'. Following re-negotiations in 1971 and 1973, a host of items 'bound' under GATT were freed to provide protection to domestic industries.

On the side of exports, the devaluation of rupee in 1949 and the Korean boom in 1951-52 considerably increased the demand for India's exports. The comparatively strong position in respect of certain commodities in the world market led to wide profit margins, encouraging the Government to impose or enhance export duty on a number of items including jute manufactures, cotton textiles, and black pepper. According to TEC: "The yield from export duties reached the peak figure of nearly Rs 91 crore in 1951-52, when it formed about 40 per cent of the total customs revenue" [Ministry of Finance, 1954, Vol. II, p. 272]. By 1953-54, the export duty revenue had been reduced to Rs 38.5 crore, but it still formed more than a quarter of the customs revenue. However, soon, the need to promote India's exports led to gradual scaling down of export duties. By mid-sixties, the export duties had virtually disappeared. Following devaluation of the rupee in 1966, export duties were reimposed on a number of goods, but they had to be withdrawn in course of time to ensure competitiveness of our exports in world market (Table 7).

TABLE 7. TRENDS IN THE RELATIVE SHARES OF IMPORT AND EXPORT DUTIES IN TOTAL CUSTOMS DUTIES

(Rs Crore)

Year	Customs duties	Import duties	Export duties	As percentage	
				Col. 3 of Col. 2	Col. 4 of Col. 2
1	2	3	4	5	6
1950-51	157	110	47	70.1	29.9
1955-56	166	128	38	77.1	22.9
1960-61	170	156	14	91.8	8.2
1965-66	539	537	2	99.6	0.4
1970-71	524	461	63	88.0	12.0
1975-76	1,419	1,336	83	94.1	5.9
1980-81	3,409	3,292	117	96.6	3.4
1985-86	9,526	9,443	83	99.1	0.9
1990-91 (B.E.)	20,625	20,577	48	99.8	0.2

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

The enactment of the new Customs Tariff Act, 1975, was a landmark in the history of customs tariff in India. The revised nomenclature for customs tariff was recommended by the Tariff Revision Committee, set up in 1964. Though the Government accepted the recommendations of the Committee, the Bill to implement the revised nomenclature could only be passed in 1975 and came into effect from August 2, 1976. The Act of 1975, which replaced the Indian Tariff Act, 1934, is based on the Customs Cooperation Council Nomenclature (originally known as Brussels

Tariff Nomenclature). The First Schedule to the Act contains import tariff while the Second Schedule deals with export tariff.

The Indirect Taxation Enquiry Committee (1978) examined at length the structure of import duties and recommended its rationalisation on the following lines: "(a) a levy adequate to give the degree of protection deemed necessary for particular products, (b) a revenue element, which would generally be the countervailing duty, being equal to the excise duty leviable on the same or similar domestic product, and (c) a regulator element which will be based on such factors as reinforcing import restrictions, preventing excess profits on account of scarcity of products in domestic market, and generally to regulate imports from the angle of conserving foreign exchange" [Ministry of Finance, 1978, Part II, p. 139].

As a further measure to rationalise and modernise customs administration, the Parliament passed the Customs Tariff Amendment Act, 1985, to adopt the Harmonised Commodity Description and Coding System. The new commodity classification became operative from February 28, 1986. Similarly, India adopted the GATT Valuation Agreement (Valuation Code) on August 16, 1988. The GATT Valuation Code lays down broad principles for valuation of goods for levy of customs duty.

The need for import tariff rationalisation was underlined in the Long Term Fiscal Policy (LTFP) announced in 1986. In carrying it out, the LTFP distinguished between the following broad categories of imports: Capital goods; Raw Materials; Other intermediate goods including components; Essential consumer goods like foodgrains, edible oils, and life saving drugs; and Non-essential consumer goods. Essential goods were either to remain exempt or bear low rates of import duties while non-essential items were either to remain banned or subjected to high import tariff. Regarding the first three categories of goods the LTFP observed: "Ideally, in the long run, there is a strong case for subjecting all capital goods, raw materials, components and other intermediate products to the same rate of nominal tariff. This system, if it could be implemented, would have several import advantages. First, the substitution of the present multiplicity of nominal tariff rates by a single rate would constitute an enormous simplification for both trade and industry as well as for the customs administration. Second, this would vastly reduce incentives for misclassification of imports to evade taxes. Third, a single nominal rate of import duty would assure a uniform rate of effective protection (that is, protection of value added) at different stages of production of intermediate and capital goods. This would encourage the economy to specialise in those activities in which it has competitive strength" [Ministry of Finance, 1985(a), Part 6.26].

However, the LTFP cautioned that a major deviation from the present pattern of import tariff was not immediately feasible. Domestic industries had grown under different levels of protection and were in different stages of maturity. The rationalisation of import tariff has to be phased over a long period providing some differentials in import tariff short of a uniform system of duties.

Presently, various types of customs duties are imposed by the Government under different Acts of Parliament. However, Customs Act, 1962, is the main enactment under which goods imported into India are chargeable to a duty popularly known as basic custom duty. Apart from this, there is another important import duty, the additional duty of customs levied under the Customs Tariff Act, 1975. The rate of this duty, also known as countervailing duty, is equal to the excise duty on like articles if produced or manufactured in India. The underlying philosophy of a countervailing duty is to ensure that the protection provided by the import duty to domestic industry is not reduced. Till the early sixties, countervailing duty was levied on selected basis on products where the excise duty was considered to erode the margin of protection to the domestic industry. In course of time when the number of excisable goods increased, the selective use of countervailing duty was found to be inadequate and complicated. Therefore, the Indian Tariff Act, 1934, was amended in 1963 to insert a new section

2A to provide for the levy of countervailing duty in all cases where excise duty was leviable on a similar indigenous commodity.

Customs revenue is mainly composed of import duties levied on a wide range of commodities. In the budget estimates for 1990-91, import duties account for Rs 20,375 crore (98.8 per cent) out of a total customs revenue of Rs 20,625 crore. Apart from revenue function, import duties act as policy instrument to provide protection to domestic industry, conserve and ration scarce foreign exchange, and frame general international trade policy.

As regards the tariff pattern, import duties are mostly *ad valorem* in nature with the notable exceptions of caustic soda and PVC resin which bear specific rates of duty at the rate of Rs 3,500 and Rs 7,500 per tonne respectively. Essential consumer goods like foodgrains, edible oils, life-saving drugs, and life saving medical equipment bear nil or low rate of import duty. The law provides for duty-free import of hospital equipment, apparatus, and appliances by Government-controlled hospitals. Conversely, the import of non-essential consumer goods is either banned or subjected to a very high rate of duty ranging from 200 to 300 per cent *ad valorem*.

Consequent upon the rationalisation of import tariff on capital goods in the 1987-88 budget, the rate of import duty on general machinery is 85 per cent *ad valorem*. Import duty on components for machinery is 15 per cent below the applicable rate on complete machines. This differential, in line with the recommendations of the LTFP, is intended to encourage the domestic production of capital machines instead of their total imports. Imports of capital goods for certain preferred sectors bear relatively low rates of duty. For example, duty on equipment for fertiliser plants is 15 per cent *ad valorem* and on machines, equipment, and tools for gem and jewellery 25 per cent *ad valorem*. Another preferred sector for fiscal incentives is the electronics industry which has made rapid progress in recent years. In the 1988-89 budget, a uniform concessional import duty of 60 per cent *ad valorem* was fixed in respect of 280 items of machinery for the electronics sector. In the same budget, the duty on moulds, tools, and dies required by the electronics industry was reduced from 60 per cent to 30 per cent *ad valorem* with the underlying purpose of indigenisation and development of electronics and computers.

High rate of import duty in some cases is meant to protect domestic industry. For example, in the 1986-87 budget, import duty on certain machine tools, where domestic production has been established, was fixed at 110 per cent while on certain other machine tools and instruments, where domestic production is negligible, the duty was fixed at 35 per cent *ad valorem*. Besides, various other considerations influence the pattern of import tariff on different items. For instance, in an effort to encourage the production of fuel-efficient motor vehicles, import of components for such vehicles bear a moderate duty of 55 per cent *ad valorem*. Some other items subject to moderate duty are flax and ramie fibres (40 per cent), solar cells (45 per cent), and engineering plastics (60 per cent), *ad valorem*. Items bearing high rates of import tariff include synthetic organic dye stuffs (150 per cent), specified data communication equipment (100 per cent), and 235 specified drug intermediates (90 per cent) *ad valorem*.

Like excise levies, the revenue from import duties is also concentrated in a select few commodities including petroleum oils and crude, electrical machinery, organic chemicals, project imports, plastics, etc. These are the items which form the bulk of India's imports and hence customs revenue. The budget papers of the Government classify revenue from import duties under 52 specific commodity heads. Table 8 lists ten top items of import duty revenue which together account for Rs 12,079 crore (59.3 per cent) of the total import duties of Rs 20,375 crore budgeted for the year 1990-91.

At present the share of export duties in customs revenue is negligible (Table 7). But, although export duties have lost their importance from the revenue angle, they have not been completely dispensed with. When there is considerable disparity between the domestic and international

prices of certain goods enjoying comparatively strong position in export market, export duties are levied to mop up a part of the profits of the exporters or importers. Export duty on an item is levied after considering such factors as domestic production and likely exportable surpluses, demand for the item in the foreign markets, changes in exchange rates, and the prices prevailing in the international market. At present, export duties are levied on a few commodities such as coffee, mica, black pepper, hides, and skins and leather. We may note that Government enjoys powers to impose and enhance export duties without prior approval of Parliament on the consideration that such duties do not fall on the Indian consumers.

TABLE 8. TEN TOP ITEMS OF REVENUE FROM IMPORT DUTIES (BUDGET 1990-91)

Sr.No.	Description of the Commodity	Revenue in Rs Crore (in descending order)
1.	Petroleum oils and crude	1,874
2.	Electrical Machinery	1,785
3.	Organic Chemicals	1,550
4.	Project imports	1,515
5.	Machinery	1,500
6.	Plastics and articles thereof	1,225
7.	Iron and non-alloy steel	910
8.	Baggage	700
9.	Copper	570
10.	Primary materials of iron and steel	450
	A. Total From Sr.No. 1 to 10	12,079
	B. Total import duties	20,375
	C. A as per cent of B	59.3

Source: *Receipts Budget*, 1990-91 Annexure 1 (excerpted), Ministry of Finance, Government of India.

Income Tax

Income tax was introduced in India by the British in 1860 to overcome the financial difficulties created by the events of 1857. Since then, the form of income tax has undergone a series of changes to meet the changing requirements of government finance and national objectives.

Taxation of income in India may be classified into two broad categories: (a) taxation of agricultural income and (b) taxation of non-agricultural income. Entry 82 of List I in the Seventh Schedule of the Constitution empowers Parliament to levy 'taxes on income other than agricultural incomes'. Taxation of agricultural income is a State subject and is discussed subsequently. Income tax is levied and collected by the Centre but the proceeds are shared with the States under Article 270 of the Constitution. The sharing formula is recommended by the Finance Commission, appointed every five years.

Soon after Independence, the Government appointed the Income Tax Investigation Commission (1947) under the Chairmanship of Sri Srinivasa Varadachariar to (a) investigate and report on all matters relating to taxation of income, with particular reference to preventing evasion and avoidance, and (b) to investigate specific cases referred to the Commission by the Government. The Commission submitted its report in 1948 and recommended several changes in the law to plug loopholes in the income tax system. For example, it recommended that the law should be amended so as to allow speculative losses to be set off only against speculative gains. A number of Commission's recommendations were incorporated in the law by the Income Tax (Amendment Act), 1953.

The Taxation Enquiry Commission (TEC), appointed under the Chairmanship of Mr. John Mathai in early 1953, examined in detail the entire field of taxation at the Central, State, and Local Government levels. Regarding income tax, the TEC made several recommendations some of which dealt with broad structure of taxation while others related to matters of detail like inclusion and exclusion of certain categories of income from taxation, grant of concessions to promote objectives of economic policy and so on. A notable recommendation of the TEC pertained to the withdrawal of the concession relating to earned income beyond a certain level of income

which it suggested should be Rs 24,000. Agreeing with this recommendation that earned income relief should not be allowed on higher brackets of income, the Government, as a first step, reduced the allowance in the 1955-56 budget by stages on incomes in excess of Rs 25,000, the concession ceasing when the level of Rs 45,000 was reached. Under the recast scheme an allowance of 20 per cent subject to a maximum of Rs 4,000 was granted to earned incomes not exceeding Rs 25,000. For incomes in excess of this amount the allowance of Rs 4,000 was reduced at the rate of 20 per cent of the excess over Rs 25,000 so that for an earned income of Rs 45,000 the allowance was reduced to nil. From 1957-58, the relief was given in the form of a lower surcharge on earned income than on unearned income. The surcharge was fixed at 5 per cent of the tax on earned incomes upto Rs 1 lakh and 10 per cent on incomes in excess of that sum while for unearned incomes, a uniform surcharge of 20 per cent was imposed. However, the distinction between earned and unearned incomes, introduced in 1945, under which the earned income was treated leniently was completely abolished from April 1, 1968, and it was widely criticised as a retrograde fiscal measure.

The present law of income tax is governed by the Income Tax Act, 1961 which is amended from time to time by the annual Finance Act and other amending Acts. The Act which came into force on April 1, 1962, replaced the Indian Income Tax Act, 1922 which had remained in operation for 40 years. Income tax revenue originates mainly from two taxpaying entities viz., companies, and individuals. For the assessment year 1986-87, individuals accounted for 74.7 per cent of returns filed, 41.9 per cent of income returned, and 28.0 per cent of tax payable. For the same year, companies accounted for 0.6 per cent of returns filed, 35.0 per cent of income returned, and 60.2 per cent of tax payable. The balance is due to Hindu Undivided Families (5.3 per cent of returns filed, 3.6 per cent of income returned, and 3.3 per cent of tax payable) and Firms (18.5 per cent of returns filed, 18.7 per cent of income returned and 7.5 per cent of tax payable) [Ministry of Finance, 1986-87, p. IV].

The Government appointed, in March 1970, the Direct Taxes Enquiry Committee (DTEC), under the chairmanship of Justice K. N. Wanchoo. In its report published in December 1971, the Committee made a number of far-reaching suggestions for unearthing black money, preventing evasion and avoidance of taxes, and reducing arrears. In particular, the Committee recommended reduction in the rates of direct taxes which in its view were mainly responsible for tax evasion because they made tax evasion profitable and attractive. Pursuant to this recommendations, the maximum marginal rate of income tax was reduced from 97.7 per cent in 1973-74 to 77 per cent in 1974-75, and further to 66 per cent in 1976-77; DTEC had recommended a maximum marginal rate of 75 per cent [Ministry of Finance, 1971, p. 19]. The trend was temporarily reversed during the brief Janata Government rule at the Centre. The maximum marginal rate was increased from 66 per cent in 1976-77 to 69 per cent in 1977-78, and further to 72 per cent in 1979-80. With the Congress Government returning to power at the Centre in 1980, the maximum marginal rate of individual income tax, after a series of revisions, stands reduced to 54 per cent (including employment surcharge of 8 per cent), applicable for the financial year 1990-91 (Table 9).

TABLE 9. TRENDS IN THE MAXIMUM MARGINAL RATE OF INDIVIDUAL INCOME TAX

Year	Top marginal rate including surcharge (per cent)
1973-74	97.7
1974-75	77.0
1975-76	"
1976-77	66.0
1977-78	69.0
1978-79	"
1979-80	72.0
1980-81	66.0
1981-82	"
1982-83	"
1983-84	67.5
1984-85	61.9
1985-86	50.0
1986-87	"
1987-88	52.5
1988-89	"
1989-90	54.0
1990-91	"

Note: The maximum marginal rate of individual income tax is applicable to incomes over Rs 1 lakh.
Source: Government of India, Finance Acts (various years).

The underlying philosophy of soft rates is to promote tax compliance and control the growth of black money. However, the National Institute of Public Finance and Policy in a recent report has concluded: "Thus, where the ratio of tax-evaded income to GDP was estimated to range from 3.7 per cent to 5.7 per cent in 1975-76, the corresponding range in 1980-81 is between 4.2 per cent and 8.6 per cent" [Ministry of Finance, 1985(b), p. 161].

Till the year 1959-60, a company was deemed to have paid income tax on behalf of its shareholders on dividends declared out of income on which the company had paid income tax[13]. Each shareholder was entitled for a tax credit against his income tax liability to the tune of the tax deemed to have been paid on his behalf by the company. The tax credit entitlement of a shareholder was determined on the basis of gross dividend income instead of net dividend income, and the rate at which the tax deemed to have been paid by the company was the rate applicable to companies in that given year in which the dividend was declared or paid. The scheme of tax credit to shareholders was discontinued with effect from the financial year 1960-61 and since then all dividends received by shareholders are subject to personal income tax. In other words, a company is regarded as separate entity for purposes of income tax. Thus, presently dividends are taxed twice, first in the hands of the company and second in the hands of the shareholders. This is an example of double taxation of a source of income i.e. dividends. Company or corporation tax is an important source of direct tax revenue for the Central Government because it is not shareable with the States. Although the concept of taxable income and the procedure for its computation is the same for all taxable entities, except for minor differences, the income tax rates very among the different entities. Thus, the tax on companies is essentially a proportional tax while the tax on individuals is progressive. The rate of tax on companies differs depending on whether a company is domestic or foreign, wide-held or closely-held, industrial or non-industrial. In general, a domestic company is taxed at a lower rate than a foreign company. Among the domestic companies, widely-held companies bear lower tax rates as compared to closely-held companies. Again, among the domestic companies, the industrial companies are taxed at a lower rate than the non-industrial companies. The rates of income tax on individuals and companies applicable for the assessment year 1991-92 are given in Annexure III of this article.

The decline in the relative share of direct taxes in Central tax collections has already been noted (Table 2). The decline is mainly due to dwindling share of personal income tax in Central taxes. In 1950-51, personal income tax accounted for almost one-third (32.7 per cent) of Central tax collections. However, its share has declined over the years and is estimated to be less than one-tenth (9.8 per cent) in the budget for 1990-91 (Table 4). In the case of corporation tax, the share was 9.9 per cent in 1950-51 while in the 1990-91 budget it is 9.1 per cent. In the intervening period, however, moderate changes are noticeable in the share of corporation tax (Table 4).

As in other countries, exemptions and concessions are integral part of Indian income tax system. However, their wide amplitude has adversely affected revenue yield. The various exemptions/concessions, each with a rationale of its own, have the combined effect of eroding the tax base and impairing the progressivity of the tax system. After the withdrawal of investment allowance and the investment deposit account scheme in the 1990-91 budget, the only major concessions available to business sector are those relating to foreign exchange earnings and for setting up new industrial undertakings. However, wide-ranging concessions are available to individual taxpayers under different sections of the Income Tax Act. Thus, section 80L grants a deduction to individuals to the extent of Rs 7,000 in respect of income derived from certain investments like in National Savings Certificates. Section 80CCA provides for a deduction from income of 100 per cent of investment (upto a maximum of Rs 40,000 per annum) in deposits in the National Savings Scheme. However, withdrawals from the account are treated as income and taxed as such. Section 80CCB provides for a deduction to the extent of 100 per cent for amounts invested (up to Rs 10,000) in units of notified equity-linked savings schemes of certain mutual funds. However, just as in the case of section 80CCA, when any amount is returned it is treated as the income of the year in which the amount is returned. Section 88 (formerly section 80C) provides for a rebate on tax to the extent of 20 per cent of the sum invested in National Savings

Certificates, provident funds etc. The maximum amount eligible for rebate is Rs 50.000 thereby permitting a maximum rebate of up to Rs 10,000. Section 88A (formerly section 80CC) also provides for a tax rebate calculated at the rate of 20 per cent of the investment in eligible issues of shares or units. The upper limit on investment is Rs 25,000 thereby providing a maximum rebate of Rs 5,000. In view of these concessions and by proper investment planning or what the tax advisers call 'portfolio' planning, it is possible not only to reduce but to totally eliminate the tax liability.

Little surprise if the total number of income taxpayers is 70 lakh, representing 2.5 per cent of the country's working population. The proliferation of exemptions/concessions has led to complexities in the income tax law, obscuring its evaluation, particularly from equity angle. Another disturbing aspect of the operation of income tax is the frequency of tax amendments, causing considerable confusion and litigation among the taxpayers and tax collectors. An example of frequent corporate tax amendments in granting concessions is presented in Table 10. For a simpler and efficient income tax system, concessions should be kept at the minimum and used selectively for very genuine eventualities.

TABLE 10. CHANGES IN CONCESSIONS IN CORPORATE TAXATION

Year	Change introduced	Effective
1974	Development rebate (introduced in 1955) withdrawn	June 1, 1974
	Initial Depreciation allowance introduced	June 1, 1974
1976	Initial depreciation allowance withdrawn	April 1, 1976
	Investment allowance introduced	April 1, 1976
1986	Investment allowance withdrawn	April 1, 1987
	Invest deposit account scheme introduced	April 1, 1986
1988	Investment allowance reintroduced	April 1, 1988
1990	Investment allowance withdrawn	April 1, 1990
	Investment deposit account scheme withdrawn	April 1, 1990

Estate Duty, Wealth Tax, and Gift Tax

Estate duty was introduced in India in 1953 when the Estate Duty Act of that year imposed a duty on the capital value of all property passing on the death of any person on or after October 15, 1953. The rationale for the tax was to curb the perpetuation of income and wealth inequalities through inheritance. However, pursuant to the recommendations of the Economic Administration Reforms Commission, 1981-83, estate duty was abolished with effect from March 16, 1985. The duty was abolished on the ground that it had failed in both its objective viz., to reduce the accumulation of dynastic wealth and raise resources for the Government. The Commission noted that 96.8 per cent of the assessments in 1980-81 related to the estates whose principal value was less than Rs 3 lakh [Economic Administration Reforms Commission, 1981-83, p. 33]. In 1985-86, estate duty yielded a paltry sum of Rs 23 crore out of a total Central direct tax collection of Rs 5,657 crore in that year (Table 11). However, according to some experts abolition of estate duty was a retrograde fiscal step and that, instead of improving and strengthening the duty, the baby was thrown out with the bath water.

An annual tax on net wealth has been in operation in India since April 1, 1957. It was introduced as part of the integrated system of direct taxation recommended by the British economist Nicholas Kaldor in 1956. The rationale of wealth tax lies essentially in furthering the equity objective of tax policy. Since ownership of wealth is the main source of economic inequalities in India, a tax on wealth is intended to reduce its concentration in a few hands. But, contrary to its purpose, the maximum marginal rate of wealth tax, applicable to net wealth above Rs 15 lakh, has been gradually lowered from 8 per cent in 1973-74 to 2 per cent at present.

A tax on *inter vivos* gifts was imposed in India under the Gift Tax Act, 1958. The Act was enacted as part of an integrated scheme of taxation of income, wealth, expenditure[14], and gifts. The legislation was intended also to supplement the imposition of estate duty in 1953. Gifts from one person to another provide a convenient device to avoid or reduce liability under income tax, wealth tax, and estate duty. In this sense, the objective of

gift tax is to ensure that transfers of wealth which are effected during the lifetime of a person bear a tax liability similar to the levy of estate duty on property passing on the death of a person.

Till recently, the rate structure of gift tax was quite progressive, ranging from 5 per cent on the value of taxable gifts not exceeding Rs 20,000 to 75 per cent on the value of taxable gifts in excess of Rs 20 lakh. However, in the 1986-87 budget, the 5 per cent to 75 per cent rate-range was abolished and replaced by a 30 per cent flat rate. Another major change was introduced in the 1990-91 budget when the existing gift tax on donors was substituted with a donee-based gift tax. According to the new provisions, there will be a basic exemption of Rs 20,000 for each year and gift tax will be levied on a graduated scale in case the gifts received in any year exceed the exemption limit. The rates are: 20 per cent in the slab of Rs 20,000 to Rs 50,000; 30 per cent in the slab of Rs 50,000 to Rs 2 lakh; and 40 per cent on the value of gifts in excess of Rs 2 lakh. The purpose of the change from donor-based to donee-based gift tax was stated by the Finance Minister as follows: "At present, gifts are taxed in the hands of the donor, but there is no limit on the amount which a donee can show as having been received by way of gifts. Because of this, the mechanism of gifts is used to split up capital and launder black money. Some instances have also come to notice recently where attempts have been made to explain away wasteful and ostentatious expenditure on marriage receptions and other functions as having been financed out of gifts. With a view to curbing such practices, I have decided to substitute the present gift tax on donors with a donee-based gift tax" [Ministry of Finance, 1990(a), Part B]. The Minister made it clear that the purpose of the donee-based gift tax was not to raise revenue but check tax evasion and conspicuous consumption.

The yield from estate duty (now abolished), wealth tax, and gift tax has never been of much significance in the Central tax structure (Table 11). Their combined share in total Central tax collection declined from 1.36 per cent in 1960-61 to 0.79 per cent in 1970-71, and further down to 0.32 per cent in 1990-91 (B.E.) and in the direct tax collections of the Centre from 4.17 per cent in 1960-61 to 2.93 per cent in 1970-71, and 1.63 per cent in 1990-91 (B.E.) Though non-entities from revenue standpoint, these decorative taxes have created an aura of excessive tax burden on the well-to-do classes.

TABLE 11. RELATIVE SIGNIFICANCE OF WEALTH TAX, GIFT TAX, AND ESTATE DUTY IN CENTRAL TAX COLLECTIONS

(Rs Crore)

Year	Total Central tax collections	Central direct tax collections	Collections from				Col. 7 as per cent of	
			Wealth tax	Gift tax	Estate* duty	Total 4+5+6	Col. 2	Col. 3
1	2	3	4	5	6	7	8	9
1960-61	888	290	8	1	3	12	1.36	4.17
1965-66	2,060	602	12	2	7	21	1.02	3.48
1970-71	3,206	870	15	2	8	25	0.79	2.93
1975-76	7,608	2,205	54	5	11	70	0.92	3.19
1980-81	13,179	3,004	67	7	16	90	0.68	3.00
1985-86	28,671	5,657	153	12	23	188	0.65	3.32
1990-91 (B.E.)	57,988	11,422	175	9	3	187	0.32	1.63

* Estate duty was abolished w.e.f. March 16, 1985. Yields for 1990-91 (B.E.) represent collections on estates passing on deaths occurring before the abolition.

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

TRENDS IN STATE TAXES

Table 12 highlights changes in the level and composition of States' own tax revenues. From a modest amount of Rs 221 crore in 1950-51, revenue from States' taxes grew consistently over the years and amounted to Rs 25,120 crore in the budget estimates for 1989-90. As in the case of Central taxes, the share of direct taxes at the State level has dropped from 36.7 per cent in 1950-51 to 10.6 per cent in 1989-90 (B.E.). Land revenue which was the principal direct tax and which formed the bulwark of States tax revenue during pre-Independence and even in the early post-Independence period has receded into

TABLE 12. TRENDS IN THE LEVEL AND COMPOSITION OF REVENUE FROM STATES' TAXES

		Value in Rs Crore						Percent to Total Revenue from States' Taxes					
		1950-51	1960-61	1970-71	1980-81	1985-86	1989-90 (B.E.)	1950-51	1960-61	1970-71	1980-81	1985-86	1989-90 (B.E.)
A+B	Revenue from State's taxes	221	454	1,527	6,616	14,551	25,120	100.0	100.0	100.0	100.0	100.0	100.0
A.	Direct taxes of which	81	153	252	685	1,484	2,666	36.7	33.7	16.5	10.4	10.2	10.6
1.	Land revenue	49	97	113	145	353	631	22.3	21.3	7.3	2.2	2.4	2.5
2.	Agricultural income	3	10	10	46	127	82	1.6	2.1	0.7	0.7	0.9	0.3
3.	Stamps & registration fees	26	43	122	425	853	1,550	11.7	9.5	7.9	6.4	5.9	6.2
4.	Other direct taxes*	2	3	7	67	151	403	1.0	0.6	0.5	1.0	1.0	1.6
B.	Indirect taxes	140	301	1,275	5,931	13,067	22,454	63.3	66.2	83.5	89.6	89.8	89.4
1.	Sales tax	58	158	755	3,887	8,428	14,545	26.1	34.9	49.4	58.7	57.9	57.9
2.	State excises	48	53	194	824	2,052	3,510	21.5	11.6	12.7	12.5	14.1	14.0
3.	Taxes on vehicles	7	33	104	415	826	1,467	3.4	7.3	6.9	6.3	5.7	5.8
4.	Other indirect taxes**	27	56	222	804	1,761	2,932	12.1	12.3	14.5	12.2	12.1	11.7

* Profession tax, surcharge on cash crops, urban immovable property tax.

** Taxes on passengers and goods, electricity duty, entertainment, and cess on sugarcane etc.

Source: *Report on Currency and Finance*, Vol. II, (various years), Reserve Bank of India.

insignificance over the years (Table 12). In some of the States, land revenue has been abolished altogether. Agricultural income tax which could have been an important source of revenue has remained negligible till date; later, in the following, we shall examine the case. Among the indirect taxes of the States, sales tax is the most important and a growing one. We may first turn to it.

Sales Tax

The right to levy sales tax belongs to the State Governments vide entry 54 of List II of the Seventh Schedule of the Constitution of India. Each State is empowered to collect tax on the sale of goods within its territory according to the rules framed by it. Different State Governments levy sales tax on a wide range of commodities at different rates with different procedures and rules for its collection. It is levied not only on consumer goods but also on raw materials and capital goods. The Central Government prescribes the ceiling rate of sales tax on goods in inter-State trade and, for three important commodities viz., textiles, sugar, and tobacco, imposes, in lieu of sales tax, additional duties of excise the proceeds of which are distributed among the States. Sales tax revenue of States has grown steeply and now forms the mainstay of States' tax revenue. Its share in the total States' tax revenue has increased from 26.1 per cent in 1950-51 to 57.9 per cent in the budget estimates for 1989-90 (Table 12).

The operation of sales tax has created a host of problems particularly for the business community in view of the different sales tax practices of the various States. Sales tax in a State may take the form of a single-point, double-point and/or multi-point levy. Multi-point sales tax, a kind of general turnover tax, is imposed on some commodities in a few States viz., Kerala, Karnataka, Andhra Pradesh, and Tamil Nadu. A few commodities are subject to double-point sales tax in Maharashtra, and Gujarat. However, single-point is the main type of sales tax imposed on most commodities in all the States. Single-point tax may either be levied at the first point of sale i.e., at the manufacturer's level, or at some other point of sale as, for example, at registered retailer's level. In most States a significant part of sales tax revenue originates from first-point levy. The rate structure of sales tax is further complicated in view of different lists of exemptions/concessions, numerous nominal rate categories, and different administrative procedures in different States.

Agricultural commodities like cereals and pulses are either exempt or bear low rate of 2 to 3 per cent. For most commodities, the rate of single point levy varies between 4 to 8 per cent. However, in the case of luxury items like motor cars, refrigerators, and VCR the rate may go up to even 15 per cent in some States. The rate of multi-point levy is generally about 4 per cent. Different rates on the same commodities in different States often lead to uneconomic diversion of trade as also of production centres. It is not uncommon for people of one State making purchases in other States to avoid or reduce sales tax liability.

A notable aspect of the Indian sales tax system is the taxation of inter-State trade. Before the Constitution came into operation, the sales tax laws in different States were so fashioned as to enable them to tax goods 'exported' from one State to another. Exports to and imports from foreign countries were also subjected to sales tax. However, with the Constitution coming into operation in 1950, new regulations were made regarding the taxation of inter-State trade. For example, the Constitution urged the States not to tax sales or purchase of essential goods except with the previous consent of the President. In view of this restriction and certain other anomalies, the Constitution was amended by the Sixth Amendment Act of 1956. Under this Amendment, the Parliament was given the power to impose 'taxes on the sale or purchase of goods other than newspapers, where such sale or purchase takes place in the course of inter-State trade or commerce'. Consequently, the Central Sales Tax (CST) Act was passed in 1956. The following three main objectives of the CST Act were stated in its Preamble. (1) To formulate principles for determining when a sale or purchase of goods takes place in the course of inter-State trade or in

the course of import into or export from India. (2) To provide for the levy, collection, and distribution of taxes on sale of goods in the course of inter-State trade or commerce. (3) To declare certain goods to be of special importance in inter-State trade and specify the restrictions to which State laws imposing taxes on the sale and purchase of such goods of special importance shall be subject.

The regulations contained in the CST Act provide, *inter alia*, for a degree of uniformity by prescribing a maximum rate of sales tax on certain goods considered important for the whole country. According to Section 3 of the CST Act, a sale or purchase of goods is deemed to take place in the course of inter-State trade if it (a) occasions the movement of goods from one State to another, or (b) is effected by a transfer of documents of title to the goods during their movement from one State to another. Section 14 of the Act declares certain goods to be of special importance in inter-State trade and commerce[15]. Section 15 of the Act lays down the rate structure. The rates are different depending upon the classes of goods and the status of the person to whom the goods are sold. Thus, goods are either 'declared goods' (goods of special importance) or 'non-declared goods' while a person may be registered or a non-registered dealer. Based on these classifications, the rates of sales tax are prescribed by the Central Government though the tax is collected and appropriated by the State Governments.

The maximum prescribed rate of sales tax on 'declared goods' inside a State is 4 per cent of the sale price and is not leviable at more than one stage[16]. In the case of inter-State sale of such goods to registered dealers the rate of tax is the same as applicable to the sale of such goods inside the exporting State. In respect of sale of 'declared goods' to non-registered dealers (including consumers) the CST is chargeable at twice the rate applicable to the same goods inside the State i.e. 8 per cent. Where 'non-declared' goods are sold in the course of inter-State trade to a registered dealer the ceiling rate is 4 per cent[17] or the rate applicable to internal sales of the concerned goods, whichever is lower[18]. However, on inter-State sale of 'non-declared goods' to non-registered dealers, the rate of CST is 10 per cent or the rate applicable to the sale of such goods inside the exporting States, whichever is higher[19].

The Act further specifies that when a sales tax has been levied inside a State on any 'declared goods' and such goods are sold in the course of inter-State trade, the tax so levied shall be refunded. Provision also exists that goods which are generally and unconditionally exempt from the sales tax within a State will also be exempt from CST in the course of inter-State trade.

Obviously, for larger national interest, some kind of Central control on sales tax is necessary. Had Punjab, and Haryana been free to levy sales tax on foodgrains at will, the people of food deficit States would have suffered. Similarly uncontrolled sales tax levies by West Bengal, and Bihar on iron and steel, and coal would have impeded the growth of engineering industry in Gujarat and Maharashtra.

Basically, CST authorises a State to tax residents of other States. Lest this power should be misused to export undue tax burden to other States, the original scheme devised in 1956 kept the rate of CST quite low (1 per cent) ensuring in the process some reasonable revenue for the exporting States. However, over the years the rate of CST has been raised by stages to 4 per cent. This trend has benefited industrially advanced States (like Maharashtra, Gujarat, Tamil Nadu and West Bengal) at the cost of industrially backward States. Since manufactures are the main items of inter-State trade, the developed States are able to export a part of their taxation to other States. In effect, it amounts to transfer of financial resources from poor States to rich States, much against the declared objective of balanced regional development and equitable distribution of resources among the States. Moreover, the high rate of CST hinders the free flow of trade and commerce within the country.

It is, therefore, sometimes suggested that the rate of CST be reduced to the original level of 1 per cent to safeguard the interest of poorer States and further that the Central Government should declare some more inputs as goods of special

importance in inter-State trade to restrict the power of the States to tax such goods. However, these suggestions have met with stiff resistance from most State Governments.

Following a voluntary agreement between the Centre and the States and the recommendations of the National Development Council (NDC) in December 1956, the Additional Duties of Excise (Goods of Special Importance) Act, 1957 was passed which replaced the sales tax on textiles, sugar, and tobacco by additional duties of excise. These goods were declared goods of special importance in inter-State trade so that no State could find it worthwhile to opt out of the voluntary agreement not to impose sales tax on these goods[20]. The revenue derived from additional duties of excise, levied and collected by the Centre, is distributed among the States in accordance with the formula prescribed by the Finance Commission. The Fourth Finance Commission described it as a *tax rental arrangement.*

The rationale of the present scheme lies in minimising tax evasion by levying the tax at first point and to save industry, trade, and consumers from the administrative complexities involved in the collection and payment of sales tax. The scheme has been in operation for well over three decades. While the business community has demanded the extension of the scheme to other commodities, the States have remained, by and large, disinclined in this regard. The States have argued: (a) sales tax is the only elastic source of revenue available to them and, in view of its regional applicability, it is also the only effective instrument for shaping their economic policies; (b) replacement of it by Central levy will encroach on their constitutional rights leading to erosion of their financial autonomy; (c) if taxes are levied and collected by a State itself then it is more conscious of its responsibilities toward the taxpayers. Subventions from the Centre may lead to reckless spending causing fiscal indiscipline. As regards the working of the existing scheme, the dissatisfaction of State Governments is borne out of their belief that revenue potential of additional duties of excise has not been fully exploited by the Centre.

The opposition of States at one stage grew so strong that the whole issue was reconsidered by the NDC in its meeting held on December 28, 1970. The NDC decided to continue the scheme with the following conditions; (a) that the incidence of additional duties would be stepped up to 10.8 per cent of the value of clearances within a period of two or three years; (b) that a ratio of 2:1 between basic and additional excise duties would be achieved and maintained; (c) that specific duties would be converted into *ad valorem* duties except in regard to unmanufactured tobacco. It was also agreed that a Standing Review Committee would be set up and the same would meet at least once a year to review the working of the new arrangement and make such recommendations as may be necessary for its further improvement.

Consequently, specific duties were replaced by *ad valorem* rates and significant enhancements were made in additional excise duties in the Central budgets for three consecutive years 1971-72 to 1973-74. After considerable delay, the Standing Review Committee met for the first time in February 1981 and appointed a sub-committee which recommended that the incidence of 10.8 per cent should be achieved in three stages: 8.5 per cent by 1984-85; 9.75 per cent by 1987-88; and 10.8 per cent by 1989-90. The Ninth Finance Commission was informed by the Union Finance Ministry that the incidence achieved by the end of 1988-89 was 10.7 per cent. The Commission hoped that the committed level of 10.8 per cent would be actually achieved by the end of 1989-90. In a significant move, the Commission recommended that during its report period, if in any year the incidence of additional excise duties fell short of the level of 10.8 per cent of the value of clearances, the shortfall should be made good by the Centre by providing equivalent amount by way of grant-in-aid to be distributed amongst the States in the same manner as recommended for sharing the proceeds of additional excise duties [Finance Commission, 1989, p. 34].

As regards the ratio between basic excises and additional excises, we have made commodity-wise computations for analysing the trends (Table 13). The ratio between basic and additional excise duties on sugar declined from 4.03:1 in 1971-72

to 1.67:1 in 1980-81, and further down to 0.88:1 in the budget estimates for 1990-91. In the case of textiles, the ratio fell from 2.65:1 in 1971-72 to 0.96:1 in 1980-81 and is estimated at 0.16:1 in the 1990-91 budget. Similarly, for tobacco, the ratio declined from 5.34:1 in 1971-72 to 3.49:1 in 1980-81 and is estimated at 2.06:1 in the 1990-91 budget. The overall ratio (the three commodities taken together) declined from 4.17:1 in 1971-72 to 2.21:1 in 1980-81, and is estimated at 1.14:1 in the 1990-91 budget. Thus, the evidence suggests that the Central Government, though slow in implementing the agreement reached between it and the States, has ultimately honoured the promises made.

TABLE 13. RATIO BETWEEN BASIC AND ADDITIONAL DUTIES OF EXCISE ON SUGAR, TEXTILES AND TOBACCO, 1971-72 TO 1990-91

Year	Sugar	Textiles	Tobacco	All the three commodities
1971-72	4.03:1	2.65:1	5.34:1	4.17:1
1972-73	3.84:1	2.00:1	3.62:1	3.24:1
1973-74	3.57:1	2.32:1	2.74:1	2.84:1
1974-75	3.64:1	2.31:1	2.71:1	2.82:1
1975-76	4.16:1	1.35:1	2.82:1	2.68:1
1976-77	3.98:1	1.12:1	2.93:1	2.55:1
1977-78	3.35:1	1.53:1	2.91:1	2.61:1
1978-79	2.00:1	0.84:1	3.28:1	2.13:1
1979-80	2.23:1	1.04:1	3.36:1	2.39:1
1980-81	1.67:1	0.96:1	3.49:1	2.21:1
1981-82	1.59:1	0.82:1	2.98:1	1.94:1
1982-83	1.57:1	0.75:1	2.72:1	1.79:1
1983-84	1.19:1	0.48:1	2.58:1	1.48:1
1984-85	0.88:1	0.45:1	1.99:1	1.28:1
1985-86	0.85:1	0.33:1	1.89:1	1.19:1
1986-87	0.86:1	0.26:1	2.18:1	1.19:1
1987-88	0.83:1	0.18:1	2.29:1	1.23:1
1988-89	0.82:1	0.16:1	2.47:1	1.23:1
1989-90 (R.E)	0.88:1	0.16:1	2.06:1	1.14:1
1990-91 (B.E)	0.88:1	0.16:1	2.06:1	1.14:1

Source: Ratios calculated from data of basic and additional excise duties on sugar, textiles, and tobacco obtained from *Explanatory Memorandum on the Budget of the Central Government* (various years), Ministry of Finance, Government of India.

In January 1983, an expert committee headed by Kamlapati Tripathi recommended the extension of this scheme to cover vanaspati, drugs and medicines, cement, paper and paper board, and petroleum products [Tripathi, 1983]. The recommendation was considered in a conference of Chief Ministers held in November 1983. The six Chief Ministers of the then non-congress(I) States viz., Andhra Pradesh, Jammu and Kashmir, Karnataka, Tamil Nadu, Tripura, and West Bengal opposed the Centre's initiative to implement the recommendation. The Tripathi Committee recommendations were further discussed by the Chief Ministers at their conference in New Delhi on February 9-10, 1989 but no progress could be made in the matter which is pending since then.

Agricultural Income Tax

The Government of India Act, 1935, segregated agricultural and non-agricultural incomes and provided, for the first time, a separate provincial levy on agricultural incomes. The Constitution retained the distinction between the two types of income and allocated the power to tax agricultural incomes to the States. However, agricultural income tax, which could have been a dependable source of revenue for the States, has so far remained largely untapped. Presently, about half a dozen States levy agricultural income tax; in three of them it is confined to plantation crops, and in all cases the revenue is meagre. The share of this tax in the total revenue from States' taxes has remained negligible, just around 1 per cent (Table 12).

In the early fifties, TEC had suggested the taxation of agricultural income by all States on equity considerations. A more comprehensive examination of the question of direct taxation of agriculture was undertaken by the Committee on Taxation of Agricultural Wealth and Income

(1972), headed by K.N. Raj. The Committee was required, under its terms of reference, to suggest methods by which direct taxation of agricultural wealth and income could be used more effectively for raising additional resources for development. It was further asked to recommend specifically ways and means by which taxation of agricultural wealth and income could be used to reduce economic disparities and promote more efficient utilisation of the available land and labour resources.

To start with, the Committee accepted the view that incidence of direct taxation should be broadly the same on comparable income and wealth groups irrespective of the sources and the forms in which wealth was held and emphasized that for purposes of direct taxation, the family should be the basic unit of assessment so as to prevent large scale avoidance. For a rational system of direct taxation of agriculture, the Committee laid down the following criteria: (1) It should take account of the differences in productivity of land depending upon the particular crops grown in a region. (2) Its incidence should be uniform in different parts of the country. (3) It should reflect changes in productivity and prices over a period of time. (4) It should be possible to build into the tax an element of progression which was not presently in the land revenue.

As for differences in productivity of land, the Committee identified the main factors to be (a) soil-climatic differences, (b) conditions of water supply, and (c) crops grown and recommended a scheme of Agricultural Holding Tax (AHT) with the following salient features: (1) The country should be divided into a sufficiently large number of soil-climatically homogeneous districts/tracts so that differences having any significant influence on productivity are taken into account. (2) For each such district/tract, norms of output of different crops per hectare for each year should be worked out on the basis of estimates of yield for the previous 10 years and these should be valued at the relevant average harvest prices of the preceding three years. (3) From the value of gross output of crops arrived at in the above manner, allowance should be made for the paid out costs of cultivation (40 to 50 per cent of the value of gross output) and also for depreciation of assets. (4) The norms arrived at in the above manner would form the rateable value of a hectare of land growing different crops in different districts/tracts. (5) To provide for the costs of development, the Committee suggested granting of development allowance to all agricultural holdings at the rate of 20 per cent of the rateable value subject to a maximum of Rs 1,000. (6) To determine the actual tax liability under the AHT, the Committee devised a simple formula to be applied to the rateable value of the holdings minus the development allowance. If the rateable value of a holding (minus the development allowance) is X thousand rupees, the AHT should form X/2 per cent of this amount. For example, if the rateable value of a holding is Rs 10,000, the AHT would be 9/2 or 4.5 per cent of Rs 9,000 (i.e. Rs 10,000 minus Rs 1,000 deductible as development allowance) which is equal to Rs 405. (7) As the incidence of the AHT decreases progressively on small holdings, the Committee favoured the application of the formula to rateable values upto Rs 600. For holdings of rateable value below Rs 600, the AHT may be fixed at a flat rate of Rs 1 per holding.

Although the recommendations of the Committee were widely welcomed, the State Governments did not accept AHT. Exemption of agricultural incomes from direct taxation deprives the States of a potential source of revenue. Moreover, the exclusion of agricultural incomes from the income tax base provides opportunities for tax evasion by camouflaging taxable income and black money as gains from agriculture. It is not uncommon among urban elite to own agricultural farms on the city's outskirts for the sole purpose of diverting part of their high non-agricultural incomes from taxable zones to tax heavens. Emphasizing the need for taxing agricultural sector, the Sixth Plan noted: "Direct taxes on agriculture at present constitute less than 1 per cent of the total agricultural income. Land revenue, which is the principal direct tax on agriculture, is generally a flat rate levy and, consequently, regressive in character. Fixation of minimum support and procurement prices for major agricultural crops and provision of various inputs such as fertilisers, irrigation, and electricity at subsidised or concessional rate have helped

raise agricultural income particularly of large farmers. It is, therefore, necessary to consider measures for raising additional resources from agricultural sector and introducing a measure of progressivity in agricultural taxation" [Planning Commission, 1981, p. 77].

States, on their part, have highlighted serious problems in the assessment of agricultural income. These include shrinkage of the tax base due to ceiling on holdings, widely dispersed potential assessees, fluctuations in production due to uncertain weather conditions, lack of accounting practices in the agricultural sector, etc. It should be noted that the AHT does not need assessing actual agricultural incomes of the assessees. The fact of the matter is that the States neither want to levy, by themselves, a progressive tax on agricultural incomes and nor to transfer it to the Union List. The Centre too is not enthusiastic to adopt the tax as was made clear in the Long Term Fiscal Policy Statement: "It is often stated that exclusion of agricultural income is a major shortcoming of the personal income tax base in India and constitutes an important explanation for the weak revenue-raising capacity of the personal income tax. Taxing agricultural income presents many conceptual and administrative problems. Land revenue and taxation of agricultural income are States' subjects under the Constitution. The Centre has no intention of seeking any change in this position" [Ministry of Finance, 1985(a), p. 35].

BUOYANCY AND ELASTICITY

A widely-recognised criterion of a good tax system is the high degree of responsiveness of tax yield to changes in national income. This is particularly emphasized in developing countries where the government sector is assigned a crucial role in the development process. With price stability as a constraint, this role can be performed more effectively if tax revenues are relied upon to finance a large part of government expenditure.

Tax revenue may change through automatic response of the tax yield to changes in national income and/or through the imposition of new taxes, revision of the rates and/or the bases of the existing taxes, tax amnesties, stricter tax compliance and other administrative measures backed by legal action. Changes in the tax yield resulting from modifying tax parameters (i.e., rates, bases, etc.) are called *discretionary changes*. Variations in the tax yield flowing from the combined effects of automatic responses as well as discretionary changes constitute the *buoyancy* of a tax. It is computed by dividing percentage change in tax yield by percentage change in national income.

With tax parameters held constant (i.e., discretionary changes not taken into account), automatic changes in the tax yield resulting from changes in the national income measure the *elasticity* of a tax system. It is the ratio of percentage change in tax revenue (adjusted for discretionary changes) to percentage change in national income. Buoyancy estimates assess the overall success of government measures to increase tax revenues. On the other hand, elasticity indicates the inherent responsiveness of a tax system to changes in national income. If elasticity is weak, it will be necessary to revise tax rates and tax bases every year to keep the share of tax revenue in national income undiminished. Such frequent changes complicate tax laws, reduce administrative efficiency and are politically inexpedient. Therefore, while casting the tax net, the selection of tax bases and their rate structure should be so designed as to impart reasonable degree of elasticity to the tax system[21].

Several studies have computed the buoyancy/elasticity of Indian tax system over the last four decades. Estimates of some of the studies are summarized in Table 14. In the early 1960s, G. S. Sahota made the first systematic and comprehensive attempt to compute buoyancy/elasticity of the Indian tax system. For the period 1951-52 to 1957-58, Sahota estimated the buoyancy of Central and State taxes taken together at 1.69 while for Central taxes taken separately at 2.39. The elasticity for the same period was found to be 0.83 for Central and State taxes considered together and 0.61 for Central taxes taken separately. Another notable study was undertaken by V. G. Rao who estimated, for the period 1960-61 to 1973-74, the buoyancy of all Central and State

taxes taken together, and all Central and States taxes taken separately, at 1.22, 1.22, and 1.27 respectively; the corresponding elasticities are 0.82, 0.74, and 1.01. The computations of the Indirect Taxation Enquiry Committee (1978), also show poor elasticity of the indirect taxes except import duties. For the Union excise duties, the Committee estimated the buoyancy and elasticity coefficients at 1.31 and 0.75 respectively for the period 1963-64 to 1974-75.

TABLE 14. BUOYANCY AND ELASTICITY OF INDIA'S TAX SYSTEM IN RELATION TO NATIONAL INCOME

	Author	Period for which computations made	Tax group	Buoyancy	Elasticity
1.	G.S. Sahota	1951-52 to 1957-58	1. All Central and State taxes	1.69	0.83
			2. All Central taxes	2.39*	0.61
2.	V.G. Rao	1960-61 to 1973-74	1. All Central and State taxes	1.22	0.82
			2. All Central taxes	1.22	0.74
			3. All State taxes	1.27	1.01
3.	Indirect Taxation Enquiry Committee (1978)	1963-64 to 1974-75	Union excise duties	1.31	0.75
4.	I.K. Khadye	1960-61 to 1978-79	1. All Central and State taxes	1.25	0.88
			2. All Central taxes	1.25	0.83
5.	M.M. Sury	1950-51 to 1964-65	1. Union excise duties	3.02	1.86
		1965-66 to 1980-81	2. Union excise duties	1.27	0.73

* For the period 1953-54 to 1957-58

Source: 1. G.S. Sahota, *Tax Structure and Economic Development* (Bombay: Asia Publishing House, 1961), Tables IV and VI ; 2. V.G. Rao, *Responsiveness of the Indian Tax System*, 1960-61 to 1973-74 (New Delhi: Allied Publishers Pvt. Ltd., 1979), Tables 4.1 and 4.4; 3. Government of India, Ministry of Finance, *Report of the Indirect Taxation Enquiry Committee*, part II, January 1978, p. 399; 4. I.K. Khadye, 'The Responsiveness of Tax Revenue to National Income in India, 1960-61 to 1978-79', R.B.I., *Occasional Papers*, Vol. 2, No. 1, June 1981; 5. M.M. Sury, 'Buoyancy and Elasticity of Union Excise Revenue in India: 1950-51 to 1980-81', *Margin, Vol. 18, No. 1, October 1985, p. 55.*

In another study, I. K. Khadye estimated the buoyancy and elasticity of combined tax revenue (Centre and States) at 1.25 and 0.88 respectively for the period 1960-61 to 1978-79. For the same period, the buoyancy and elasticity coefficients of Central taxes taken separately were found to be 1.25 to 0.83 respectively. In yet another study, M. M. Sury estimated buoyancy and elasticity of Union excise duties for two sub-periods, 1950-51 to 1964-65 and 1965-66 to 1980-81. For the first period, the buoyancy and elasticity coefficients turned out to be 3.02 and 1.86 respectively; for the second period, they were lower at 1.27 and 0.73 respectively. It may be noted that the latter estimates (1.27 and 0.73) are a little lower than the estimates of ITEC (1.31 and 0.75) for Union excise duties for the period 1963-64 to 1974-75 confirming the trend between Sury's two sub-periods.

The relatively high buoyancy of the tax system revealed by the foregoing estimates indicates the success of tax policy as a tool of resource mobilisation. But, the same studies have estimated low elasticity of the tax system indicating lack of inherent response of tax yield to changes in national income, generally attributed to lax administration and large-scale tax evasion.

INCIDENCE

Since Independence[22], a number of studies have estimated the incidence of taxes with a view to finding out the progressivity or the equity of the tax system. The Taxation Enquiry Commission (TEC), 1953-54, was the first to undertake a systematic and comprehensive study of the incidence of Central and State indirect taxes on rural and urban households in different expenditure groups [Ministry of Finance, 1954, Vol. I, Ch. 4 & 5]. The TEC study was based on the consumer expenditure data collected by the National Sample Survey (NSS) in the 4th round for the period April-September 1952. These data were assumed to hold good for the year 1953-54 for which TEC worked out the incidence of indirect taxes. The main findings of the study were: (a) 3.6 per cent of consumer expenditure of all households was paid in indirect taxes; (b) the percentage of

consumer expenditure paid in indirect taxes was twice as much in the case of urban households as in the case of rural households; and (c) the percentage of consumer expenditure paid in indirect taxes was mildly progressive in different expenditure groups.

The study of incidence of Central and State indirect taxes in India was later taken up twice by the Union Ministry of Finance first (MF-I) related to 1958-59, and the second (MF-II) related to the year 1963-64 [Ministry of Finance 1961 and 1963]. These were repeat exercises of the TEC study attempt in so far as concepts, assumptions, coverage, and methodology were concerned. The MF-I study was based on the NSS data on consumer expenditure collected in the 13th round (September 1957 to May 1958) while the MF-II study was based on NSS data on consumer expenditure collected during the 18th round (February 1963 to January 1964). These data were especially tabulated to suit the requirements of the studies. The main objective of TEC, MF-I, and MF-II studies was to measure the incidence of indirect taxes among different expenditure groups in both urban and rural areas[23]. Table 15 summarizes their main findings.

TABLE 15. INDIRECT TAXES AS PER CENT OF CONSUMER EXPENDITURE

Monthly Household Expenditure Groups (Rs)	TEC 1953-54			MF-I 1958-59			MF-II 1963-64		
	Rural	Urban	All India	Rural	Urban	All India	Rural	Urban	All India
1 - 50	2.2	3.3	2.4	2.5	5.8	3.1	5.8	11.1	6.5
51 - 100	2.3	4.4	2.7	3.6	7.1	4.3	6.1	11.6	7.0
101 - 150	2.7	5.1	3.1	4.1	8.0	5.1	6.8	12.6	8.0
151 - 300	2.8	5.1	3.3	4.8	9.0	5.9	8.8	14.0	10.1
301 and above	4.4	8.3	5.6	6.9	13.8	9.3	11.9	24.6	16.6
All households	2.9	5.9	3.6	4.4	9.3	5.7	8.0	16.6	10.1

Note: In the MF-II study, the lowest monthly group consists of Rs 0-50 and the highest of Rs 501 and above, whereas in the case of the earlier studies while the lowest group comprised Rs 0-50, the highest consisted of Rs 301 and above. To facilitate comparison, groups Rs 301-500 and Rs 501 and above in the MF-II study have been combined and the results for the merged group Rs 301 and above have been set out in the above table.
Sources: For TEC, *Report of the Taxation Enquiry Commission*, 1953-54, vol. I, p. 69, Table 7; for MF-I, *Incidence of Indirect Taxation 1958-59* (New Delhi, 1961), p. 10; For MF-II, *Incidence of Indirect Taxation, 1963-64* (New Delhi, 1969), Table VI. (Ministry of Finance, Government of India).

The MF-I provided a comparative analysis of the incidence of indirect taxes among rural and urban households in different expenditure groups during 1953-54 (TEC) and 1958-59 (MF-I). It brought out the change in the incidence due to the increase in indirect taxation between the two periods. The main findings of MF-I were as follows: (a) In 1953-54, indirect taxes accounted for 3.6 per cent of consumer expenditure of all households. By 1958-59, the proportion went up to 5.7 per cent, mainly on account of expansion of Central excises, and sales taxes. (b) This was true of both rural and urban households. The proportion of consumer expenditure paid in indirect taxes by rural households increased from 2.9 per cent in 1953-54 to 4.4 per cent in 1958-59, and by urban households from 5.9 per cent to 9.3 per cent. (c) The difference in the incidence on rural and urban households slightly increased over the period. (d) The incidence on different expenditure groups was progressive both in 1953-54, and 1958-59 but more so in 1958-59, among both rural and urban households.

The MF-II study pertained to the incidence of indirect taxes in 1963-64. In the meanwhile, the level of taxation had greatly increased: the combined tax revenue increased from 6.4 per cent of national income in 1953-54 to 8.6 per cent in 1958-59, and to 13.6 per cent in 1963-64. According to MF-II study the proportion of indirect taxes in the total consumer expenditure had increased to 10.1 per cent in 1963-64; 16.6 per cent in the case of urban households, and 8.0 per cent in the case of rural households. The difference in the incidence on rural and urban households remained about the same, and the incidence continued to remain progressive as before among different expenditure groups both of urban and rural households.

Another notable study regarding incidence of

indirect taxes was undertaken by the Indirect Taxation Enquiry Committee (ITEC), 1978, for the year 1973-74, based on the NSS data of consumer expenditure collected in the 28th round (October 1973 to June 1974) [Ministry of Finance, 1978, Ch. 6, App. 9-10]. Although the basic methodology was the same, the ITEC study differed from the earlier studies in two important respects. First, while the earlier studies were based on the consumer expenditure of households grouped in household expenditure groups, the ITEC study was based on the consumer expenditure of households grouped in per capita expenditure groups. This was a distinct improvement in the methodology.

Second, the ITEC made certain adjustments while apportioning indirect taxes among the households in different expenditure classes on account of excises on inputs and capital goods paid by the manufacturers. We may quote: "The task of allocation would have been fairly straight forward if only consumption goods and services were subjected to tax. As it is, not only consumer items, but also items of machinery, intermediate products and services that enter into productive processes are also subject to various levies at different stages....Taxes on current inputs may be expected to be passed on to consumers without any time-lag. Taxes on machinery items, on the other hand, raise the cost of purchase of machinery and can only be passed on to the consumers of their products through higher depreciation charges over a period of time. In the MF studies, the entire taxes on machinery items were allocated to consumers in the year in which they were collected. By contrast, in the present study, the average life of plant and machinery is taken to be 10 years, and, accordingly, only one-tenth of the taxes collected on machinery items in 1973-74 is assumed to be passed on to the consumers during that year" [Ministry of Finance, 1978, Pp. 112-113].

Taking into account all indirect taxes which amounted to 11.2 per cent of national income in 1973-74, the ITEC arrived at the following main conclusions: "Of this 11.2 per cent, 1.65 percentage points could be said to have fallen on the Government sector and on the investors, and the rest to have been shifted to the private consumers. The portion falling on the consumers is estimated to have amounted to 10.54 per cent of household consumption expenditure. This is an average of the burdens on the rural and urban households, which differed considerably in percentage terms. While the burden on the rural households amounted only to 8.0 per cent of their consumption, that on the urban household amounted to 18.0 per cent" [Ministry of Finance, 1978, p. 89].

It will be noticed that the urban: rural difference in the incidence of indirect taxation now turns out to be 18:8, that is, 2.25:1 which is a little more than what it was in 1963-64, namely, 16.6:8.0, that is, 2.075:1. Of course, in the MF-II study (1963-64), the incidence of indirect taxes paid on the intermediates was not passed on to the consumers. If that is done, it would seem that the urban-rural difference in the incidence had remained about the same as before.

TABLE 16. INDIRECT TAXES AS PER CENT OF CONSUMER EXPENDITURE BY PER CAPITA EXPENDITURE GROUPS (1973-74)

	Monthly per capita expenditure group (Rs)							
	0-15	15-28	28-43	43-55	55-75	75-100	100 and above	All households
Rural								
All indirect taxes	2.91	3.33	4.44	6.18	6.71	10.02	16.17	8.03
Central taxes	1.68	1.86	2.58	3.68	4.25	6.32	10.30	4.99
State taxes	1.23	1.47	1.86	2.50	2.46	3.70	5.87	3.04
Urban								
All indirect taxes	3.63	6.31	7.36	9.66	11.86	14.80	30.19	17.96
Central taxes	2.42	3.74	4.56	5.97	7.61	9.41	20.99	12.03
State taxes	1.21	2.57	2.80	3.69	4.25	5.40	9.20	5.93
All-India								
All indirect taxes	2.96	3.63	4.89	6.85	7.92	11.40	21.96	10.54
Central taxes	1.72	2.05	2.88	4.13	5.04	7.21	14.71	6.77
State taxes	1.24	1.58	2.01	2.73	2.88	4.19	7.24	3.77

Source: *Report of the Indirect Taxation Enquiry Committee*, Part II, January 1978, p. 92, Table 2 (excerpted), Ministry of Finance, Government of India.

The study also found that the incidence of indirect taxes on different per capita expenditure groups of both rural and urban households was progressive but more so in urban than in rural area (Table 16). In rural area, the lowest expenditure group (Rs 0-15) paid 2.91 per cent of its expenditure as indirect taxes and the highest expenditure group (Rs 100 and above) paid 16.17 per cent. In urban area, the proportion varied from 3.63 per cent (for Rs 0-15) to 30.19 per cent (for Rs 100 and above).

Table 16 shows the incidence of Central and State indirect taxes separately. It will be noticed that Central indirect taxes were more progressive than State taxes in both urban and rural areas and that, taking all per capita expenditure groups together (last column), the urban-rural difference in the incidence was greater with Central than with State taxes.

TAX EVASION

The existence of substantial tax evasion is widely recognised in India, though there are differences over the magnitude of such evasion. The history of taxation law amendments in India is essentially a history of plugging loopholes, as and when discovered, to prevent leakages of revenue. According to TEC (1953-54): "Leakage in revenue may occur either through a deliberate distortion of facts relating to an assessment *after* the liability has been incurred, or by so arranging one's affairs *before* the liability is incurred as to prevent its occurrence or to reduce the incidence of the tax within the framework of the existing legislation. The former set of transactions is usually referred to as 'evasion' and the latter as 'avoidance'. 'Avoidance' ordinarily arises from drafting defects in the tax legislation. Both avoidance and evasion result in loss of revenue to Government, but the former has a colour of legality about it" [Ministry of Finance, 1954, Vol. II, p. 189]. Evasion of income-tax is a common tendency among all income groups. However, opportunities for it vary according to the nature of income earned. In the case of income from salaries and interest on deposits, evasion is less likely because of proper recording and auditing of transactions and deduction of tax at source. But opportunities for evasion are largest in the case of self-employed in business and professions.

The Income Tax Investigation Commission (1947) and the TEC (1953-54) only pointed out the difficulties in estimating the magnitude of tax evasion. Estimation of tax evasion in India was first taken up by Nicholas Kaldor in 1956. He estimated income tax loss through tax evasion at Rs 200 to Rs 300 crore for the year 1953-54[24]. However another study by the Central Board of Revenue for the same year recorded much lower (one-tenth) estimate of tax evasion of Rs 20 to Rs 30 crore [Ministry of Finance, 1959, p. 148]. One main reason for the wide divergence between the two estimates was the inclusion in Kaldor's estimate of what the Central Board of Revenue counted as avoidance than evasion. While tendering oral evidence before Direct Taxes Administration Enquiry Committee (1958-59), Kaldor admitted that his estimate represented the loss of tax not only through evasion but also through avoidance [Ministry of Finance, 1959, p. 148]. It is, therefore, generally agreed that the income tax evasion estimates of Kaldor were on the high side.

The Direct Taxes Enquiry Committee, 1971, also considered *inter alia*, the problem of tax evasion and estimated the tax-evaded income in 1968-69 to be about Rs 1,400 crore. The amount of tax evasion for the same year was put at Rs 470 crore[25].

As already noted, the National Institute of Public Finance and Policy in a recent report estimated the ratio of tax-evaded to GDP in the range of 3.7 per cent to 5.7 per cent in 1975-76, and 4.2 per cent to 8.6 per cent in 1980-81. With GDP at factor cost (at current prices) being Rs 114,271 crore in 1980-81, it means that the tax-evaded income ranged between Rs 4,799 crore and Rs 9,827 crore in that year. Applying an average income incidence of 35 per cent, the income tax evasion in 1980-81 ranged between Rs 1,679 crore and Rs 3,439 crore.

Apart from the foregoing estimates, some evidence of general nature also suggests widespread non-reporting and under-reporting of taxable income. Under the present rate structure of individual income tax, the highest slab of income for tax purpose is Rs 1,00,000 and above. In 1987-88, the latest year for which the figures are available,

the number of individuals who had each a taxable income of Rs 1,00,000 and above was only 63,657 [Ministry of Finance, 1987-88, p. 8]. Although it is difficult to suggest the actual number of such individuals, it seems that the reported number is much less than one would expect considering the living styles of people in the metropolitan cities. Evasion is not confined to income tax. It is widely practised for other taxes like wealth tax, estate duty (now abolished), and gift tax. The ridiculously low yield from these taxes (Table 11) is partly due to plethora of exemptions/concessions and also due to widespread evasion.

Estimation of evasion of indirect taxes has always remained a hard test even for the officially appointed committees. For example, the Central Excise (Self-Removal Procedure) Review Committee, 1973, made extensive study of the excise evasion phenomenon both sector-wise and commodity-wise, but it could not quantify the total magnitude of evasion. It observed: "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. But such a conclusion has to be distinguished from quantification just as quantification, in turn, has to be distinguished from a mere guess as to quantum... The result may be summed up in one phrase: we are unable to quantify and unwilling to guess" [Venkatappiah, 1973, p. 56].

The effects of tax evasion on the national economy are indeed disastrous. Tax evasion cuts at the very root of the revenue potential of our tax system. Moreover, evasion of tax liability by taxpayers undermines the equity attribute of the tax system. Honest taxpayers feel demoralized and are tempted to join the tax evaders' camp. Tax evasion leads to the creation of black money which, in turn, is a menace to the economy in its own way. The nexus between tax evasion and black money and its distortion of the redistributive role of tax policy was noted by the Seventh Five Year Plan as follows: "With a sizeable proportion of income and wealth evading taxation, the redistributive impact of progressive taxation had been severely blunted. A reduction in the scale of black income generation would improve distribution of income and wealth after taxation. Besides, if the magnitude of tax evasion is significantly reduced, there would be greater volume of tax revenue, and a greater volume of public expenditure benefitting the poorer section of the population would become possible" [Planning Commission, 1985, Vol. I, p. 71].

Among the host of causes underlying tax evasion, the important ones are lenient penal provisions, economic status of civil servants collecting taxes (as reflected by their salaries) and the traditions and attitudes of the people toward government and its laws. The Direct Taxes Enquiry Committee, 1971, had suggested various measures to fight the evil of tax evasion such as: (i) reduction in tax rates, (ii) minimisation of controls and licences, (iii) regulation of donations to political parties, (iv) creating confidence among small taxpayers, (v) substitution of sales tax by excise duty, (vi) vigorous prosecution policy, and (vii) compulsory maintenance of accounts. To give effect to these recommendations, the Government enacted the Taxation Laws (Amendment) Act, 1975. This Act, *inter alia*, provided stringent punishment for tax evaders. In cases where tax evasion exceeded Rs 1 lakh or prosecution was for the second or subsequent offence, the maximum punishment prescribed was seven years rigorous imprisonment. The discretionary powers to courts to award monetary punishment as an alternative to imprisonment or to reduce the term of imprisonment less than the minimum period, was withdrawn. Besides, efforts have been made, from time to time, to curb tax evasion and avoidance through voluntary disclosure schemes.

In a situation where national interest requires increased revenue, it is necessary that the revenue be provided first of all by those who have been, and are still, shirking their obligations under the tax laws. Controlling and reducing tax evasion is an urgent objective of tax reform in India, requiring formulation and implementation of legislative and administrative measures to deal with tax offenders. Although direct tax laws abound with penalty and prosecution provisions for different defaults committed by assessees, in practice prosecution for tax offences is rare and conviction an exception. This ought to change.

ANNEXURE I. TAXES WITHIN THE UNION JURISDICTION AS ENUMERATED IN LIST I IN THE SEVENTH SCHEDULE OF THE CONSTITUTION OF INDIA

Sr. No.	Entry No. in List I of the Seventh Schedule	Description of the Tax/duty
1.	82	Taxes on income other than agricultural income.
2.	83	Duties of customs including export duties
3.	84	Duties of excise except on alcoholic liquors and narcotics but including medicinal and toilet preparations containing alcohol.
4.	85	Corporation tax
5.	86	Taxes on the capital value of assets, exclusive of agricultural land, of individuals and companies; taxes on the capital of companies.
6.	87	Estate duty in respect of property other than agricultural land
7.	88	Duties in respect of succession to property other than agricultural land.
8.	89	Terminal taxes on goods and passengers carried by railway, sea or air; taxes on railway fares and freights.
9.	90	Taxes other than stamp duties on transactions in stock exchanges and future markets.
10.	91	Rates of stamp duty in respect of bills of exchange, cheques, promissory notes, bills of lading, letters of credit, policies of insurance, transfer of shares, debentures, proxies, and receipts.
11.	92	Taxes on the sale or purchase of newspapers and on advertisements published therein.
12.	92A*	Taxes on the sale or purchase of goods other than newspapers, where such sale or purchase takes place in the course of inter-State trade or commerce.
13.	92B**	Taxes on the consignment of goods (whether the consignment is to the person making it or to any other person), where such consignment takes place in the course of inter-State trade or commerce.
14.	97	Any tax not enumerated in list II or list III of the Seventh Schedule.

* Inserted by the Constitution (Sixth Amendment) Act, 1956.
** Inserted by the Constitution (Forth-sixth Amendment) Act, 1982.
Source: Government of India, Ministry of Law, Justice and Company Affairs, The *Constitution of India*, Seventh Schedule, List I.

ANNEXURE II. TAXES WITHIN STATE JURISDICTION AS ENUMERATED IN LIST II IN THE SEVENTH SCHEDULE OF THE CONSTITUTION OF INDIA

Sr. No.	Entry No. in List II of the Seventh Schedule	Description of the tax/duty
1.	45	Land Revenue
2.	46	Taxes on agricultural income.
3.	47	Duties in respect of succession to agricultural land.
4.	48	Estate duty in respect of agricultural land.
5.	49	Taxes on lands and buildings.
6.	50	Taxes on mineral rights subject to any limitations imposed by Parliament by law relating to mineral development.
7.	51	Duties of excise on alcoholic liquors and narcotics manufactured or produced in the state but not including medicinal and toilet preparations containing alcohol.
8.	52	Taxes on the entry of goods into a local area for consumption, use or sale therein.
9.	53	Taxes on the consumption or sale of electricity.
10.	54*	Taxes on the sale or purchase of goods other than newspapers, subject to the provisions of Entry 92A of List I.
11.	55	Taxes on advertisements other than advertisements published in the newspapers [and advertisements broadcast by radio or television]**
12.	56	Taxes on goods and passengers carried by road or on inland waterways.
13.	57	Taxes on vehicles, whether mechanically propelled or not, suitable for use on roads, including tram-cars subject to the provisions of Entry 35 of List III.
14.	58	Taxes on animals and boats.
15.	59	Tolls
16.	60	Taxes on professions, trades, callings and employments***
17.	61	Capitation taxes
18.	62	Taxes on luxuries, including taxes on entertainments, amusements, betting and gambling.
19.	63	Rates of stamp duty in respect of documents other than those specified in the provisions of List I with regard to rates of stamp duty.

* Substituted by the Constitution (Sixth Amendment) Act, 1956.
** Inserted by the Constitution (Forty-second Amendment) Act, 1976.
*** The scope of these taxes is spelt out in Article 276, the Clause (2) of which fixes the amount payable by a person on account of these taxes.
Source: Government of India, Ministry of Law, Justice and Company Affairs, *The Constitution of India*, Seventh Schedule, List II.

ANNEXURE III. RATES OF INCOME TAX ON INDIVIDUALS AND COMPANIES APPLICABLE FOR THE ASSESSMENT YEAR 1991-92

Individuals

Income range	*Rate of tax*
Up to Rs 22,000	Nil
Rs 22,000 to Rs 30,000	20 per cent of the amount by which the total income exceeds Rs 22,000
Rs 30,000 to Rs 50,000	Rs 1,600 plus 30 per cent of the amount by which the total income exceeds Rs 30,000
Rs 50,000 to Rs 1,00,000	Rs 7,600 plus 40 per cent of the amount by which the total income exceeds Rs 50,000
Rs 1,00,000 and above	Rs 27,600 plus 50 per cent of the amount by which the total income exceeds Rs 1,00,000

Surcharge: 8 per cent (increased to 12 per cent in December 1990) of income tax if total income exceeds Rs 75,000.

Company

Type of company	*Rate of tax*
1. A domestic company in which the public are substantially interested (i.e., a widely-held company)	40 per cent
2. A domestic company in which the public are not substantially interested (i.e., a closely-held company)	
2.1 In the case of a trading and investment company	50 per cent
2.2 In the case of any other company	45 per cent
3. A foreign company	
3.1 On incomes consisting of royalties, fees for rendering technical services etc.	50 per cent
3.2 On other incomes	65 per cent

Surcharge: 8 per cent of income tax if total income of a domestic company exceeds Rs 75,000. No surcharge is payable in the case of a foreign company.

Source: *Memorandum Explaining Provisions in the Finance Bill, 1990*, Ministry of Finance, Government of India.

NOTES

1. Consequent upon the financial integration of part B States with the Indian Union from April 1, 1950, comparable data of public revenues for the whole country are available since 1950-51.

2. One *anna* was equal to 1/16th of a rupee before the introduction of the metric system of currency from April 1, 1957.

3. For a detailed historical account of excise taxation in India, see Government of India, Ministry of Finance, *Report of the Central Excise Reorganisation Committee*, 1963, Part I, Chapter 1.

4. For a historical review of income tax in India, see 1. Government of India, *Report of the Indian Taxation Enquiry Committee* (Chairman, Sir Charles Todhunter), 1924-25, Chapter 9, pp. 189-91; 2. Government of India, *Income Tax Investigation Commission* (Chairman, Sir Srinivasa Varadachariar), 1947, pp. 1-4.

5. It is noteworthy that concurrent taxation powers i.e., overlapping tax system prevails in U.S.A., Canada, and Australia, leading to much litigation and difficulties. These problems are often solved through negotiations, and agreements.

6. Duties and taxes mentioned in Articles 269 and 270 do not form part of the Consolidated Fund of India but a surcharge levied on them under Article 271 does so and is meant for the purposes of the Union.

7. This argument can also be extended to the increase in the prices of goods produced by public sector enterprises. Any such increase and the resultant additional proceeds may improve the finances of an individual public enterprise but not necessarily of the Government because the various ministries and departments will be required to spend more to purchase the same volume of goods and services from the concerned enterprise. Thus, in any reform of indirect tax structure it is important to emphasise apart from quantity, the quality of revenue i.e., who pays the taxes to the Government.

8. The LTFP, co-terminus with the Seventh Five Year Plan (1985-90), set out the broad direction and strategy for fiscal reforms, mainly taxation, to promote growth and social justice [Ministry of Finance, 1985(a), para 4.4].

9. Tax collections (or receipts) of the Central Government are different from its tax revenues because parts of the proceeds from income tax, and Union excise duties are

transferred to State Governments under various tax-sharing arrangements of the Constitution. Unless otherwise stated, the two terms 'tax collections' and 'tax revenues' are used interchangeably in this paper, denoting tax receipts before the transfer of States' share.

10. Apart from TEC, a number of official Committees/Working Groups have studied the working of the Indian excise system during the last four decades. The Central Excise Reorganisation Committee, 1963, under the chairmanship of A.K. Chanda made recommendations on the organisational and administrative set-up of the Central Excise Department. The Working Group set up by the Administrative Reforms Commission with R.M. Hajamavis as Chairman submitted a report on Customs and Central Excise Administration in 1968. A study of the procedures and organisation of excise system in India was undertaken in 1973 by the Central Excise (Self-Removal Procedure) Review Committee headed by B. Venkatappiah. The Structure of indirect taxes was reviewed with special reference to excise duties by the Indirect Taxation Enquiry Committee, 1978, with L.K. Jha as chairman. The Estimates Committee of Lok Sabha on Central Excise (1978-79) also undertook probing analysis of the working of excise department. V.M. Dandekar Committee on Tax Measures to Promote Employment (1980) made several recommendations on the employment aspect of excise taxation. Similarly, the Tripathi Committee on Replacement of Sales Tax by Additional Excise Duty (1983) recommended substitution of sales tax by excise duties on vanaspati, drugs and medicines, cement, paper and paper board, and petroleum products. The Technical Study Group on Central Excise Tariff, 1985, after having made a comprehensive review of the Central excise tariff, made several recommendations including the adoption of a new rationalised tariff classification broadly patterned on the Harmonised System Nomenclature (HSN). The Long Term Fiscal Policy (December 1985) also provided a broad perspective of the excise policy for the years to come.

11. This and the following rates of basic excise duty, compiled from recent budget speeches of Finance Ministers, are intended to give a broad pattern of tariff structure. They are liable to variations in view of various exemptions/concessions notified from time to time. For details of excise rates on various items, see Directorate of Publications, Customs and Central Excise (New Delhi) Central Excise Tariff (as on 10.8.1989).

12. HSN is a new and elaborate system of commodity classification developed by the Customs Corporation Council. This multi-purpose coding system serves the tariff needs of excise, customs, trade, insurance, and freight. India is a signatory to the HSN.

13. However, the super-tax paid by companies was assumed as paid by a company on its own behalf. Thus, there was an important distinction between income tax and super tax paid by companies, the former on behalf of shareholders and the latter on its own behalf. The super tax was often called the real corporation tax. The distinction was rendered irrelevant when beginning with the year 1960-61, a company was deemed to have paid income tax on its own behalf.

14. A tax on personal expenditure was first imposed in India in 1958 but was withdrawn in 1962. It was reintroduced in 1964 but repealed again in 1966.

15. These are: coal, cereals, cotton, cotton yarn, cotton fabrics, crude oil, hides and skins, iron and steel, jute, oilseeds, pulses, rayon and artificial silk fabrics, sugar, tobacco, woollen fabrics. The list of 'declared goods' originally covered by the Act in 1956 was expanded twice, once in 1957 to include textiles, sugar and tobacco and again in 1976 to include cereals (like wheat, paddy, rice, etc.) crude oil, and pulses.

16. In 1956, when the Central Sales Tax Act was passed the rate was fixed at 1 per cent. Subsequently, it was raised to 2 per cent, 3 per cent and 4 per cent in 1958, 1966 and 1975 respectively.

17. Originally, the rate was fixed at 1 per cent in 1956. It was raised to 2 per cent, 3 per cent and to 4 per cent in 1963, 1966 and 1975 respectively.

18. It means the States are free to fix rate of sales tax on the internal sales of non-declared goods but there is a ceiling rate of 4 per cent on the sale of such goods in inter-State trade. For example, if the rate of sales tax on internal sale is 6 per cent, it will be 4 per cent for inter-State trade, being lower of the two.

19. In other words, the rate of CST is a minimum of 10 per cent. For example, if general sales tax is charged at the rate of 5 per cent on the sale of colour television in a State, the rate of CST on the same will be 10 per cent, being higher of the two rates. In 1956 the minimum rate was fixed at 7 per cent but was raised to 10 per cent by the Central Sales Tax (Amendment) Act, 1963.

20. Internal as well as inter-State sales tax on goods of special importance is governed by the Central Sales Tax Act, 1956. The present rate of CST is 4 per cent. The incidence of additional excise duties on specified goods is higher than the prescribed rate of sales tax. It is noteworthy that the Act of 1957 does not debar States from the levy of Sales tax on the specified goods, but it does provide that if in any year any State levies and collects sales tax on such commodities, no sum shall be paid to that State in that year by way of share out of the net proceeds of the additional duties of excise.

21. Estimation of elasticity or buoyancy is obtained by fitting a log linear regression of total tax revenue (T) on national income (Y). The response coefficient from time series data is estimated by using the following revenue exponential function.

$$T = aY^b$$

or taking logarithms on both the sides, $\log T = \log a + b \log Y$

In a least square fit of this logarithmically linear equation on time series data, the regression coefficient a is the constant and the regression coefficient b signifies per cent change in (T) that accompanies 1 per cent change in (Y). For buoyancy estimation, (T) is to be taken as gross tax revenue while for computation of elasticity it has to be quantified as net of discretionary changes. This method assumes that the buoyancy or elasticity is constant over the range of income considered i.e., the proportionate response of the tax to an income change of 1 per cent is the same irrespective of the level of income. It also assumes the existence of a significant

correlation between T and Y, provided by the statistic R^2.

22. The only notable attempt to examine the distribution of tax burden in India during the pre-Independence period was made by the Indian Taxation Enquiry Committee, 1924-25.

23. The distinction between urban and rural areas, for purposes of tax incidence analysis, is a characteristic feature of tax incidence studies in India. Such a classification sheds more light on the tax incidence pattern because living conditions, income earning patterns, and consumption habits differ significantly between rural and urban sections of population.

24. The estimates of Kaldor were based on certain tentative figures relating to national income provided to him by the Central Statistical Organisation. Kaldor made it clear in his report that his estimates were tentative and should be interpreted with caution [Kaldor, 1956, p. 105].

25. For details of methodology of arriving at these estimates, see Wanchoo, 1971, Pp. 7-8.

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DEVELOPMENT OF HOUSING FINANCE IN INDIA

Nasser Munjee, Devendra Gupta, Dinesh Mehta, and Vivek Hutheesing

The rapid pace of urbanisation has had serious implications on demand for housing. In 1981, 6-8 million households were estimated to be living in slums. In 1970, Government established HUDCO for accelerating the pace of housing and urban development schemes. However, housing finance was the main constraint. In 1978, HDFC, a private sector housing finance institution was established. In an appendix are described the organization and the operations of the HDFC. In 1985, the National Housing Bank was set up to ensure a viable and accessible institutional system for the provision of housing finance. Defining the role of both public and private efforts by carefully identifying the comparative advantages of each and working through them to achieve commonly agreed objectives is now crucial.

India is a vast country with a population of nearly 850 million living in an area of 3,287,263 square kilometres, giving a density of almost 260 persons per square kilometre; and the population continues to grow at 2.1 per cent per annum. India's urban areas, broadly defined as settlements with a population exceeding 5,000 and with 75 per cent of the activities being of a non-agricultural nature, have well over 200 million people and the urban population is projected to reach 350 million by the year 2001 [Report of the National Commission on Urbanization, II, p. 5]. According to the 1981 Population Census, the urban population lived in 3,949 towns of which approximately 39 per cent lived in cities larger than half a million people. In 1981, there were 12 cities with over 1 million people which accommodated over a quarter of the urban population. According to some estimates, there are at present 20 cities with over one million people. Bombay, Calcutta, Delhi and Madras are the four largest cities, the first two of which already have over 10 million people each.

This rapid pace of urbanization has serious implications for demand for housing. According to estimates of the National Buildings Organisation (NBO), the urban housing deficit in 1981 was of the order of 5.9 million units. But, this is an underestimate. In 1981, out of a total urban population of nearly 160 million, 32 to 42 million (or 6 to 8 million households) were estimated to be living in slums. Besides, nearly 2 million new housing units will be required each year for the rest of this century to cope with additional demand. In contrast, the present rate of supply of new units is about 300,000 per year. Housing conditions continue to deteriorate as slums and squatter settlements proliferate in all major metropolitan areas.

Comparing the 1960's with the 1970's, urban housing growth increased from 31.2 per cent to 51.4 per cent over these respective ten year periods while that of rural areas improved from 14.3 per cent to 19.1 per cent. The urban stock in 1971 consisted of 64 per cent pucca units, 23 per cent semi-pucca units and 13 per cent kutcha units.[1] These percentages have remained unchanged over the period 1971-81. Besides, the housing stock has not kept pace with prevalent demand. Furthermore, the estimated age composition of the 1981 housing stock indicates that about 21 per cent of the stock is more than 40 years old and about 10 per cent is more than 60 years old. Most of these units are dilapidated and warrant attention.[2]

According to the estimates of the Central Statistical Organization (CSO), the gross fixed capital formation (GFCF) in residential buildings in the public and private sectors, in 1980-81, was about Rs 3,050 crore of which about Rs 70 - 80 crore was in the public sector and the balance of about Rs 2,980 crore was in the private sector. The CSO estimates also showed that, between 1974-75 and 1979-80, the private sector investment in housing at current prices, had increased at the rate of 12 per cent per annum. Based on these estimates, the Seventh Plan assumed a growth rate of 10 per cent per annum for the Sixth Plan and estimated private sector investment during the Sixth Plan period at Rs 10,000 crore. Assuming the growth rate to continue at 10 per cent during the Seventh Plan period, the estimated

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investment was put at Rs 29,000 crore. The Seventh Plan document emphasised however that an investment of this order was, as observed earlier, inadequate to reduce the backlog in housing.

The new series of National Accounts, released by CSO in February 1988, also provide estimates of GFCF in housing and residential buildings. The estimates, available upto 1987-88, indicate that, during the Sixth Plan period, private sector investment in residential buildings in fact grew by 15 per cent and amounted to Rs 20,820 crore. Together with the investment in the public sector, investment in residential buildings, during the Sixth Plan period, is estimated to amount to Rs 22,140 crore.

The investment in the private sector has continued to increase at the same rate, namely, 15 per cent per annum, into the first three years (1985-88) of the Seventh Plan period (1985-90) for which estimates are available.[3] Investment in housing during the Seventh Plan period may therefore be assumed to grow at the same rate as in the Sixth Plan, namely, 15 per cent per annum and amount to around Rs 39,700 crore or roughly at Rs 8,000 crore per annum. It should be noted and emphasised that all these estimates are at current prices and that, therefore, a part of the growth in investment merely reflects the rise in prices of building materials.

A crucial constraint to increasing supply of housing is lack of adequate housing finance. The household sector generates savings in excess of its own needs for investment in physical assets. Over the years, due to growth in income, rapid expansion of bank branches, establishment of new institutions and introduction of new instruments, financial savings of the household sector have increased substantially. Thus, of the total net savings of this sector in 1987-88, about 50 per cent was in the form of financial assets such as bank deposits, insurance, and loans to Central and State Governments. Savings in the form of bank deposits and insurance by the households should ordinarily flow back to the households when they need them. But, owing to a rigidly controlled regulated credit system, the bulk of these funds go to Government.

The financial policy of the Government of India has been targeted to subserve a number of its own needs by providing preference in credit allocation to priority sectors, like agriculture, small industry, etc., setting interest rates, fulfilling its own borrowing requirements at subsidised rates through high statutory liquidity ratio requirements for captive investors, increasing depository institutions throughout rural India, providing high rates of loan write-offs to certain sectors, and supporting sick industries to maintain employment levels. These policies have created profitability problems for financial intermediaries, especially the commercial banks. The banks charge high interest on non-priority lending mainly to overcome their profitability problems. The banking system is also constrained to give low or negative real returns on deposits. Under the system of rationed credit, housing finance has so far been highly restricted. Households' access to finance for housing has therefore been impaired by direct rationing and high nominal interest rates. It is not at all surprising that housing credit has accounted for only 2 per cent of total credit issued by financial intermediaries and about 1 per cent of the value of new housing.

Credit flows into the housing sector originate from either the formal or the informal sector. The formal sector includes budgetary allocations of Central and State Governments, public sector financial institutions like the Housing and Urban Development Corporation (HUDCO), the General Insurance Corporation (GIC), the Life Insurance Corporation (LIC), Unit Trust of India (UTI), commercial banks and provident funds, and cooperative housing finance societies and housing finance corporations like the Housing Development Finance Corporation (HDFC) in the private and joint sectors. The informal sector includes households themselves and public and private sector employers extending housing loans to their employees.

EVOLUTION OF HOUSING FINANCE

Evolution of formal housing finance began with the establishment of an apex financial institution, the Housing and Urban Development Corporation (HUDCO) in 1970. Considering the inadequacy of resources set apart for social housing in the five year plans, a Conference of Housing

Ministers of State Governments convened by the Government of India in January, 1970, recommended that a revolving fund of the order of Rs 200 crore should be built up through Central Government allocation and mobilisation of private savings as well as support from financial institutions including possibly international agencies. It was also suggested that such a revolving fund should be operated through the agency of a Central Housing Authority which should in due course generate its own resources and be self-supporting in a few years' time. In pursuance of these recommendations, HUDCO was established with the object of accelerating the pace of housing and urban development schemes of the State Governments/ State Housing Boards, local bodies, etc. and also for undertaking wherever possible worthwhile programmes of its own. The objectives also included financing or setting up of building material industries and new satellite townships. A network of State Housing Boards was created to utilise available publicly owned land and to undertake direct construction of low cost houses for urban households, or what later became a widely accepted concept, of sites and services and core units. HUDCO provided the necessary technical and financial assistance. Side by side, households were encouraged to form primary co-operative housing societies, invest initial capital for land purchase, and then were financed through State level Apex Co-operative Housing Finance Societies which, in turn, were funded by the Life Insurance Corporation (LIC). LIC also provided a small amount of housing finance to their policy holders. Besides, Government and the public sector corporations and financial institutions gave house building advances to their employees.

In the mid-1970's, it was clear that declining trends in housing investments were in large part due to an inadequate supply of housing finance, though other constraints such as a limited supply of urban land, building materials, and building regulations also had inhibiting effects. Financing housing was largely a wealth transfer; a substitution of one asset for another which required a long process of accumulating sufficient wealth. Housing was affordable only at the final stages of a life cycle of earnings where retirement benefits provided the needed capital.

In January 1977, the Reserve Bank of India appointed a Working Group on Housing Finance (Chairman R.C. Shah), to examine the role of the banking system in providing finance for housing schemes. The Working Group submitted its report in January 1978. The involvement of commercial banks in housing finance was then largely confined to their investment in bonds/debentures of HUDCO and State Housing Boards, and direct loans mainly to their employees. The Working Group suggested commercial banks' additional involvement in housing finance to the tune of Rs. 75 crore per annum which may rise gradually by Rs. 5 crore per annum during the next five years, after which the arrangement could be reviewed. The Working Group thought that banks should not finance the construction of infrastructure facilities and buildings meant purely for private commercial, government/semi-government offices unless such loans were for activities which were eligible for refinance from institutions like ARDC and REC and given to companies or individuals who contracted to undertake infrastructural constructions. However, banks' finance may be extended for construction of (i) residential houses to be built by public housing agencies like Housing and Urban Development Corporation (HUDCO), Housing Boards, local bodies, individuals, co-operative societies or employers, priority being accorded for financing construction of houses meant for economically weaker sections, low income group, and middle income group, (ii) educational and other institutions as well as shopping complexes, etc. which are part of the housing project, and (iii) construction meant for improving the conditions in slum areas. Banks may also extend credit for repairs and reconstruction.

According to the Group, banks should get an average return of 11.5 per cent on their funds lent for housing purposes. The maximum period of repayment should ordinarily be 15 years and the level of margin between 20-40 per cent. For specific housing projects involving large amounts, consortium approach covering commercial banks, Life Insurance Corporation (LIC), HUDCO, Housing Boards, etc., may be adopted. The Group recommended a two-tier housing

finance system with Apex Central Housing Finance Corporation at the top and local housing finance institutions at regional or district level. It also recommended that the LIC, in collaboration with the General Insurance Corporation (GIC), should evolve a scheme of mortgage insurance and thus contribute effectively to the creation of a secondary mortgage market in the country.

With the publication of this report, the concept of mortgage lending through a specialised institutional framework began to receive attention, but this had not as yet emerged as a financial service in the Indian financial system. A major problem of housing finance had always been the perception of "risk" of housing as collateral, given the legal provisions in Indian Law protecting absolutely the rights of tenants. Foreclosure, without undue cost and delay, through the normal judicial process was simply not possible. The experience of most financial institutions (commercial banks, urban land banks, co-operatives, agricultural banks) in credit recovery had been poor and it was generally believed that consumer credit was at best risky in the Indian context. Mortgaging property by way of an English Mortgage was expensive as it attracted stamp duty at the rate of 10 per cent and resource mobilisation without Government assistance in a rigidly controlled financial system was extremely difficult. Further, a Housing Finance Institution (HFI) could not advertise attractively for deposits (which required a statutory advertisement) nor could it offer notice accounts (Deposits withdrawable contingent upon fixed notice periods). It also suffered vis-a-vis such intermediaries as commercial banks, Unit Trust of India (UTI), and corporate deposits, because these could offer more attractive tax concessions and/or a wide range of financial services at implicity subsidised costs. If HFI borrowed long term, security for the loan posed major problems as the concept of a negative lien as an acceptable form of security was relatively unknown. It was in this environment that, in 1978, a private sector institution, namely, the Housing Development and Finance Corporation (HDFC), as a specialised lender to households and to corporate entities specifically for housing purposes, was established. Since then, the sector has grown to encompass three major regional institutions with the promise of a further seven in the near future.

In 1979, the Planning Commission set up a number of Task Forces to report on strategies for housing development as well as the needs of housing and urban finance for the period of the Seventh Plan period 1980-85. Their reports led to major policy decisions for the Seventh Plan emphasising the role of housing finance; they remain today as guidelines to housing policy in the Eighth Five Year Plan, 1990-95. For instance, the chapter on Housing, Urban Development, Water Supply and Sanitation in the Seventh Plan document emphasised the "need for radical orientation of all policies relating to housing" and that the main constraint that "has inhibited large scale house construction by households is the inadequate provision of institutional finance for the housing sector" [Planning Commission, 1985, Vol. II, p. 292].

The second major policy statement considered the relative role of the public and private sector. For the first time this issue was tackled explicitly and unequivocally: The "Government's role in the field of urban housing has per force to be promotional. The major effort will have to come from the Private sector." The Government's role included specifically "the encouragement and support of housing finance institutions that promote the channeling of private resources into housing in a constructive way" [Planning Commission, 1985, Vol. II, p. 295].

These two major policy statements were to have enormous implications for the future evolution of housing sector development during the course of the Seventh Plan period (1985-90). With respect to institutional strengthening, the Seventh Plan was also specific: (i) To establish a National Housing Bank (NHB) which would support the development of a local network of housing finance institutions which would draw resources from households and would be refinanced by NHB acting as a conduit for institutional finance; (ii) To strengthen existing institutions in the public sector such as the Housing and Urban Development Corporation which would be responsible for the "major chunk of public sector investment in housing in the Central Plan"; (iii) To support the expansion of HDFC and HDFC-

type institutions which would continue to "cater to the clientele coming largely from fairly well-to-do sections of society" [Planning Commission, 1985, Part. II, Pp. 293-295].

Housing sector policy thus took a number of strides away from traditional thinking and seemed to lay much greater stress on 'partnership' rather than the State as 'provider'. The Government's role switched to being 'promotional' in terms of resource mobilisation, 'supportive' of social programmes of housing delivery and 'interventionist' in respect of land acquisition and development. The stage was set for considerable progress in housing and urban development.

Task Force reports of the Planning Commission on urban development and management including housing, the report of the National Commission on Urbanisation, the report of the study team headed by Mr. J.B. D'Souza, the Reserve Bank of India's Working Group Report on Housing Finance, the report of the Working Group on Private Housing headed by Mr. M.K. Mukherji, and the report of the Working Group on Housing for the Seventh Plan constituted by the Planning Commission, have all provided valuable background material for the formulation of the National Housing Policy Document (1988) and, in the same year, for setting up of the National Housing Bank as a wholly owned subsidiary of the Reserve Bank of India.

The National Housing Bank One of the key recommendations of the Task Force on Housing in 1985 was to establish two key institutions : A Housing Bank and an Urban Infrastructure Finance Bank. The Government accepted the first to be implemented in the Seventh Plan period. In July 1988, the National Housing Bank (NHB) was established by a Statute under the National Housing Bank Act (1988) and with an initial capital of Rs 100 crore subscribed by the Reserve Bank of India. NHB's main objective was to ensure the development of a viable and accessible institutional system for the provision of housing finance. It views its role as an "Apex" housing finance institution which has a regulatory, promotional and refinance role for other institutions that have appeared or have been operational in the field. In its initial year, the NHB has taken a number of steps to operationalise its objectives: (i) In November 1988, NHB announced the role that it envisages for the commercial banking system in housing finance through its 55,000 branches throughout the country. Commercial banks had hitherto allocated a certain quantum of funds each year, under guidelines issued by the Reserve Bank of India, for both direct as well as indirect lending for housing finance. The new guidelines indicated the terms and conditions on which banks could finance individuals, institutions, Housing Boards and private developers. The terms for individual households were comparable to those currently offered by HDFC. In turn, the commercial banks are setting up housing finance subsidiaries either jointly with existing housing finance institutions or on their own. (ii) In March 1989, NHB announced detailed guidelines for a Home Loan Account Scheme that would be offered and operated by banks through their branch network. A household would be able to save under the scheme for a minimum period of five years at a rate on return of 10 per cent per annum, after which the saver would be eligible for a housing loan of a multiple of the total savings subject to a ceiling of Rs 300,000, as well as some restrictions on the size of the unit to be financed. The scheme is to be a national scheme which would replace all other schemes, if any, offered by the banks. (iii) In April 1989, the NHB announced its refinance guidelines to existing housing finance institutions, aimed at refinancing these institutions, especially for loans made to lower income households and loans made for renovation or for upgrading of low cost housing. Refinance is available upto Rs 50,000 per household for purchase and upto Rs 30,000 per household for renovation or upgrading of an existing unit. The rate of interest varies from 10.5 per cent to 13 per cent per annum depending upon the size of the loan with a slight difference of 1/2 per cent for rural housing. (iv) In June 1989, NHB also announced guidelines for acceptance of deposits by housing finance institutions. The major feature of these guidelines is that housing finance institutions cannot now accept deposits for a period of less than 24 months. (v) NHB has also issued guidelines for the promotion of Housing Finance Institutions in private or joint participation which would be applicable if these

institutions expect financial support from NHB. The guidelines, inter alia, include paid-up capital requirements, gearing ratios, acceptance of deposits rules, and terms and conditions offered by these institutions for housing finance. (vi) In November 1989, NHB announced its intention to finance Land Development and Shelter projects undertaken by public housing agencies such as State Housing Boards and Area Development Authorities. The policy emphasis, however, was on land development where public agencies would "be reoriented to work more as promoters and facilitators for housing activities rather than as builders of housing units." Further, these public agencies would be "well advised to give up the role of long term housing finance, that is, providing plots/houses on a hire purchase basis. The financing role should be left to the banks and housing finance institutions." (vii) Finally, in January 1990, NHB announced its intention to provide finance to Co-operative Housing Societies as short term (3 years) project loans to assist societies with land parcelling and development. Housing finance institutions are currently regulated by the Department of Financial Companies (DFC) of the Reserve Bank of India. The Registrar of Companies notifies the DFC of the existence of a company engaged in housing finance with a view to determining whether it can be classified as a Housing Finance Company. Though, at present, there is free entry into the system, the DFC has control over the deposit activities of HFI's as a means of protecting depositors' funds and as an adjunct to monetary and credit policy. Now that National Housing Bank has been established, it has assumed these regulatory functions. It is felt that the NHB should exercise tighter controls on HFIs mainly with a view to ensuring financial integrity and public confidence in the system. Such a step could eventually help to build a sound institutional base for housing finance as well as for potential future secondary market activity and eventually to increase the flow of resources into the housing sector.

The creation of the National Housing Bank ostensibly to "be the principal agency to promote housing finance institutions and provide financial and other support to them" will be of great operational significance to the future growth and development of the emerging housing finance system as it evolves in the years ahead. Besides, LIC is now playing a more active role in housing finance. Until 1988, the LIC's total direct lending for housing under its Own Your Home Scheme were in 37,730 loans amounting to Rs 160 crore. In 1988 alone, 4,525 loans were made amounting to Rs 33 crore and, in 1989, 16,737 loans were made amounting to Rs 110 crore. In 1990, the number of housing loans is expected to rise to 75,000. The LIC is also likely to establish a subsidiary company exclusively to undertake housing finance activities and so is the General Insurance Corporation (GIC).

The realisation that the public sector cannot adequately play the role of builders of housing units but instead must act as promoters and facilitators, will create an environment that permits private sector initiative in the housing sector which hopefully will add to the national housing stock. Both National Housing Policy and the Seventh Plan have assigned a dominant role to the private sector. Also, the household and co-operative sectors are assumed to play a significant role. To quote the Seventh Plan : "The Government has to play an active role through developing a necessary delivery system in the form of a housing finance market and taking steps to make developed land available at the right places and at reasonable prices" [Planning Commission, 1985, Part II, p. 293]. The Seventh Plan also maintains that the legal framework should be adjusted to reduce the non-financial dis-incentives to housing investment such as rent control, costly building regulations, and restrictive land-management policies.

Despite these initiatives, the future role of the public and private sectors, the constraints faced at present and an operational strategy for the future have not been tackled analytically for the sector as a whole. The National Housing Policy Document makes only two references to this issue, one in the preamble: "There is obviously a need to recognise and rely on a multiplicity of actors including the Government in the production and improvement of housing on the scale required. Government will need to devise and implement coherent and well-set-out shelter

strategies which will enable all the various actors to complement one another and to ensure most efficient utilisation of resources." and the other in the objective statement: "To create an enabling environment by eliminating constraints and developing an efficient and accessible system for the delivery of inputs to maximise housing efforts." The document does not, however, illustrate how this might be achieved.

In the context of housing for the economically weaker groups (EWS), the National Housing Policy seeks 'to accord priority to promoting access to shelter for the houseless and the disadvantaged groups'. But, while many public sector institutions profess to favour housing programs for the disadvantaged groups, an assessment of these programmes would probably identify only marginal success. Also, while the importance of legislative reforms has been duly recognised in various policy documents, in effect, existing laws have only been marginally modified.

Issues in Housing Finance With formal institutional finance for home purchase being in its infancy in India, the major objectives of a future strategy would seem to be the following: (1) To develop an institutional network that would enhance the quantum of housing finance. (2) To identify a potential resource base for the system as a whole. (3) To codify and simplify the legal system with respect to risk management of housing finance institutions (liquidity, interest rates, and default risks in particular). (4) To rationalise and reorient the fiscal system to reallocate funds to the housing sector by providing incentives for household thrift as well as institutional growth. (5) To link formal networks with informal networks which are the major source of financial and economic activity for the rural and urban poor.

Existing Credit Flows and Future Sources In Charts 1.1 and 1.2, we give a schematic representation of formal housing financing intermediation as of March 1989. As the Charts show, the specialised housing finance institutions - housing finance companies and co-operative housing finance societies - mobilise resources from the public. Besides, they depend on the general financial institutions for resources by way of loans/subscriptions to their debentures/bonds. State Governments' assistance to the housing sector is partly derived from LIC/GIC. To this extent they serve as conduits. LIC/GIC funds for this purpose are part of Plan funds. The Government of India also grants loans to HUDCO. There are inter-institutional flows among the specialised housing finance institutions. For example, HUDCO provides funds to co-operative housing finance institutions. The apex co-operative societies lend to primaries, some of which also secure assistance from LIC and co-operative banks.

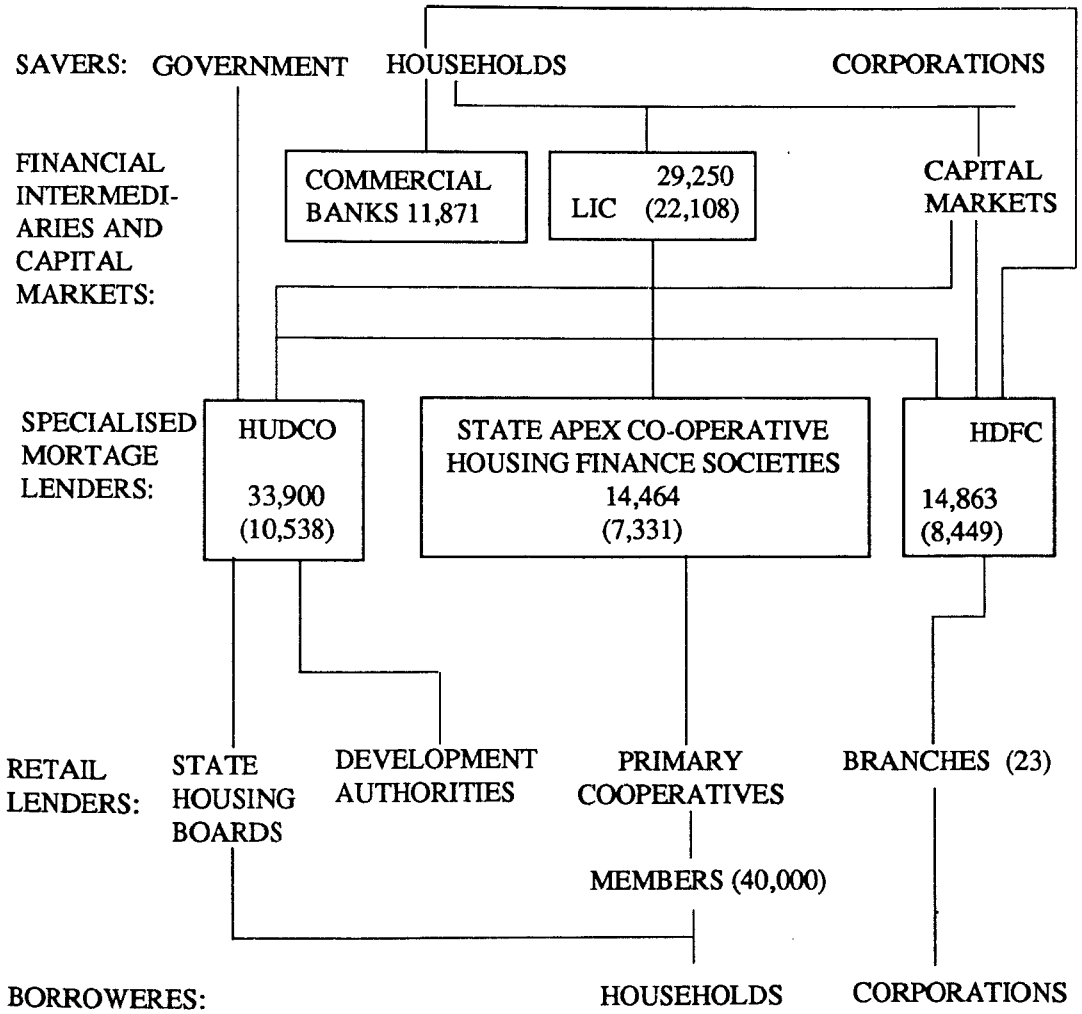
TABLE 1 INTER INSTITUTIONAL FLOWS OF HOUSING FINANCE: 1987-88

(Rs Crore)

		Total	To State Agencies	To Institutions	To Individuals
A.	Government - Central & State	529.22	...	...	...
	Provident Funds (PFO)	318.24	...	...	318.24
B.	HUDCO	438.00	438.00	...	...
C.	Financial Institutions				
	Scheduled Commercial Banks	237.21	151.02	66.11	20.08
	Life Insurance Corporation of India	319.23	903.20	131.11	97.79
	General Insurance Corporation of India	55.00	55.00	...	...
	Unit Trust of India	40.69	40.69	...	...
D.	Specialised Housing Finance Institutions				
	Co-operative Housing Societies	325.00	...	...	325.00
	Housing Finance Companies	254.31	48.36	...	205.95

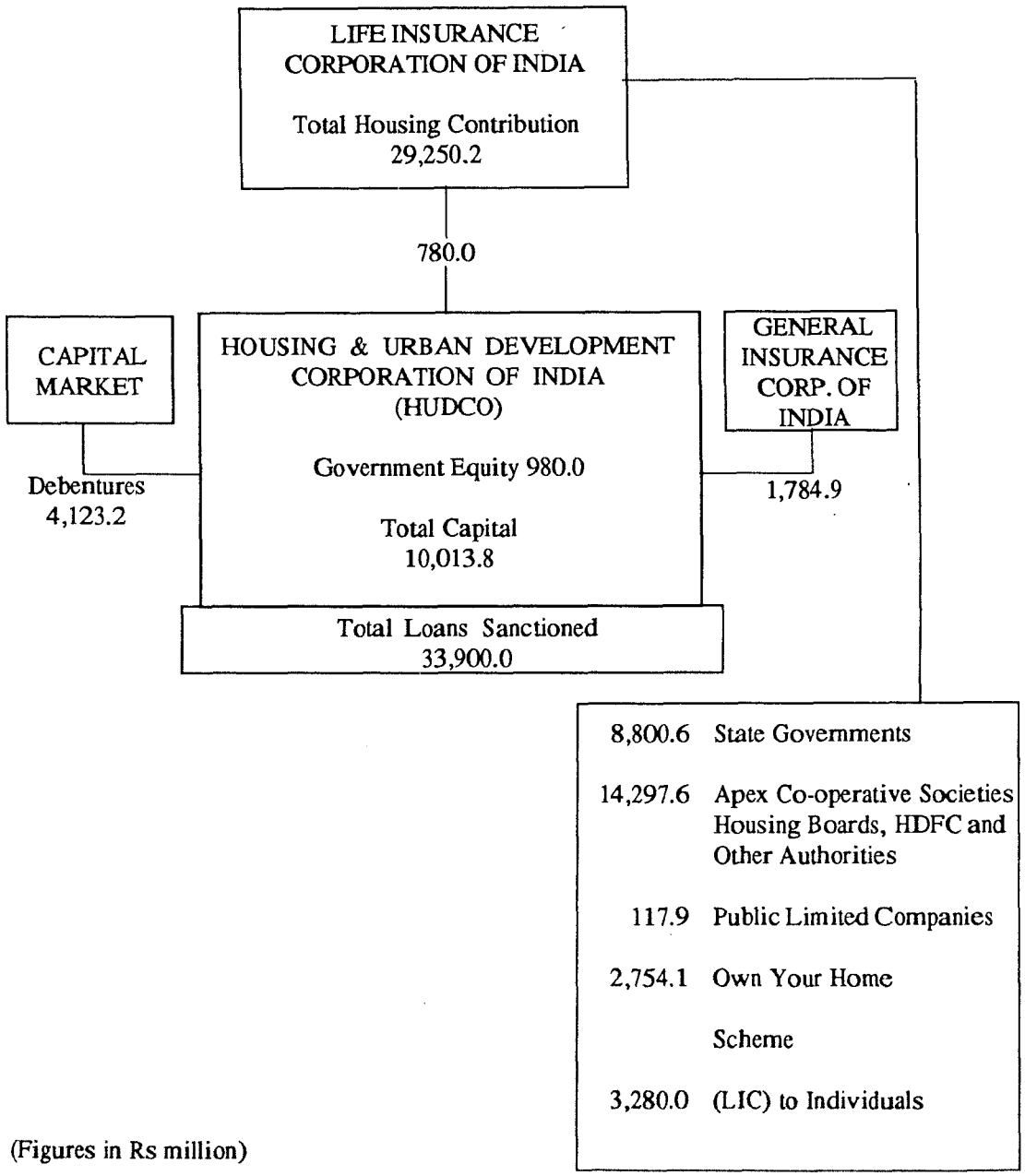
Source: Report of the Sub Group on Housing Finance, Eighth Five Year Plan.

CHART 1.1
Schematic Representation of Formal Housing Financial Intermediation in India as of March 1989



All figures in Rs million
Figures indicate cumulative approvals as of March 31, 1989
Figures in parentheses represent outstanding housing loans

CHART 1.2
Public Institutions Financing Housing
as of March 1989



(Figures in Rs million)

In Table 1 are shown the inter-institutional flows of housing finance in 1987-88. It will be noticed that financial institutions, namely, commercial banks, LIC, GIC, and UTI provided housing assistance amounting to Rs 117.87 crore directly to individuals. Besides, specialised housing finance institutions such as cooperative housing societies and housing finance companies provided housing assistance amounting to Rs 530.95 crore to individuals; part of this, amounting to Rs 197.22 crore, came from the financial institutions. Thus, individuals obtained direct assistance to the extent of Rs 648.82 crore from financial institutions and specialised housing finance institutions. The financial institutions also lent Rs 337.04 crore to state agencies like Housing Boards which are ultimately passed on to individuals. Thus, the direct and indirect housing finance to individuals from the financial and specialised housing finance institutions, in 1987-88, comes to Rs 985.86 crore. If we add to this Rs 318.24 crore of housing assistance from the Provident Fund (PF), the total housing finance to individuals from the several institutions, in 1987-88, amounts to Rs 1,304.10 crore. This constitutes 16.30 per cent of the estimated (by HDFC) investment of Rs 8,000 crore in housing in that year.

However, the need for housing, having emerged as an essential investment priority, will require a larger share of these funds to be redirected to the housing sector. To this extent, under the present financial system, directed credit flows will need to be modified to include a component that encompasses housing finance as a specifically approved investment priority. However, this will not emerge as a long term solution to the flow of credit for housing.

Stepping up the rate of involvement of banks in housing, on the lines suggested by the Housing Ministers of State Governments in a recent meeting, will mean reprioritisation of existing credit allocations. Depending upon claims from other sectors for credit and overall monetary policy conditions, the RBI should review this allocation and improve the percentage accordingly. This may become feasible in the light of recent developments of financial markets.

Housing finance, by virtue of its long term nature, offers an appropriate avenue for deployment of insurance funds. Life Insurance companies all over the world play an important role in underwriting/financing housing/construction activity. In India, the LIC has established its own subsidiary for this particular activity. However, rather than undertaking retail housing finance, LIC could have refinanced housing finance institutions that have already established necessary expertise and managerial systems. LIC is exploring this possibility.

As in the case of LIC and GIC, the Provident Fund Organization (PFO) accumulates enormous funds holding mandatory savings of formal sector employees. For instance, in 1987-88, the total contributions received under the Employees' Provident Fund & Miscellaneous Provisions Act amounted to Rs 2,360 crore. As already mentioned, the PF in that year provided housing assistance amounting Rs 318.24 crore which is 13.48 per cent of total contributions. PFO is a potential investor in the housing sector and it should be possible to increase its contribution to housing finance substantially. In fact, the housing finance institutions should be able to offer suitable debt instruments to meet the basic needs of the PFO. With the creation of the National Housing Bank, it should be further possible to offer appropriate debt instruments to meet these needs by offering the same rate of interest offered by Government under the Special Deposit Scheme. By these means, the contribution of the PFO to the housing finance could be increased from the present less than 15 per cent to 20 per cent of annual accretions to the PFO.

These suggestions, aimed at increasing the existing flow of finance, will necessarily lead to constraints elsewhere. The problem is one of augmenting savings in the economy which can be achieved only by offering instruments that appeal to investors, focusing attention on those who have no tax benefits to look for but seek other benefits, and by diverting investments away from unproductive forms such as gold, property, and other goods. Housing as a durable consumer good offers a good alternative.

SUPPLY CONSTRAINTS ON HOUSING

While recent initiatives have considerably expanded the resource base for housing finance, little attempt has so far been made to identify and resolve the present constraints on the supply of housing. These are: (a) Land parcelling and servicing is the critical constraint on urban housing development largely as a result of the Urban Land Ceiling Act (which limits permissible land holdings in urban areas and freezes the remainder) as well as the inability of the judicial system to expedite cases involving land disputes. (b) The supply of housing is mainly in the hands of relatively small "builders" rather than large-scale construction companies, limiting the benefits that might be derived from economies of scale, modular construction and industrialised techniques. As a result of these constraints, the input costs of housing development (especially land) are extraordinarily high. The House Price to Household Income Ratio on an average is 6.2 so that housing remains expensive in relation to income thus limiting the affordability of market-related housing finance. Housing for the poor can, therefore, be limited only to areas where land is either Government owned or acquired by Government for the purpose.

Land Availability A major constraint to housing has been the inadequate supply of developed urban land. The policy response to this problem has mainly consisted of two kinds of measures, both of which have had counter-productive effects. The first major land policy is the imposition of the Urban Land (Ceiling and Regulation) Act of 1976. The legislation was designed to curb land speculation by restricting land ownership making available surplus land for low income housing. The Act freezes all excess land held by individuals over stipulated limits. These limits vary by city size, the limit being 500 sq. metres in larger cities. It was expected that the public sector would be able to acquire large tracts of land by this procedure, develop them, and allot plots to the poor at affordable prices. The actual effects have been quite the opposite. For example, although the Act has a few tightly specified exemptions, it effectively prohibits transactions in land holdings above specified sizes which vary with the population size of the city. The owners of land are required to register their holdings and surrender the excess to the State Government for a compensation fixed at 8.3 times the actual income gained from the land over the preceding five years. It has, however, turned out that the government has taken physical possession of only about 2 per cent of the estimated amount of excess land eligible for acquisition. The original intention of the Act was to reduce the concentration of holdings by the rich, reduce speculation, and generally bring about a more equitable distribution of land ownership. The effect, however, of this frozen urban land market has been a steep rise in land prices. Clearly, high land prices have made private land development unaffordable in the centres of large cities. This has resulted in private developers moving to the fringes of larger cities where the Act does not apply and hence in much higher costs for both transportation and infrastructure apart from the expansion of many urbanized areas.

The Act is widely perceived to be one of the most important factors inhibiting the operation of land markets over the last decade, a period of rapid urban growth. There has been a continuing debate over the problems created by this Act and suggestions have been made to repeal it. However, the political feasibility of this is doubtful. There is also a suggestion to delete 'C' and 'D' categories of urban agglomerations from the provisions of the Act as it is felt that there is no shortage of land in these agglomerations when compared to urban agglomerates in 'A' and 'B' categories. Even here, a policy of guided development by the private/cooperative sector is suggested. In order to provide incentives for development of vacant land, the imposition of a substantial tax on vacant land has been suggested. Further, with regard to large scale land acquisition by public authorities for development and disposal, there is a concensus that such a step should be taken with great caution, especially after a careful appraisal of the Delhi experience.

The second response, best exemplified by urban land policy in the development of Delhi, has consisted of schemes for large scale acquisition, development, and disposal of land. The concept involves the acquisition, by public agencies, of

large tracts of urban land in and around developing cities; its development, and priority sale, at essentially cost-plus prices, to selected and deserving sections of the population and, at auction prices, to others. The objective was to control unwarranted increases in land prices and the private sector was explicitly excluded from land development. The eventual result has been, predictably, counter-productive. It is difficult for a public authority to develop land fast enough to keep pace with demand because of both financial as well as organizational constraints. A queue for developed land is, therefore, a necessary consequence. Moreover, it has not proved to be easy to devise equitable procedures for the allocation of land such that the poor actually have improved access. Consequently, there has been an increase in the black market or effective price of land, preventing access to the poor.[4]

The crucial question for land servicing relates to an appropriate matching of scale and infrastructure services. Ideally, an appropriate matching between scale and activities would reap the benefits of scale economies in major utility decisions while enabling flexibility in development of layouts for residential areas. At the city scale, the domain of land development and servicing may be more suitable for public agencies, while small residential areas can be adequately serviced by community or private efforts. Within these two poles, however, the domains may be interchanged and joint ventures may be more efficient for sub-zones of one to three sq. km. area. Legal provisions for zonal planning in the form of land readjustment schemes exist in Gujarat and Maharashtra. The land readjustment mechanism practised in Bombay and Ahmedabad under state level Town Planning legislation provides for a collaborative effort of public authorities and private land owners to share available land and make sufficient land available to local authorities without entering the laborious land acquisition process. Amongst the various modes of land development practiced in different States, it remains the most comprehensive, cost effective, and equitable mode of large scale development. Absence of systematic and updated land records and various procedural delays have reduced the effectiveness of land readjustment schemes. With better land information systems and minor changes in existing procedures, it can become an extremely efficient model of public-private partnership for land development.

Provision of trunk infrastructure is and should be a public sector responsibility. Finance and appropriate organisation for cost recovery as well as maintenance are matters which private enterprise can handle. There is need and scope for a joint venture between public agencies and private enterprises.

Procedures for Land Title and Transfer The procedures relating to the sale and registration of property are cumbersome and, combined with relatively high stamp duties, there is widespread temptation to avoid conveyance deed registration and payment of stamp duties altogether. According to one estimate, nearly 75 per cent of the stamp duty is not paid. A large number of transactions are also not undertaken legally in order to avoid restrictions on the resale of government-provided housing and to circumvent high titling charges and capital gains taxes (e.g. system of power of attorney to potential transferors to dispose of property). Also, many allottees of government-provided housing prefer to keep their premises vacant, despite their desire to sell them. Clearly this leads to an inefficient utilisation of the usable housing stock. Recently, the Delhi Development Authority (DDA) has permitted the transfer of premises, provided a transfer fee is paid to DDA equal to 50 per cent of the profit. However, not many people have taken advantage of this facility as the amount involved is usually large. Registration and titling constraints have also inhibited operation of mortgage market. Many mortgage lenders insist upon legal evidence of a clear land title from borrowers. A large number of urban households do not have such evidence despite there being little risk that others would contest their occupancy rights. At present, the required investigation of the title of immovable property is normally for a period of 30 years. Search over such a long period is not only costly and cumbersome but also often impossible. To reduce the hardships and difficulties associated with long investigations, policy makers feel that the limitation period for both individuals and government should be

reduced to a maximum of 12 years. This may also reduce litigation.

Building Materials Another major constraint to greater supply of housing is the high cost of conventional building materials like steel, cement, bricks, and timber. Lower prices require larger supply either through expansion of domestic production or imports. Both appear difficult in the near future.

Building by-laws Building bye-laws and regulations are antiquated, more specification oriented than purpose oriented, and inhibit use of new materials and introduction of cost reduction techniques. That makes cost of even moderate construction too high even for middle income households. Low income households have little choice but to live in dwellings which cannot be legalised under existing bye-laws. An amended national building code taking account of these problems has been recommended at the national level. But, it is yet to be implemented by local authorities.

Rent Control Laws In the past, rented housing was common as exemplified by the chawls in Bombay. It was convenient for a fresh migrant to urban areas given the financial constraints of owning a unit and had the advantage of flexibility in adjusting to changes in income, size of family, and location of work place. While ownership housing immobilized the owner, rented housing allowed both intra-city and inter-city mobility. For the landlord, apart from fetching a stable return, investment in housing had the added advantage of appreciation in value over time. In fact, in smaller towns, investment in a house was a predominant form of investment by families as part of their net personal wealth.

Nevertheless, there has been a continuous decline in the proportion of households living in rented housing. A major reason is the legislative framework facing potential landlords. The Rent Control and Property Tax Act have transformed the right of residence almost entirely in favour of tenants thus discouraging landlords from renting out and hence from further investment in residential housing. The existing housing stock, as a result, is utilised inefficiently with only prime properties rented out for extremely high effective rents, much of which is collected as sizeable front and deposits. Further, the rental market is largely open to foreigners who cannot seek protection under domestic rent control laws. As a consequence, a plethora of devices have emerged leading to unhealthy practices such as "key money", or under-the-table money. On the whole, the retarded supply of rental housing has affected the lower income households most as their ability to acquire ownership housing is limited either because of inadequate incomes or because they are fresh migrants or have not decided on their locational preferences.

National Housing Policy has recognized the importance of rental housing and suggested an expansion of it through : (a) facilitating access to land, materials, and institutional finance; (b) fiscal incentives; (c) modification in rent control laws; and (d) modifying the judicial system to expedite the eviction of illegal tenants.

To conclude, the principal problem in lending in developing countries arises from the shortage of affordable housing. This, coupled with generally low incomes, drives the ratio of house price to annual income ratio above 10 in urban centres thus exacerbating the affordability problem. In these circumstances, housing finance *per se* fails to be a significant factor in the acquisition of housing and transfer of real assets assumes importance. Housing can be made more affordable by taking steps that would help increase the supply of housing, such as removing legislative hindrances that restrict land available for housing and modifying rent control laws; encouraging innovation in construction techniques, building materials, and design of dwelling units; and designing the flow of relatively lower cost, stable funds, for long-term housing loans.

Development of special techniques for low-income lending such as a higher loan-cost ratios, step-up repayment plans, and innovative collection mechanisms is a less difficult but nevertheless an important requirement to increase lending for housing to individuals in a prudent, pragmatic, and socially desirable way.

Environment for Lending The principal problem in lending in developing countries mainly arises from the paucity of affordable housing. In the recent past there has also been rapid inflation, especially in the construction sector.

Unfortunately, incomes, especially of salaried workers, have not grown at the same pace, resulting in a much reduced capacity to save. With interest rates also going up in this period, housing has become less and less affordable. The response of house buyers has been to reduce costs by demanding smaller dwelling units than they would otherwise have acquired, accepting a more distant location with the attendant transportation problems, and cutting down on technical specifications. In fact, specifications are often reduced to a level where the life of the dwelling units may be severely affected.

What is imperative in the current situation is to increase the availability of affordable housing. The difficulty lies in the misguided legislative framework defined by the Urban Land Ceiling Act which froze vacant land and caused an artificial scarcity resulting in rapid inflation in house prices. There is little effort to increase availability of land for housing through infrastructural developments or mass transportation facilities.

Rent control, another misguided legislative measure, effectively prevents redevelopment of old and decaying areas in prime localities. Approvals from local authorities for commencement of housing projects are time consuming. Delays result in much higher costs. Developers exploit shortages and the net result is that individuals are deprived of housing at reasonable costs.

There is the further problem of a heavy political involvement in any discussion related to housing which is normally treated as a 'social' issue. Politicians and governments are particularly keen for all lending to be directed at "low income borrowers". It is more important to adopt a need-based approach than to fix a cut-off level of income. For instance, a family not having appropriate accommodation in relation to some basic requirements such as supply of water, sanitation facilities, or minimum space with regard to size of family and privacy, should be as much a target of housing finance policy as a family which falls within an absolute definition of low income.

However, because of existing political priorities, a lending institution must target its effort towards "low income borrowers" even though housing needs of other categories of individuals could be greater. Public delivery systems cater largely to poor families which result in a high degree of filtering, as middle income families bid for these units at prices much higher than those offered at the time of primary sale.

The legal system also discourages lending. Frequently the process of law takes an inordinate amount of time, sometimes as much as 15-20 years. The implementation of foreclosure laws almost always favours borrowers. Hence, lenders are forced to rely heavily on their own system of appraisal of the cash flows of borrowers.

PROSPECTS AND PERSPECTIVE

The initial basic requirement for an emerging structure for housing finance would be access to a resource base. The narrower the base, the fiercer the competition for available resources, which would result in enhancing costs. It would seem, therefore, that Government policy would need to define the savings base and the capital market base for housing finance institutions carefully, keeping in mind the critical role of the price of housing credit. An institutional development strategy would demand that new institutions transform themselves from mortgage banks in their initial operations (wholesale borrowing and retail lending) to savings institutions (retail borrowing and retail lending) as they establish themselves in their respective market segments. A future system would need to ensure that it was designed to be sufficiently robust to generate its own resources from within the system as well as contribute to financial deepening and institutional diversification of the financial system at large. It is this aspect - the sound structure of institutions within an evolving financial system - that will prove to have the most lasting impact on the real development of housing.

Resource mobilisation and efficient intermediation have become the key ingredients of an effective financial system. The rationale for specialised institutions lies precisely in the development of specialised human resources,

technological systems, and managerial techniques to deal with very specific forms of activity in the most efficient (cost effective) manner possible. India is now fortunate that these skills have been gradually developed and are being embodied in the emerging housing finance system. Their future evolution, however, will require a framework which will permit these institutions to fit into the financial system at large.

India has, over the past few years, experimented with greater liberalisation of economic policy. Fiscal reforms which began in 1986 were designed to place much greater reliance on both efficiency and modernization of Indian Industry. Deregulation, increased liberalization of trade, especially capital goods imports, rationalization of the tax system and a greater consistency in economic policy making became the centre piece of policy making. As a result, the performance of the Indian economy has been markedly better in the Seventh Five Year Plan than in any previous plan. Growth measured by GDP over the period will exceed 5 per cent per annum with a 9 per cent growth rate in 1988-89. Buoyancy in the capital markets during the period has demonstrated the absorbtive capacity of investors for very large capital issues. In the past few months (end 1989), Indian Companies have raised Rs 4,250 crore in the domestic capital market compared with Rs 3,060 crore in the whole of the previous year. Recognising the enormous potential of financial reforms which would give market forces much more importance, the Government of India has begun a series of reforms to improve the system's competitiveness.

With the new Government installed in the country, it is not as yet clear what strategy will be followed in financial policy. It is more than likely that financial discipline will be imposed and that financial institutions will have to rely increasingly on raising their own resources to meet their financial requirements. Whether this will be by way of competitive resource mobilisation or by redefining the directed credit system remains to be seen. Whatever the strategy, the future of housing finance hinges on one key element: the extent to which housing finance is integrated into the financial system in both its retail and wholesale form and the place of specialised financial institutions within this system.

In the present system, the flow of credit is carefully controlled through a complex and multi-tiered system of borrowing terms, refinance rules, and tax incentives, all of which determine where savers finally choose to place their savings. The banking system is, perhaps, the main instrument of the directed credit system, financing both developmental institutions as well as "priority" sectors. As a result, low deposit rates as well as subsidised lending to the priority sector (with substantial loan write-offs) compensated to a certain extent by high lending rates to the commercial sector has created a largely unprofitable banking system with low loan recovery performance and consequent inefficiency. Financial savings have gradually shifted to the relatively more market oriented non-bank finance sector and to the capital market. Housing finance institutions, HDFC in particular, are significant players in this market, though recent regulatory guidelines are likely to diminish this trend.

The major barrier to future growth is likely to be the process of deregulation which, if it occurs unsystematically, will usher in elements of "unfair" competition providing certain institutions with regulatory privileges which are not available to others. This would be especially ruinous if these regulatory privileges concern the availability and pricing of financial resources. A private - public partnership depends on clearly defined principles regarding the role and responsibilities of each partner and future policy would do well to provide these clearly and unequivocally.

In the long run, given the nature and size of resource mobilisation for housing finance, housing finance institutions will need to integrate themselves into the financial system and mobilize resources at market rates in competition with other financial institutions and commercial banks. This is inevitable if housing credit is to emerge as a major financial service. Housing finance can, therefore, only be studied in the context of financial sector strategy and cannot remain on the periphery of the system without being a major drain of budgetary resources of the government. The process of integration, however, will be a major policy initiative which needs to

be thought through carefully and acted upon expeditiously.

A second major concern is the apparent trend in policy - especially by the National Housing Bank - to use the commercial banking system as a central institutional element for the dissemination of housing finance. It constitutes yet another attempt at expanding the much overworked directed credit system to undertake additional responsibilities for which it possesses neither the inclination nor the resources. Housing finance is a retail activity with transaction costs that could be potentially high. Requiring the banks to offer the Home Loan Account to enhance their direct lending to individuals, to lend to public agencies, and to finance land acquisition will simply add to their administrative burden.

This policy is somewhat surprising as the HDFC's experience illustrates. HDFC's success has demonstrated that Housing Finance as a specialised financial activity is not only viable but potentially profitable which, on its own, has attracted a number of new entrants. A measure of financial deepening is the growth of specialised intermediaries that offer a range of financial services profitably which were not available before; this is precisely what has been created for housing without the prior creation of a regulatory framework or a refinance institution. As the institutional structure grows and develops it attains a size that may require a loosening of the fabric of financial inter-connections to make room for the new activity. Housing Finance in India has now reached this stage. Policy issues now concern the extent to which housing finance will be given room to grow, preferably in the context of financial evolution rather than as a privileged beneficiary of the directed credit system.

The presence of the National Housing Bank, however, also presents some strategic opportunities. Housing policy has been broadly framed both in the Housing Policy document and in the conclusions of the Housing Minister's Conference held in 1989. However, the bridge between housing policy and financial sector strategy has not as yet been built. If the National Housing Bank is indeed a "Bank", it ought to link the objectives of housing policy with the resource base that will need to emerge. In other words, the NHB must play the role of a financial institution rather than an Apex institution conducting funds specifically for housing. The quality of housing and urban development is only likely to reflect the financial resources devoted to it whether public or private. Defining the role of both public and private efforts by carefully identifying the comparative advantages of each and working through them to achieve commonly agreed objectives is now crucial.

APPENDIX A: METROPOLITAN HOUSING MARKET IN BOMBAY & AHMEDABAD

In this appendix, we propose to describe the housing market in two metropolitan cities of Bombay and Ahmedabad with which we are more familiar. We should mention that, of the estimated 800,000 housing units financed through co-operative housing in urban India from 1960 to 1985, 27 per cent were in Gujarat and 17 per cent in Maharashtra (the share of national population in Gujarat and Maharashtra were 6.6 per cent and 13.8 per cent respectively in 1981) and the bulk of it was in Ahmedabad and Bombay. Public sector's role in supply of housing (mainly 'publicly' owned rental units) in these two cities is extremely limited and has been declining during the early 1980's. A little over one-fourth of the housing supply consists of slum and squatter settlements. Organised private sector is the major supplier. During 1960's and 1970's, large additions to housing supply were made possible through long-term finance from State level Apex Co-operative Housing Finance Societies. The Apex bodies borrowed mainly from the Life Insurance Corporation and lent to the primary housing co-operative societies promoted by private builders. Once the construction was completed, the responsibility of maintenance and loan repayments were transferred to the occupiers. With the price to loan ratios of 1.5 to 2.0, such financing was well within the reach of middle income households and was the only available source of housing finance in that period.

With a ceiling on loans to individuals and a very rapid increase in house prices in the late 70's, the price to loan ratios rose to 4.5 to 6.0 and co-operative finance ceased to play a major role. Now, the builders first built the housing units, sold

them, and then formed co-operatives not so much for obtaining loans but to save stamp duty. The practice is well established and continues todate. Nearly 80 per cent of housing finance is now raised by down payments by the prospective owners. Institutional finance is negligible and the cost of borrowing funds from the informal credit markets is high and almost prohibitive. In Table A.1 are shown the sources of funds for private builders at various stages of housing projects.

TABLE A.1. FINANCIAL ASSISTANCE FOR PRIVATE PRODUCERS ACTIVITIES & SOURCES

Activities	Source of Finance generally used at	
	Source	Terms & Conditions
1. 'Banakhat - to sell initial Agreement for purchase of land 10 per cent of the total value.	i Own investments generally profits from earlier schemes are rolled over	Implicitly opportunity cost of capital
2. Land Purchase	i Own investments as above	
	ii Initial down payment from members	
	iii Investors/Private financers	1. Term loan of 2/3 years at interest rate 9-12% p.a. for cash loans, 24-36% p.a. for loans by check. 2. Instead of repaying the principal and interest, built up space is allotted to them.
	iv Co-operative Banks	Loan on personal guarantee for 6 to 24 months at 18% p.a.
	v In case of large projects on prime land, collaboration with the land owner or other	The land owner is ensured some land floor space or certain proportion of the profit. Interest rates of 15 to 18%.
	vi deposits	Builders collect deposits from friends/relatives of small sums (5 to 25 thousand) payments are as in the case of investors/financiers.
3. Land Development	i Down payments from clients/members	
4. Construction	i Installments from owners.	
	ii Known financiers	15% to 18% rate of interest
-Foundations -Plinth -Framework -Slabs	iii Credit from material suppliers or collaboration with material suppliers.	Credit of 3 to 6 months. In recent years due to the difficult times - the suppliers give credit 12 months.
-Wall Fixtures -Finishing	iv Short-term loans from sarafs	24% to 36% p.a. for 3 to 12 months amount may range from 50,000 to 1 million rupees.
	v Overdrafts from banks	16-17% interest for 3 to 6 months.
	vi Loans from Co-operative Banks	15-18% interest p.a. for up to 2 years.
5. Maintenance for initial period.	i. Interest from lump-sum collections from members at allotment	Capital to be returned to society or association after the developer leaves.

Source: Based on case studies of private producers in Ahmedabad and Bombay.

Until the late seventies, private sector producers virtually sold their proposed housing projects overnight. Today, housing targeted at the middle income groups requires aggressive marketing. This shift from a sellers' to a buyers' market is due to stable house prices in recent years; for example, house prices in Ahmedabad have barely kept pace with the consumer price index and capital gains are only about 10 per cent per annum. (This exercise of generating an index of house prices in metropolitan areas is based on data from HDFC loan applications). As a result, speculative demand that accounted for nearly 40 per cent of sales of new housing units in the past is now virtually absent. There has been a major shift from investment in real estate to the general financial market. For the real estate market, this has brought about competitiveness among suppliers and greater choice for consumers. As institutional housing finance becomes more widely available,

for both producers and purchasers, present trends are likely to continue.

Though there is a strong case for financing private builders, the nature of operations, from land purchase to occupancy certificates of local authorities, involve many approvals and permissions from local authorities that can take one to three years. The legal status of land and building is also often unclear. Indeed, a major step to promote private sector participation in the real estate market would be to rationalise the 'bureaucratic' tax that needs to be paid in terms of effort and time until the final completion of a project. Greater availability of institutional finance would induce formalization of housing supply and facilitate entry of small firms in the competitive fringe of the market.

Housing for Low-Income Households Continuing increases in slums and squatter housing suggest that low income households are not served by the formal housing market adequately. This is mainly because of misplaced notions of shelter affordability. Urban poor households in Ahmedabad spend nearly 18 per cent of their income on housing. A women's Co-operative Bank in Ahmedabad is successfully providing short-term loans (upto Rs 15,000 for a three years term at 13.5 per cent per annum interest) for upgrading housing to its women members who work in the informal sector. A voluntary organization in a Bombay slum has been able to provide cash subsidies (upto Rs 2,000) for home improvements. As a consequence, households have borrowed five times this amount from informal credit markets. Current programmes of slum upgrading in Indian cities are generally limited to specific projects financed through international or bilateral agencies. The Self Employed Womens' Association (SEWA) and the Co-operative Banks (Ahmedabad) experience suggests possibilities outside the present slum upgradation programmes.

Serviced Land for Housing One of the critical areas of concern, particularly for new housing projects targeted at low income households, is the availability of serviced land at appropriate locations at reasonable prices. Land markets in Indian cities appear more buoyant than the housing market, due to restraining legislation on use as well as transfers and ceilings on land holding which restrict supply. Such restrictions bid up land prices wherever clear titles and necessary permissions have been obtained. In suburban locations of Ahmedabad, land prices rose by 10 to 15 per cent per annum, whereas in Bombay they rose by 17 to 20 per cent per annum.

The Urban Land Ceiling Act applied nationwide in 1976, has had varying impact on land and housing markets. The legislation was designed to curb land speculation by restricting land ownership making available surplus land for low income housing. The legislation limits personal land holdings to 500 square metres in Bombay and to 1,000 square metres in Ahmedabad. Exemptions to the prescribed ceilings were available, if the owner undertook low income housing within the prescribed time limit. While the enactment of ceilings bid up land prices in developed areas, it also brought in proportionately larger land into the housing market through various exemptions incorporated in the Act. New housing starts in Ahmedabad during 1976-81 were nearly three times greater than in 1971-76.

The objectives of the ceiling legislation were, however, not fulfilled as the bulk of housing on exempted land intended for poor households filtered up to middle income families. Land holdings in excess of the prescribed ceiling limit have also not been acquired by local governments for low income housing.

Today, the major proportion of new housing activities take place in metropolitan peripheries, that are beyond the jurisdiction of the local municipal governments. As a result, essential services like adequate water supply and sanitation are not available. The services provided by private sector housing developers are inadequate and pose serious health hazards. Residents in suburban Bombay often spend as much as Rs 200 per month (about ten per cent of income) to purchase water from delivery trucks. Sanitation systems based on ill designed septic tanks and soak-pits pose serious health hazards.

APPENDIX B: HOUSING DEVELOPMENT FINANCE CORPORATION

The Housing Development Finance Corporation (HDFC) as a purely private sector financial institution was established in 1978. Its shareholding structure was as follows:

The promoting institutions - The Industrial Credit and Investment Corporation of India, The International Finance Corporation and the Aga Khan Fund for Economic Development - lent HDFC the critical requirements of credibility as well as a National status; it automatically resulted in HDFC being placed in the context of a development bank in India albeit serving the housing sector. The initial line of credit of US $ 4 million by the Industrial Finance Corporation (IFC) demonstrated a measure of confidence in the new venture which assisted the initial issue of share capital of the new Corporation. An issue of Rs 100 million in 1978 was, by prevailing standards at the time, a large issue. The public issue was oversubscribed and HDFC commenced operations.

TABLE B.1. SHAREHOLDING STRUCTURE OF HDFC

(Share Capital in Rupees)

	Initial 1978	After a Rights Issue 1987	Current 1989
I Authorised:			
Equity	200,000,000	450,000,000	450,000,000
Unclassified	50,000,000	50,000,000	50,000,000
Total	250,000,000	500,000,000	500,000,000
II **Issued & Subscribed:**			
(i) First Public Issue	100,000,000	100,000,000	100,000,000
(ii) Rights Issue	...	50,000,000	50,000,000
(iii) Second Public Issue	...	50,000,000	50,000,000
Total	100,000,000	200,000,000	200,000,000
III **Shareholding Structure** (% Share)			
Public & Private Sector Companies	48.5	33.7	38.3
Individuals	14.6	28.6	26.2
Financial Institutions	12.5	16.4	19.4
Commercial Banks	15.7	10.8	9.0
Insurance Companies	3.1	5.3	4.6
Others	5.6	5.2	2.5
Total	100.0	100.0	100.0

The concept of HDFC, as it was initially conceived, began with the formulation of a number of key principles which, with hindsight, proved to be critical for its eventual success. These could be presented as follows: (a) There was a major need for housing finance targeted at the household level throughout the country; (b) Performance in Loan Recoveries was a direct function of the quality of the credit creation process; (c) Resource mobilisation was critical and therefore required an institutional structure which commanded confidence; (d) Initially, a financial institution of this type would be required to mobilize wholesale resources and lend retail implying a mortgage bank structure as opposed to a Savings and Loan type institution. (The domestic regulatory environment would make this necessary). Essentially, initial rapid growth, necessary for (c) above required a mortgage bank type institution; (e) It would be preferable to establish an all India Institution rather than one based on a regional concept; (f) Managerial inputs would be critical to the nature of the institution conceived, especially to introduce and operate systems that minimised high transaction costs per loan in a retail financial activity. Recruitment of young talent would be necessary to infuse the institution with a set of operating practices not normally found in development banking; (g) Success would require a lean and efficient organisation capable of minimising transaction costs per loan

thus being able to survive on fairly thin spreads between the cost of funds and the lending rate. Most important would be very strong customer orientation not normally observed in this type of institutions; (h) The institution would be market oriented; seeking funds and designing products that met with market preferences. Success depended on both sides of the balance sheet : resource mobilisation and mortgage lending. This exercise would have critical implications for managerial dynamism; (i) Finally, the institution would be structured in a manner which brought both public and private sectors together and combined this with the involvement of the public at large.

Combining these elements created the initial structure of HDFC . To be purely a private sector institution and to aspire to national status was clearly not within the realm of possibility; the institution had to be placed within the context of local financial institutions and yet had to be somehow different. The model of DFI's (Development Financial Institutions) fitted the bill perfectly though with a shareholding structure which shared ownership with both the public and private sectors. This structure provided the new institution with an autonomous Board of Directors and consequently a professional management team. An international partner lent credence to the feasibility and the medium term outlook for the enterprise, especially if backed by loan support in its initial years. This helped boost the credibility of the concept with potential shareholders and creditors.

The first task was to create an operational plan for lending and to seek methods by which HDFC could raise further resources once its initial capital and the IFC loan were utilised. Pricing credit depended largely on the expected cost of future funding and the expected inflation rate. India's controlled financial sector has resulted in an extremely stable predetermined interest rate structure and while, in effect, fixed rate loans were to be made, HDFC reserved the right to change its pricing policy in the event of major changes in the money market. In effect from its very first days, HDFC was attempting to develop a market-oriented housing finance operation where the cost of credit was a direct function of the cost of resource mobilisation from the market. The 'market' defined in this context, was a combination of the official market for financial resources (e.g. the financial institutions) competing on normal market terms and the influence that could be exerted on the directed credit system to include housing finance as a component of officially approved resource flows. The 'market' also included deposit mobilisation by the creation of deposit products that were competitive in well defined maturity spectrums for specified investments (e.g. Charitable Trusts, Co-operatives, and specialised financial institutions). As HDFC had begun with strong international support, international sources of funds were also considered a possible long term potential for resource mobilisation.

Regulatory Environment The Regulatory Environment faced by HDFC in its initial years can be classified as follows: (1) Regulations under the Company Law; and (2) Regulations by Reserve Bank of India (Non-Bank Financial Companies Directions, 1977). Initially, the regulatory framework was not imposing. HDFC was free to accept deposits between 6 months and 5 years, had to maintain a liquid assets ratio of 10 per cent and could price its credit according to market forces. No imposing guidelines concerning portfolio management, net worth requirements, minimising risk exposure, accounting and auditing requirements (besides the requirements under Company Law) were necessary. This made its initial task somewhat easier. The current regulations, now issued by the National Housing Bank, are less flexible and are summarized in Table B.2.

However, development institutions, under Company Law as well as the Income Tax Act, were awarded specific exemptions to help play a more effective role in their specific developmental activities. Most important of these was a section in the Income Tax Act which exempted 40 per cent of DFI's pre-tax profit from the Corporate tax liability. This amount would be credited to a Special Reserve Account. It was critical that HDFC be awarded similar exemptions on the grounds that it was, in effect, a development institution. It would also help

HDFC in its quest to be classified as a Development Bank, in the conventional sense of the term, in the Indian context of considerable importance. The strategy, therefore, was to obtain an anchoring base of HDFC as a development institution without requesting Government for a privileged source of finance. Much of this effort was directed at incorporating a niche for housing finance institutions in general in the legislative structure of the country rather than for HDFC in particular. Amendments to various Acts inserted the words "and for institutions specifically established to undertake housing finance in India". This has gradually provided the enabling environment for the development of housing finance as an industry in itself and has made the growth of the institutional network so much smoother for others to follow. The difference, now, between HDFC and other development institutions is, therefore, that HDFC, unlike other development banks, does not receive a facility to issue government guaranteed debt instruments in the market or access any Government supported privileged lines of credit. This, in turn, has preserved dynamism in HDFC on both sides of its balance sheet, its liabilities as well as assets.

TABLE B.2. SUMMARY GUIDELINES FOR HFIS ISSUED BY THE NHB

1. Main Object	The business of providing long-term finance for construction or purchase of houses in India for residential purposes.	
2. Minimum Paid-up Capital:	Rs 10 million	
Minimum Promoters' Contribution:	30%	
Minimum Government/Approved HFIs	20%	
3. Gearing	Net Owned Funds	Total Borrowing
	Upto Rs 100 million	10 times
	Rs 100-200 million	12.5 times
	Over Rs 200 million	15.0 times
4. Lending Rates:	Upto Rs 20,000	12.5%
	Rs 20,000-Rs 50,000	13.5%
	Rs 50,000-Rs 1,000,000	14.0%
	Above Rs 1,000,000	14.5-16%
5. Front end Charges:	Should not exceed 2% of the loan	
6. Tax Concessions:	a) A public company formed and registered in India with the main object of carrying on the business of providing long term finance for construction or purchase of houses in India for residential purposes can create a special reserve within an amount not exceeding 40% of its total income; such a reserve is admissible as a deduction in computing income subject to Income Tax. b) Investments in the new equity shares of such companies are an eligible deduction upto 50% of the cost of such shares. c) Deposits with or investments in any bonds issued by such companies from income derived from property held under trust wholly for charitable or religious purposes qualifies as an eligible mode of investment. d) Interest on deposits with such companies qualifies for deduction from tax. e) Repayment of the amount borrowed from any such company for housing purposes is eligible for deduction from tax up to the limit of Rs 10,000. f) Deposits made with such companies are exempt from Wealth Tax.	

Resource Mobilisation Once the building blocks were in place, HDFC could commence its resource raising strategy. In its first year 1978-79, a small loan from ICICI of Rs 2.5 million was received and in the second 1979-80 the first disbursement of the IFC loan of Rs 8.1 million (See Table B.3) was drawn. It was only in 1980-81, the third year of operations, that HDFC formulated its initial deposit programmes consisting of Certificate of Deposits, Loan Linked Deposits, and Facilities for Non Resident Indians. This year also witnessed its first loan from the Life Insurance Corporation of Rs 100 million. Continuous efforts to create an allocation for housing finance from commercial banks paid off with the first loans in the fourth year of operations. This was the first break-through in providing access to the directed credit system for housing finance companies. These were also years in which the Certificate of Deposit Scheme, targeted at well defined and carefully selected markets, began to take off.

TABLE B.3 HDFC RESOURCE MOBILISATION: SOURCES OF FUNDS OUTSTANDING

(Rs million)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Loans												
ICICI	2.5	2.5	2.5	2.5	2.2	2.0	1.7	1.5	1.2	1.0	0.8	0.8
UTI										7.0		
LIC			100.0	100.0	100.0	100.0	100.0	100.0	200.0	280.0	460.0	680.0
GIC					30.0	30.0	30.0	25.0	15.0	5.0	-	-
ARMY							150.0	150.0	150.0	150.0	150.0	150.0
USAID						300.0	300.0	540.0	840.0	1,020.0	1,020.0	1,420.0
WORLD BANK											1,249.9	2,538.8
IFC		8.1	30.2	27.0	23.8	20.6	17.5	14.3	11.1	13.0	10.4	5.2
BANKS				38.7	243.7	243.7	280.8	438.1	627.3	903.2	1,196.8	1,463.5
TOTAL	2.5	10.6	132.7	168.2	399.7	696.3	880.0	1,268.9	1,844.6	2,379.2	4,087.9	6,258.3
DEPOSITS												
CD		38.8	178.0	397.3	665.9	1,189.9	1,764.2	2,472.1	3,128.6	3,759.0	4,143.8	4,452.6
LLD		-	0.1	1.4	4.7	8.2	12.3	21.8	31.7	39.7	37.4	32.0
CI								28.5	248.9	419.3	583.9	732.0
HSP								3.2	12.8	26.0	66.0	130.8
TOTAL		38.8	178.1	398.7	670.6	1,198.1	1,776.5	2,525.6	3,422.0	4,244.0	4,831.1	5,347.4
BONDS						100.0	200.0	300.0	450.0	850.0	996.7	1,540.0
REPAYMENT OF MORTGAGE LOANS		2.5	12.8	32.1	57.0	122.5	197.2	286.6	431.1	645.9	652.0	1,119.3
TOTAL	2.5	51.9	323.6	599.0	1,127.3	2,116.9	3,053.7	4,381.1	6,147.7	8,119.1	10,567.7	14,175.0

As Table B.3 indicates, HDFC mobilizes resources through a diversified combination of wholesale and retail deposits, term loans, bonds, and equity. It also indicates that repayments of past mortgage loans are gradually becoming a sizable source over time for new lending. At present, repayment constitutes about 20 per cent of new lending. Table B.3 also shows that HDFC's liabilities are almost evenly distributed between Loans and Deposits. The rates of interest offered on deposits are almost uniformly about 1 per cent above those offered by commercial banks and about 1.5 per cent below that offered by the Unit Trust of India and other corporate borrowers. Prompt and efficient service by HDFC to all depositors has earned HDFC a reputation for speed and safety. This has boosted confidence and has enabled HDFC to procure a number of tax advantages for its deposits as well as trustee security status which permits investment by charitable trusts. HDFC deposits are also now eligible investments for the liquidity requirements imposed on corporate deposit takers. HDFC also offers savings schemes with advantage in terms of preferential access to housing loans for households through its Loan Linked Deposit Scheme and the Home Savings Plan (HSP). The latter is an attempt to introduce contractual savings based on German experience, the unique feature being a lower cost housing loan at 8.5 per cent with savings accumulated at 6 per cent per annum. Though both these schemes represent a fraction of HDFC's deposit base, HSP has been growing significantly as aggressive marketing has been introduced. Table B.3 also indicates gradual growth of loan portfolio during the 80's with a sharp increase since 1985. Foreign borrowings have been a significant proportion of total liabilities but these have stabilised as domestic resource mobilisation has increased at an increasingly rapid rate.

Though HDFC's Bonds are long term (10 years), flexibility in transfer has made this series more marketable to investors. Bond issues have been cautious and have catered to a small but growing segment of the market.

USAID staff, on a routine visit to India, visited HDFC in 1982 and, impressed by the success of a non-government financial institution in the housing sector, offered support under its Housing Guarantee Programme. This provided much needed funding in the early stages of HDFC. HDFC had absorbed its first large line of credit from the LIC and was in search of alternative funding mechanisms, especially different variants of its rapidly growing Certificates of Deposits. In the following year, as a consequence of the drawing of USAID guaranteed debt, international resources became a significant component of its resource base and have continued to remain in the range of 10 - 15 per cent of the total. Table B.4 described the USAID programme with HDFC, both phases of which were completed in 1989.

TABLE B.4 USAID PROGRAMME WITH HDFC

Tranche	US $ Amount* Millions	Rupee Amount Millions
I (December 1981)	20	200
II (August 1983)	10	100
III (August 1984)	20	240
IV (October 1985)	25	300
V (November 1986)	15	180
VI (January 1988)	35	490
Total	$ 125	Rs 1,510

Rupee amounts reflect the then prevailing exchange rates.

The International component continues to remain significant as a result of HDFC's first agreement with the World Bank for a line of credit of US $ 250 million signed in April 1989 and partly disbursed later in the same year. This loan continues to support institutional development of a market oriented housing finance system which HDFC pioneered with a special emphasis on geographical spread and greater access to many more households throughout the country through an expanding branch network.

While international resources proved to be significant, they were a fairly constant proportion of the total resource base; World Bank finance being limited to a predetermined maximum percentage of domestic resource mobilisation. While HDFC has been successful in tapping the directed credit system through regular allocations by the banking system and more recently in reviving lines of credit from the financial institutions, its main innovation in domestic resource mobilisation has been in raising resources through its Certificate of Deposits. This has been enhanced by its series of Bond Issues, mostly subscribed by private placement, which have grown to a significant proportion of total resource mobilisation.

The essence of this success lies in identifying potential market niches in the context of a highly regulated market and designing appropriate instruments to satisfy already identified needs in terms of both maturity and yields by various client groups. Charitable trusts, development authorities, state and public institutions, public and private sector corporations, all have surplus liquid funds, short and long term, that seek investment opportunities with the best available yields over specified periods of time. They also demand full confidence in the service that will be offered with respect to timely payment of maturing investments. HDFC's instruments were designed to meet these requirements.

This approach - a market orientation within a constrained system, depends heavily on the managerial practices within an organization, and the ability of the organization to be adaptable to the external environment as well as to envisage methods by which a constrained system, through its own logic, could be made to work for the organization. The incentive to do this depends heavily on not possessing a predetermined source of funds which can be depended upon for financing future operations. It is precisely the uncertainty of the market that keeps internal systems alive and antennas tuned to market developments.

Problems in Lending

One of the major problems that HDFC encountered is in assessing applicants' incomes.[5] Self-employed individuals with small incomes are not required to pay income tax and so there is no possibility of verification of income from their tax returns. There are no specialised agencies offering credit reports on individuals. Hence, HDFC has resorted to innovative techniques for this purpose. For instance, while lending to a co-operative society of small traders in a small town in Gujarat, the HDFC credit officers conducted a field credit investigation which involved spending time with vegetable vendors and small grocers at their stalls by the roadside to estimate their incomes. Occasionally, such people do not even have bank accounts; they have then to be encouraged to open an account and deposit a regular sum every month to enable them to service the loan conveniently. Many borrowers evade income taxes and disclose lower incomes in their tax returns while requesting loans that can be serviced only if their incomes are substantially higher, causing a dilemma for institutional lenders. Other applicants disclose higher incomes than they actually earn, in the hope of getting a larger loan as their repayment capacity would be seen to be higher.

Many borrowers are not literate and are not even in a position to complete an application form for a loan. The problem is further compounded because there is no uniform language for communication. HDFC has to assist individuals in deciding on the loan amount to be sought as well as in filling out forms. More importantly, individuals have sometimes to be educated about the obligation to repay the loan in a timely fashion. In the past, there have been various occasions when government and government agencies have provided loans, especially in small towns and rural areas, which have then been written off for political gain, resulting in individuals developing the belief that loans need not be repaid.

While assessing the value of a dwelling unit for purposes of credit appraisal of the borrower, HDFC often finds that the appraised value is higher than the disclosed cost, because developers collect part payment in cash (and thereby avoid income tax) and the borrower arranges such cash payments from other lenders, affecting repayment capacity. Credit appraisal of borrowers thus becomes increasingly difficult.

In many instances HDFC has arranged for the loan instalment to be deducted by the borrower's employer from his salary. The employer then sends HDFC one cheque each month covering the instalments of all its employees who took loans from HDFC. This system works with employers in the organised sector; with smaller employers however it could be counter-productive if the employer uses the amount collected as working capital, and fails to remit it to HDFC.

An interesting problem encountered by HDFC, concerns collection mechanisms in respect of borrowers whose income arises irregularly, as in certain self-employed cases, or on a daily basis, as in the case of workmen. For instance, HDFC has provided loans on a pilot basis for a housing project in a tribal area of Valod. The loans range from Rs 1,000 to Rs 3,000 per dwelling unit and the cost of the dwelling units is a maximum of Rs 5,000. The borrowers include agricultural labourers earning about Rs 10-12 per day during the sowing and harvesting seasons and possibly nothing for part of the year. Together with a local voluntary agency in that area, HDFC encouraged these individuals to save on a daily basis out of their incomes. With other agencies, it examined the possibility of setting up a service agency in each village which would be responsible for collection of the loans for a small fee; for instance, a local shop-keeper who tends to be very astute with regard to the credit rating of his clients.

Frequently, delinquent borrowers have to be approached personally, the legal notice often being seen as an empty threat. HDFC therefore often has to resort to the additional security of personal guarantors. In other cases, HDFC does not obtain a proper mortgage because the stamp duty for creating the mortgage would be unaffordably high; again, HDFC has had to innovate and find alternative security.

As there is no system of construction finance, HDFC has to provide the borrower with finance for progress payments even before the dwelling unit is ready, which means that a mortgage is not available. The security is, therefore, of use mainly

as a psychological factor for the interim period.

All these factors greatly increase the cost of servicing loans. Coupled with this, is the fact that the loan amount is small and the repayment period long. The profitability of loans is therefore not very attractive. In case of arrears in repayment of such loans due to illness or loss of employment, the lending agency would have little choice but to reschedule such loans.

The key characteristic of borrowers is their low savings capacity. Low-income individuals have only a small accumulation of savings. To enable such individuals to acquire a dwelling unit, it is necessary to reduce the down payment. In developed countries, the down payment has been reduced to as little as 5 per cent with the help of mortgage insurance. In an inflationary environment, such as is prevalent in almost all developing countries, it should be possible to reduce the down payment substantially, even without mortgage insurance. However, in the context of relatively high house prices, reducing the down payment by itself will not help the large majority of people who are limited by their capacity to repay the loan they can obtain. HDFC has developed a number of devices to tackle the high down payment problem. For instance, in the case of young borrowers whose future income is expected to increase, HDFC has introduced a repayment plan where the loan instalment increases in steps every few years. This plan enables an individual to service a larger loan as income rises. Alternatively, a longer term loan could be approved initially and then brought down periodically in conjunction with future repayment capacity. HDFC offers both alternatives known as *Step-up Repayment Facility* and *Telescopic Loan Facility*, respectively.

Various other possibilities exist for enhancing a mortgage loan. One of the practices adopted in many countries is cross-subsidising interest rates, with higher income borrowers subsiding lower income borrowers. However, this is fraught with problems. The demand for the latter outstrips demand for the former and the programme cannot last indefinitely, even where government subsidises a programme. What is not viable in a market environment should be adopted only with great caution.

Suggestions are often made for accepting a higher percentage of income towards repayment of a housing loan. HDFC has selectively attempted to do so where past savings history of an individual justifies it; in other cases, it would put needless strain on the borrowing family, coupled with unacceptable risk for a lending institution. However, flexible loan instalment plans, especially those using balloon payments out of accumulated savings, as distinct from repayment capacity based on income, have considerable merit.

One approach that needs to be developed further is to encourage individuals to filter up in housing as their financial circumstances change. Where land availability is not a constraint and individuals can build single family dwelling units, a lending institution can encourage them to build modular-type dwelling units which can be expanded as and when their financial circumstances improve. Alternatively, mobility from one dwelling unit to a better one should be encouraged. Thus, an individual can acquire an affordable dwelling unit, and, later on, as circumstances improve, move to a better one. HDFC's *Bridge Loan Facility* helps families make this move by financing the new unit before the old one is sold.

Housing for the Poor

While private developers are major suppliers of housing in most major urban centres, housing for the poor remains largely outside the formal private delivery system. Much remains to be done in designing and financing low income housing. A recent evaluation of sites and services projects by the World Bank concluded that, while the concept was a valid one, replicability remained elusive largely owing to erroneous judgements on appropriate affordability estimates. This highlights the need to link low income housing or shelter projects much more closely to the perceived needs of the beneficiaries backed by their willingness to pay for the service stream of benefits over time. Links between formal financial institutions and informal local level networks are essential to future policy in this area.

Our experience in India is that the potential for

these links can be extremely effective in understanding local problems and designing specific approaches for their solution. HDFC recently promoted the Gujarat Rural Housing Finance Corporation (GRUH) specifically to deal with some of these issues. GRUH finances the acquisition or upgrading of housing in rural areas and small towns with a population below 50,000. GRUH reaches out to local level networks in order to administer and disseminate housing finance - e.g. dairy and cotton co-operatives, non-government organisations - and those networks in turn have positive incentives to utilise GRUH's financial services. GRUH is experimenting with new methods of credit appraisal, and training programmes are planned jointly with GRUH staff as well as local level organisations to help jointly administer operating systems more effectively.

Essence of Success: Developing Managerial Styles

The basic philosophy that has characterised HDFC's approach to management has been one of 'learning by doing'. Much of the techniques of training and development have evolved out of devising methods that serve specific requirements of the organisation as its structure and activities evolve. The most powerful element of the approach was to have a well defined Corporate Objective Statement which set out clearly and unequivocally the value systems that were to be practiced throughout the organization. Most important of these have been a strong and unbending commitment to customer service, a strong rejection of unethical or corrupt practices, a commitment to hire young staff and to give them responsibilities relatively early in their careers, to develop people through a constant process of skill development, and to maintain a strong tradition of excellence in whatever activity HDFC decides to undertake.

The identification of the staff at all levels with Corporate Goals was extremely high reflecting a strong personal commitment by staff to the activities they were engaged in. Once this was achieved, the rest was not difficult to address. Given the learning by doing approach, it was essential to put in place processes by which system improvements as well as problem solving became an integral element of operational management. Forums were created so that the two processes could be understood and implemented. It required a bottom-up approach which *facilitated* rather than *instructed*. Solutions to problems lay with the very people who could identify the problem in the first place and then through group interaction move towards a solution.

As a result, HDFC developed a method of *structured development* through a process of *action learning*. The former provided the methodology (video interactive 'live' training, a system of operational conferences, experimental learning and so on) within which participants could tackle live problems. There were no ideal solutions. Specific problems would be addressed. The group would tackle issues at the 'coal face' always maintaining the relevance of the subject matter through extremely advanced techniques. In this manner, the work task was always the centre of debate and gradual solutions enhanced the ability of the group to work with each other towards solutions of common concern. The future will take this process further by introducing behavioural modelling which will link self development to task based learning.

The chosen method of managerial skill development suited HDFC's staff profile; essentially young staff, with short professional experience, or from management schools, or professional degree courses. Even today, after eleven years of operations, the average age of HDFC staff is 31 years. This profile has permitted the use of innovative and open management styles, stressed self development, and ensured responsibilities early in career development. Motivation and career prospects have been enhanced by rapid growth, geographical expansion, and a diversification of activities. Housing Finance, being a pioneering activity in India, has added to the challenge, and success has brought with it a certain measure of satisfaction and pride, especially with positive responses from those who have used HDFC's services.

HDFC's operating systems, lending policies, fund management techniques and resource mobilisation strategies have provided the skeletal

structure on which a housing finance system can be built. It is essentially an alternative to the formal directed credit system. It has interfaced with the system but is distinct from it. The most important characteristic is its diversified and market-oriented resource raising strategy which links its marginal cost of funds to the lending rate for its loans. In this sense its growth and diversification is a direct function of its ability to raise sufficient resources at a cost that it determines is affordable to its clientele, linking both the demand and supply sides of the equation.

In its first decade of operations, HDFC was clearly the principal and largely innovative institution in the field. In its second decade, however, the environment it faces has undergone substantial change. In Table B.5, we give the loan operations of HDFC from 1980-81 to 1989-90.

TABLE B.5. LOAN OPERATIONS OF HDFC

Year	Number of Units (In terms of Approvals)	Loans Approved (Cr. Rs.)	Loan Disbursed (Cr. Rs.)
1980-81	9,641	33.27	20.99
1981-82	12,403	46.62	29.79
1982-83	19,472	76.11	47.84
1983-84	27,379	102.88	74.89
1984-85	27,645	134.58	93.24
1985-86	40,848	186.42	145.73
1986-87	46,023	237.51	175.52
1987-88	55,156	304.95	235.31
1988-89*	49,682	333.30	255.21
1989-90	95,971	603.03	489.26

* For 9 months.

Given the size of HDFC's current programme and its enormous annual funding requirements, strategies followed in the past will no longer be valid. (In 1988-89, HDFC's housing loan approvals reflected a 46 per cent increase over the previous year - the increase was 28 per cent for the preceding two years - despite a much higher base). Past efforts at prompting regulatory change for housing finance institutions will have to be taken much further in the decade of the 90's which is likely to witness increasing competition and deregulation in the credit and capital markets. HDFC's role as a 'Trade Association' for the growth and development of housing finance activity and its advocacy of an enhanced growth of a 'private' market oriented housing finance institutional system will now, in all probability, be taken over by the National Housing Bank. However, the NHB has concentrated initially on its regulatory and refinance role for the sector leaving the 'promotional' role to independent institutions and perhaps this latter role will be the most critical aspect of future development.

Perhaps HDFC's greatest contribution to sector development was, and indeed continues to be, the successful and innovative corporate structure it has built for housing finance, in defiance of conventional approaches to development banking. The model combines social awareness and market discipline within a highly regulated system in order to ensure that the system is demand driven - that products and processes meet the real needs and requirements of actors in the real estate market place - ensuring that the process of 'learning by doing' is taken to its logical conclusion. Demonstrated success has enabled the institution to command the respect that is required if any influence over policy decisions or regulatory change is to be possible.

NOTES

1. Kutcha: A unit with mud walls and a thatched roof. (An 'unserviceable kutcha' has thatched walls).
Pucca: A unit with burnt bricks, metal or concrete walls and tiled, slated or corrugated metal roof.
Semi Pucca: Units which do not fall under above categories.

2. The annual demand for new housing stock is close to 3 million units compared to an increase in housing stock of 2.5 million units.

3. India has completed seven five-year economic development plans since Independence in 1947.

4. Another contributory factor is an endless stream of migrants to larger towns/cities.

5. We are indebted to P P Shah for this selection which draws heavily on his paper, "The Problem of Lending in Developing Countries", P P Shah, Housing Finance International, February 1988.

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DAIRY DEVELOPMENT THROUGH COOPERATIVE MILK PRODUCERS SOCIETIES

F.K. Wadia

Dairy development through cooperative milk producers societies started with the registration of the Kaira District Cooperative Milk Producers Union Ltd. Anand (Gujarat) in 1946. Its success triggered the formation of other district milk producers societies in Gujarat and in 1974 the Gujarat Milk Marketing Federation. The Operation Flood programme commencing in the seventies, and setting up of the National Dairy Development Board helped spread dairy development through milk producers societies to other States. By March 1990, there were over 60 thousand cooperative milk producers societies with 7 million farmer members supplying milk to the urban areas.

Background

The formation of cooperatives for the marketing and sale of milk of individual farmers/producers was initiated in the early 1900s with the active assistance of the Cooperative Departments in the various Provinces. Their main purpose was to supply adequate quantities of milk to the urban areas viz., towns and cities. The earliest formation of such cooperatives was undertaken in Bengal by the Cooperative Department in 1917 to supply milk to Calcutta city. The first society to be organised was at village Dadpur; this was followed by a number of other village societies which led to the registration of the Calcutta Cooperative Milk Societies Union Ltd. in 1919. By 1947, the Union had affiliated to it 139 primary societies and the number of individual members exceeded 9,700. The nearest society was situated about 19 kms from Calcutta and the farthest at a distance of 77 kms. Most societies were organised in villages which were at convenient distances from the railway stations on the East Indian and Martin Light Railways. Each village had milkers and carriers of milk paid by the Union. The milk was transported by the carriers to 18 assembling points located near Railway stations. On arrival at Calcutta, the milk was taken by the Union's trucks to its dairy for further processing. In the village, at the assembling centres, and even at the Union's dairy at Calcutta, the quality of milk was tested by lactometers. A certain number of fat content tests were also regularly performed at the dairy at Calcutta.

The Madras Cooperative Milk Supply Union Ltd was set up on more or less similar lines in 1927. By 1947, the Union had 87 societies affiliated to it, situated on the trunk roads, the farthest being about 60 kms from the dairy depot in Madras. In Uttar Pradesh, central milk unions were set up in Agra, Allahabad, Benaras, Kanpur, Lucknow, Bareilly, Dehra Dun, Meerut, Moradabad and Nainital. Each Union was expected to set up collection depots on the roads leading out from the towns and so placed that the village societies attached to each depot were within a distance of 8 kms. About 20 registered cooperative societies were attached to each depot. Milk was collected in the presence of the secretary of the society and a preliminary specific gravity test was made. It was then sent to the collection depots by cycles or as head loads. By 1947, there were 28 milk Unions registered in different parts of the country.

Apparently, there were no milk co-operatives or unions supplying milk to Bombay. Milk supplies to the city was mainly by private milkmen who had set up stables in the city or by traders who supplied the milk collected from the hinterland around the city. In the late thirties, the Bombay municipality tried to organize the milk supply but could not find a satisfactory solution. In 1942, the Government of (then) Bombay Province took some short term measures to solve the problem of acute shortage of milk in Bombay city. Milk was purchased from private agents from Kaira district including a certain quantity from Polson Ltd., a private enterprise located at Anand, the headquarters of Kaira district.

In 1945, the Milk Sub-Committee appointed by the Policy Committee on Agriculture, Forestry, and Fisheries recommended, among other measures for collection and supply of milk to towns with inadequate supply of milk, setting up suitable organisations to be worked preferably on cooperative lines. "The organisation should aim

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at:- (a) Organising producers in selected areas or villages; (b) Collecting milk at suitable centres and its transportation in suitable lorries (to be provided for the purpose) to a central processing centre or dairy; (c) Locating the central processing centre or dairy in the town or consuming areas and providing it with facilities for the pasteurisation and storage of milk in a cold store; and (d) Providing distribution depots from where the pasteurised milk of a guaranteed quality can be sold to consumers at a reasonable price" [Datar Singh, 1945, p. 2].

For a really satisfactory solution of the urban milk supply problem, the Sub-Committee recommended (a) transfer of milch stock from non-essential to essential areas for milk production, (b) utilizing *Gowshalas*, (c) stopping premature slaughter of useful animals, (d) weaning and artificial feeding of calves, (e) supply of adequate quantities of cattle-feed, (f) strict quality control, and (g) replacing the numerous agencies concerned in the distribution of milk by a few selected agencies (even to the extent of granting a monopoly); and constitution of a Milk Control Board in each town for safeguarding the interests of consumers, producers, and distributors and with powers to control the purchase and sale prices. The Sub-Committee also envisaged the establishment of large dairy farms in the neighbourhood of towns through Government agency or private enterprise. The farms were to be stocked with milch animals transferred from city stables or from areas where they were plentiful.

Based on the recommendations of the Sub-Committee and also of a Committee set up by itself, the Government of Bombay drew up a Bombay Milk Scheme Plan in 1945. The salient features of the Plan were (i) establishment of the requisite number of dairy farms at various distances from the city and suburbs in the form of colonies; (b) removal of milch cattle in the city and suburbs to these dairy farms; (c) processing of milk at central dairies and its rapid transport to the city; (d) import of milk from surplus rural areas, including arrangements for collection, processing, and transport; (e) strict inspection over production of milk and over its handling at all stages; (f) preparation and sale of 'toned' milk; (g) establishment of an organization for distribution of milk; (h) construction of cold storages, balancing stations and milk depots in the city; (i) enactment and enforcement of stringent laws for punishing producers and roundsmen who adulterated milk; (j) fixing a fair price for producers as well as consumers; and (k) the establishment of a Statutory Authority to regulate and control production, distribution, prices, etc. The Plan envisaged the setting up of a model Government dairy at Aarey village and the building of colonies for the milch animals to be moved from the city. In addition to the milk available from Aarey, it was expected that Kaira district would supply about 45,000 kgs of milk per day for distribution in Bombay city. The Bombay Milk Scheme Plan commenced in early 1946.

With the introduction of the Bombay Milk Scheme, Polson Ltd. was awarded monopoly rights for the procurement of milk in Kaira district and its pasteurization and supply to the Bombay Milk Scheme. Thus, milk was transported daily from Anand to Bombay 427 kms away by the Polsons. "The arrangement was highly satisfactory to all concerned - except the farmers . The Government found it profitable; Polsons kept a good margin; and the private traders took the biggest cut. No one had taken the trouble to fix the price of milk to be paid to the producers" [Amul, 1989, p. 1].

The first simmerings of discontent on the part of farmers for the price received by them for their milk had started way back in 1942 in Kaira district. A deputation of farmers had met Sardar Vallabhai Patel who advised them to form farmers' cooperatives for the sale of their milk. With the monopoly given by the Government of Bombay to Polsons for the purchase, chilling and supply of milk to Bombay, the discontent among the farmers multiplied. "Sardar Patel reiterated his advice that" the farmers "should market their milk through a cooperative of their own. This cooperative should have its own processing plant. ... the farmers should demand permission to set up such a cooperative; and if this" was "rejected they should refuse to sell milk to the middle men" [Amul 1989, p. 2]. In January 1946, a meeting of milk farmers was held at Samarkha village when it was resolved that milk producers' cooperative

societies should be organised in each village of Kaira district to collect milk from the producers. The cooperative societies would federate into a District Union which would own milk processing facility. The Government of Bombay should undertake to buy the milk from the Union. If the Government of Bombay did not agree, the farmers in Kaira district would refuse to sell milk to the traders/Polsons. The State Government refused to agree and the farmers called a 'milk strike', which lasted for fifteen days, before the Milk Commissioner of Bombay accepted the farmers' demand and agreed to buy specific quantities of milk for Bombay city from the Union. The monopoly rights of Polsons were rescinded.

Kaira District Cooperative Milk Producers Union Ltd, Anand

The first village cooperative of milk producers was formed in October 1946 in village Hadgud followed by Gopalpura village in the same month. The Kaira District Cooperative Milk Producers Union Ltd, Anand, was registered in December, 1946. Starting with a modest Union of eight societies in 1947-48 with 432 member-farmers, the Union had 890 societies in its fold in 1987-88 with 4.23 lakh farmer-members. Its sales of milk and milk products increased from Rs 26,500 in 1947-48 to Rs 161.46 crore in 1987-88, while the quantum of milk collected annually rose from 3.45 tonnes in 1947-48 to 21.29 thousand tonnes in 1987-88.

In April 1947, the Union procured (first on lease, later purchased) the Creamery at Anand from the Government of India. Extensive repairs had to be undertaken on the building and machinery at the Creamery which had remained closed since 1944. The Government of Bombay assisted the Union by providing a generator, an ammonia compressor, and an electric motor. The Creamery commenced pasteurization in June 1948 when it was able to handle about 450 kgs of milk for supply to the Bombay Milk Scheme. By December 1948, the Creamery was handling about 50,000 kgs of milk daily.

The Union's relationship with the Bombay Milk Scheme, in the first decade after its inception, was to supply as much milk as possible to Bombay. Between 1946 and 1952, the Union's policy was directed towards obtaining monopoly rights for the sale of milk to the Bombay Milk Scheme from the Anand area. It succeeded in achieving its purpose after the Government of Bombay cancelled the contract with Anand Milk Products Ltd (a private agency) in January 1951, with Polson Model Dairy in January 1952, and handed over the entire business of supply of milk from Kaira district to the Union. However, the Union had to contend with the milk obtainable in the Aarey Milk Colony from which the Bombay Milk Scheme was committed to purchase all the milk produced so that during the flush winter months, the Bombay Milk Scheme would not take all the milk supplied by the Union. Besides, the Government of Bombay were reconstituting milk from skimmed milk powder received under PL480 from USA which worked out much cheaper than purchases from the Kaira District Milk Producers' Union. Thus, whereas the Government of Bombay had agreed to accept about 45,000 kgs of milk daily from the Union, for its Bombay Milk Scheme, the offtake came down during the flush season to around 25,000 kgs per day by 1956. The surplus milk posed difficulties to the Union and it had to cut down purchases from its member Societies. The Union therefore decided to set up a new dairy at Anand to process the surplus milk into products like butter and milk powder. It coined the phrase, AMUL for its products meaning priceless, also short for Kaira Milk Producers Union Ltd, Anand. The new dairy was built at an overall cost of Rs 40 lakh funded as follows (Table 1).

TABLE 1. COST OF ANAND DAIRY PROJECT, 1955

(Rs lakh)

1. Union's own funds	15.00
2. Government of Bombay:	
Loan	10.00
Grant	4.40
3. Dairy Equipment by UNICEF*	8.00
4. Government of New Zealand under Colombo Plan :	
Gift	1.30
Interest Free Loan	1.30
TOTAL	40.00

* In lieu of the equipment, free milk worth Rs. 12.00 lakh to be distributed to children and expectant mothers in Kaira District.

Source: *Kaira District Cooperative Milk Producers Union Ltd*, Anand, Oct 1955, p. 16.

The new dairy was inaugurated in October 1955. It had a capacity to pasteurize about 1.36 lakh kgs of milk daily, and produce 4,500 kgs of butter and ghee, 5,600 kgs of milk powder and 500 kgs of casein per day. Arrangements were also made to manufacture condensed milk, sterilized cream, baby foods, and lactose. By this time, the Union comprised 64 milk producers' societies with a membership of 22,828 farmers and a quantity of about 0.3 lakh kgs of milk was collected daily. With the inauguration of the new dairy, the number of societies increased rapidly; by 1960-61, there were 195 milk producers societies with a membership of 40,500 farmers and the daily supply of milk to the Union averaged at around 0.65 lakh kgs.

In 1958, the dairy was expanded to manufacture sweetened condensed milk. Two years later, a new wing was added for the manufacture of 2,540 tonnes of roller-dried baby food, based on a formula developed with the assistance of the Central Food Technological Research Institute, Mysore, and 610 tonnes of cheese per annum. In 1964, a plant for the manufacture of balanced cattle feed was set up with assistance from OXFAM under the Freedom from Hunger Campaign. A new dairy capable of producing about 40 tonnes of milk powder and 20 tonnes of butter per day was completed by 1965 primarily to meet the requirements of the Defence Services. As a result, the dairy complex could handle 5 lakh litres of milk every day. In 1974, the capacity was further expanded to 7.50 lakh litres per day. A plant to manufacture high protein weaning food, chocolate and malted food was set up in the same year, about eight kilometres from Anand. In its expansion programmes, the Union continued to obtain technical assistance through various international agencies (Table 2).

TABLE 2. TECHNICAL ASSISTANCE RECEIVED BY THE UNION

Year	Amount (Rs.)		Agency	Project	Description
	Grant	Loan			
1956-57	1,57,478	1,57,477	New Zealand under Colombo Plan	Dairy Plant	Casein Plant, Milk Storage Tanks, Butter Packing Machines Vacreator with Pumps and Motors.
1956-57 to 1959-60	-	9,41,690	UNICEF	Dairy Plant	Machinery for Powder Plant.*
1961-62	49,728	-	TCM, USA	Dairy Plant	Dairy Machinery.
1963-64	-	33,152	TCM,USA	Chilling Centre at Villages	Chilling Centre Equipment.
1964-65	12,03,792	-	OXFAM	Cattle Feed Factory at Kanjari	Plant Equipment
1964-65	10,22,400	-	WFP	-do-	Maize rod. for Manufacture of Cattle Feed.
1965-66	31,78,847	-	WFP	-do-	-do-
1966-67	18,78,250	-	WFP	-do-	-do-
1969-70	20,93,347	-	US. AID	High Protein food factory, Mogar	Raw Material for Manufacture of Weaning food.
1969-70	-	44,58,163	UNICEF	-do-	Machinery for Manufacture of Weaning Food.*

* Against Matching Commitment.
Source: Mascarenhas. R.C., 1988; *A Strategy for Rural Development-Dairy Cooperatives in India*, Sage Publications, New Delhi, p. 90.

The Union runs an artificial insemination centre about fifteen kms from Anand with 104 Surti buffalo breeding bulls of high pedigree. Sub-centres are maintained by 779 societies out of which 353 societies have frozen semen utilisation centres. A cross-breeding programme for cows was launched in 1975. Upto 1984, there were about 9,200 cross-bred cows/heifers distributed in about 300 villages in the district. The Union runs 18 mobile veterinary dispensaries, fully equipped with qualified staff. A twenty-four hour Emergency Service is also available. First-aid

veterinary centres are managed by 877 societies. Nearly 5 lakh cases are treated annually.

The Bombay Milk Scheme earned a substantial profit on its sale of milk, received from Kaira Union, in Bombay city. The Union asked for a share in this profit. Accordingly, from 1950 to 1960 (when the State was bifurcated into Gujarat and Maharashtra), the Government of Bombay sanctioned an annual grant of Rs 3 lakh to the Union. The grant was to be utilised for dairy development activities in Kaira district. The activities undertaken by the Union during the decade included (a) the expansion of the artificial insemination programmes; fresh semen was carried to the villages on trucks that collected milk. Each society had a trained officer to administer the semen to buffaloes; (b) mobile veterinary assistance; (c) cattle shed construction with cement floors; (d) Construction of silos for storage of cattle feed; (e) installation of diesel water pumps for irrigating green fodder and watering the buffaloes; (f) provision of milk testing equipment to the societies for fat content; (g) award of prizes for the best managed village societies; (h) construction of centralized sheds in villages for milking cows and buffaloes; (i) grant of subsidies to village societies for the first three years of operation; (j) construction of buildings for village societies; and (k) construction of manure pits in the villages. Roads were also constructed to facilitate the movement of milk collection trucks to the village milk producers societies, popularly known as the 'milk routes'.

In addition to activities listed above, the Kaira Union set up in the sixties, the Amul Research and Development Association (ARDA) for providing financial assistance to the village societies for various schemes and input programmes, such as cattle insurance, cattle standings, milk collection centres, and artificial insemination activities. ARDA propagates food care and management of calves and pregnant buffaloes. It assists in the 'Gauchar' Land Development Programmes in the villages for increase in green fodder production through cultivation of hybrid napier seeds.

The two persons responsible for the development of Kaira Union and its ancillary activities were the founder-chairman Shri Tribhuvandas Patel and Dr. V. Kurian, who was its Chief Executive in the initial years (1950-73). Shri Tribhuvandas Patel retired as chairman in July 1973 and, on that occasion, the Kheda (Kaira) district farmers presented him a sum of Rs 6.50 lakh which he donated for providing health care facilities for the villagers at their door step especially for the mothers and infants in Kheda villages. Accordingly, the Tribhuvandas Foundation was registered as a Charitable Trust under the Public Trust Act on July 29, 1975. The objectives of the Foundation were "to enable all participating villages to build on to their cooperative structure, the provision of services which will promote the development of infants to their fullest potential, including all under-fives in the rural area covered ... and, to this end, to design a programme which will achieve these objectives in the country's milk sheds in other areas, where the producers have genuine cooperatives" [Tribhuvandas Foundation, 1990, p. 4]. The activities of the Foundation since 1980, when it commenced its operations, include training of village health workers, immunisation of mothers and children, tuberculosis control, nutrition rehabilitation, family planning, extension services, training in weaving and handicrafts to village women, setting up of balvadis, rural sanitation, gobar gas plants, and development of fisheries in village ponds.

The village milk producers societies consist of members who own milch cattle within the village jurisdiction (including surrounding hamlets) and supply milk to the cooperative society on a regular basis. The milk producers become members of "the society by paying an entrance fee of Re 1, and purchasing at least one share of Rs 10 in the cooperative. The cooperative should consist of a minimum of 30-50 members so as to enable it to commence with a share capital of Rs 300 - Rs 500. Members who did not "supply at least 500 litres of milk in a year, or for 180 days during a year," lost their "voting rights and eligibility to attain any position within the cooperative". The members of the society elect a managing committee of nine members for overseeing the day-to-day

affairs of the society. "The managing committee sets the village cooperative's policies and appoints its staff including a Secretary, a Milk Collector, a Fat Tester, a Clerk, an Inseminator, an Accountant, and a Helper to perform the society's work/administration, depending upon the size of business" [NDDB, 1985, p. 11]. Each society has an honorary auditor for internal audit, in addition to the regular statutory audit carried out annually. A uniform system of accounting is followed by all the societies, which is simplified for use by the local staff with limited education. The members of the staff who manage the society are trained in first aid and in artificial insemination.

The village milk producers society's income is derived from "(a) commission paid by the Union for procurement of milk; (b) the margin accrued from the price differential paid to farmers based on fat content calculated on the basis of quantity and the payment received from the Union on the basis of weight; (c) local sales; and (d) the sale of milk collected as samples for testing." The income of the society after meeting all expenses is allocated on the basis of 25 per cent for the reserve fund of the society and 12 per cent dividend to share holders. "The balance is further allocated accordingly - 65 per cent as bonus to the members in accordance with the amount of milk supplied by them to the society; 10 per cent to be set aside for the cattle development fund;" 10 per cent as bonus to staff; 10 per cent to be set aside for charity; 5 per cent for cooperative propaganda fund;" and any amount left over to be credited to the reserve fund [Mascarenhas, 1988, Pp. 69-70].

The Kaira District Cooperative Milk Producers' Union represents all the village societies in the district which are members of the Union. The Union is responsible for the procurement, processing, and marketing of milk and providing technical services and inputs like weekly and emergency veterinary services, fodder seeds and equipment, cattle feed, and training of staff. The Union arranges for contracting out 'milk routes' for collecting milk and delivering it at the dairy plant for processing. The Union owns and operates a dairy plant, cattle feed plant, fodder and bull mother farms, semen collection station, and a centre for animal husbandry activities. In addition, the Union carries out research, development and other promotional activities for the overall benefit of farmers. The Union provides inputs such as compounded cattle-feed, fodder seeds and various veterinary services including round - the - clock emergency visits by veterinary doctors for treatment of sick animals. The total cost of these programmes is included in the milk price structure.

The Kaira Union distributes among the member-societies, dividends on their shares and bonus on the basis of the quantity of milk supplied by them during the year. The Union is under continuous and concurrent audit to maintain financial propriety. Of the net profit earned by the Union, 25 per cent is carried to its reserve fund, a small contribution is made to the education fund as required by the State Cooperative Societies Act and a sum not exceeding 12 per cent per annum is paid to member societies as dividend on their paid-up share capital. The remaining profits are distributed as 80 per cent towards bonus to members in proportion to the milk supplied, 10 per cent towards charity, 5 per cent towards cooperative propaganda, 3 per cent towards research in the dairy industry, and 2 per cent towards dividend equalization.

The Union is controlled by a Board of Directors consisting of 21 members, of which twelve are elected from among the Chairmen of the village societies. The remaining members comprise the Union's Managing Director as member-secretary, one or two representatives of the financing institutions, a nominee of the State Cooperative Department, a dairy expert, a representative of the Milk Marketing Federation, Government nominees, and a nominee of individual shareholders. These latter members are not eligible to contest for the post of Chairman who is elected by ballot. One-third of the elected Board members retire every year by rotation so that each member functions for three years. This ensures continuity of management. The general policy of the Union is framed by the Board in which is also vested the powers regarding management of the organization.

The Kaira Union provides training facilities for (a) secretaries of village cooperatives on such

subjects as the Cooperative Societies Act, secretarial practices, accounts keeping, cooperative management, etc; (b) employees of the cooperatives in techniques of artificial insemination; (c) a course in first aid veterinary work for selected personnel who are posted back to their villages with first-aid kits; (d) a course on milk tester to test milk for fat and solids-not-fat, for the village cooperatives; and (e) a training programme for prospective supervisors on the operation and management of local cooperatives.

By the close of 1950s, the Kaira District Union, with its AMUL products, had become one of the largest farmers organisation in the country with substantial gains to the farmers and to the Union. The growth of the Union triggered organisation of dairy cooperatives on the same pattern in neighbouring districts in Gujarat. In order to avoid competition and sell their products under one brand name, the cooperatives in six districts, viz., Kaira, Sabarkantha, Banaskantha, Mehsana, Baroda, and Surat, combined in 1974 to form a third tier viz; the Gujarat Milk Marketing Federation. The Federation is responsible for evolving and implementing policies on cooperative marketing of liquid milk and milk products, cooperative provision of joint services (artificial insemination, breeding, etc.) and cooperative marketing of technical inputs to members. District Unions could become members of the Federation by subscribing to one share of at least Rs 20,000. In 1983, the district unions of Bharuch, Panchmahals, Rajkot, and Valsad joined the Federation as nominal members. In the same year, the Gujarat Dairy Development Corporation - comprising the district Unions of Ahmedabad, Gandhinagar, Kutch, Surendranagar, Bhavnagar, and Junagadh - became an associate member of the Federation. The nominal and associate members do not have voting rights.

The Federation's Board consists of the elected chairmen of all the member-unions and the Federation's Managing Director. Other members are the representative of the Registrar of Cooperative Societies, representative of the financing agency, a nominee of the National Dairy Development Board (NDDB), and one nominee of the State Government (Dairy Development Department). Each member has voting rights. The members elect a chairman of the Board. The Board evolves the Federation's policies on all its functions. Members' votes are weighted by the amount of milk procured by their respective unions in the previous year - and profit distribution is also done on the same basis.

The Federation's Board is advised by its Programming Committee, which is composed of each member union's chief executive, the Federation's Chief Quality Control officer, and one or more non-voting co-opted technical representatives of NDDB/IDC. The Federation's Managing Director is the Committee's Chairman, and the General Manager, its Secretary. The Managing Committee meets once every month and is also responsible for day-to-day implementation of the Board's policies and plans.

Of the total profit earned by the Federation, 25 per cent goes to its reserve fund. The member-unions are paid dividend not exceeding 12 per cent on the paid-up share capital. After making small contributions to education and other activities as required by the Cooperative Societies Act, the balance is distributed as bonus to member unions and/or taken to general fund and/or utilized for research and development as decided by the General Meeting.

This cooperative structure, called the Anand Pattern, provided the basis of dairy development in the country since 1965 [NDDB, 1985, p. 14]. Progress of the Kaira District Cooperative Milk Producers Union is summarised in Table 3.

Recommendations in the Second and Third Five Years Plans

The advantages of village cooperative milk producers societies as against State run milk colonies near cities, came to be recognised as early as in the Second Plan period (1956-61). The Plan document stated that "it is important to devise arrangements which will ensure the supply of adequate quantities of milk to urban areas (a) under conditions in which quality is guaranteed, and (b) at prices which are remunerative to the milk producer and fair to the consumer. With these objectives in view during the Second Five Year Plan, it is proposed to organise 36 milk urban supply schemes, 12 cooperative creameries, and

7 milk drying plants. The latter will be located in rural areas and will produce butter, ghee and skimmed milk powder. The general policy is that milk producers' cooperatives should be organised in villages to supply milk to the urban milk supply schemes, creameries and milk drying plants. The milk producers should be given assistance such as the payment of a remunerative price, the provision of bulls or artificial insemination, technical advice, facilities for improving production and storage of fodder and the provision of milking sheds" [Planning Commission, 1956, Pp. 286-287].

TABLE 3. PROGRESS OF THE KAIRA DISTRICT COOPERATIVE MILK PRODUCERS UNION LTD., ANAND

Year ending March	Number of Societies	Number of Farmer Members of Societies	Share Capital of the Union (Rs. lakh)	Quantity of Milk Annually Collected from Societies (tonnes)	Annual sales (Rs lakh)
(1)	(2)	(3)	(4)	(5)	(6)
1947-48*	8	432	0.41	3.45	0.27
1948-49*	13	924	0.45	113.40	7.90
1949-50*	27	1,995	0.52	272.16	17.22
1950-51*	33	3,873	0.72	498.95	33.95
1951-52*	58	8,992	1.20	907.18	61.15
1952-53*	62	11,307	1.44	1,238.31	82.59
1953-54@	64	14,741	1.95	1,084.09	67.99
1954-55	64	18,983	2.28	1,172.26	73.15
1955-56	64	22,828	3.17	1,113.64	74.36
1956-57[1]	107	26,759	3.17	1,416.80	89.47
1957-58	130	29,003	3.94	2,115.64	134.14
1958-59	138	33,068	4.74	1,755.78	211.65
1959-60	167	40,181	5.67	2,292.70	182.16
1960-61	195	40,500	7.41	2,391.50	198.53
1961-62[2]	219	46,400	7.49	3,539.84	315.24
1962-63	254	58,500	8.19	5,041.78	456.24
1963-64	378	65,000	10.14	6,230.20	603.62
1964-65	421	85,000	12.57	6,064.41	627.26
1965-66[3]	581	1,10,000	13.70	6,590.50	922.19
1966-67	567	1,20,000	16.51	7,160.37	1,176.42
1967-68	592	1,35,000	18.83	8,059.91	1,483.77
1968-69	600	1,48,000	23.35	11,315.62	2,483.77
1969-70	610	1,75,000	28.38	12,388.43	2,719.38
1970-71	706	1,80,000	34.72	11,822.53	2,739.42
1971-72	744	2,15,000	38.57	13,322.25	3,360.40
1972-73	783	2,25,000	41.48	14,781.11	3,922.39
1973-74	794	2,35,000	43.18	11,194.81	3,661.78
1974-75[4]	844	2,45,000	44.18	13,095.23	4,464.63
1975-76	829	2,50,000	52.93	12,904.12	4,272.56
1976-77	831	2,55,000	68.59	12,701.70	4,420.02
1977-78	831	2,75,000	68.98	14,119.77	5,355.29
1978-79	856	2,95,000	68.98	15,926.62	5,811.33
1979-80	895	3,08,000	79.74	16,937.65	6,642.42
1980-81	895	3,27,000	89.62	16,957.70	7,529.97
1981-82	894	3,39,000	89.64	16,001.84	7,856.65
1982-83	895	3,52,000	109.70	18,382.01	9,536.08
1983-84	880	3,59,000	126.01	18,202.28	10,304.82
1984-85	870	3,59,000	141.16	19,322.02	12,247.96
1985-86	872	3,65,000	156.53	22,726.17	13,341.92
1986-87	877	4,07,000	171.30	21,376.93	15,250.11
1987-88	890	4,23,000	186.49	21,293.37	16,145.88

* July-June @ July-March
1. Construction of new dairy
2. Expansion of new dairy for baby food and cheese
3. Construction of second dairy
4. Expansion of Dairy's milk handling capacity to 7.50 lakh litres per day
Source: *The Amul Story - A Saga of Cooperative Effort* (1986 and 1989)
The Kaira District Cooperative Milk Producers' Union Limited, Anand, Gujarat.

The Third Plan (1961-66) document reiterated this policy more firmly: "The policy to be pursued in regard to dairying is to develop dairy projects with greater emphasis on milk production in the rural areas linked up with plans for marketing of surplus milk in the urban centres. The supply and collection of milk will be undertaken by a network of producers' cooperatives in the villages. The processing and distribution of milk and manufacture of milk products will be organised through plants operated, as far as possible, on cooperative lines. It is expected that reliance on cooperative organisations would help in enlisting public participation and add to the pool of funds available under the Plan for the activity" [Planning Commission, 1962, Pp. 354-355].

The Third Plan document had also referred to the policy for the removal of cattle from major cities and their colonization on the outskirts of the cities: "This method of colonisation has involved considerable capital outlay and it is, therefore, considered desirable to limit the responsibility of the State to the provision of land with essential services e.g., roads, water supply, and electricity. The developed areas are to be divided into plots and leased out on reasonable terms to displaced cattle owners. Allottees will have to construct necessary cattle sheds and other buildings according to approved plan at their own cost. Facilities for the marketing of milk could be provided. Thus, the removal of milch animals from cities and their rehabilitation in colonies will be regarded primarily as a health-cum-slum clearance measure, and the main responsibility for it would devolve on city municipalities and corporations" [Planning Commission, 1962, Pp. 356-357].

Later, in January 1964, the Working Group appointed for the formulation of proposals for the Fourth Plan on dairy development recommended that dairying should be organised as a rural industry on cooperative lines. Sufficient quantity of milk should be retained in the villages for consumption and the surplus supplied to urban consuming centres and for manufacture of milk products.

National Dairy Development Board

In October 1964, the late Prime Minister, Shri Lal Bahadur Shastri, visited Anand to inaugurate the new cattle feed plant of the Kaira District Cooperative Milk Producer's Union. Impressed by the working of the Union and particularly the village societies, the Prime Minister proposed the setting up of a central institution to assist milk producers in other parts of the country to organise their own dairy cooperatives. The main objectives of the central institution were (a) replication of the Anand pattern of dairy cooperatives and (b) making available multi-disciplinary professional dairy expertise to dairies in the public, private, and the cooperative sectors. The Ministry of Agriculture proposed that as agriculture (including dairying) was a State subject, a Dairy Development Council be set up comprising officers of the Central and State Governments involved in dairy development. The Council could meet periodically to decide on aspects of dairying and benefit by exchange of information, etc. An alternative proposal was to form a National Dairy Development Board to be registered as a Charitable Trust under the aegis of the Government of India. It was accepted.

Accordingly, in 1965, the National Dairy Development Board (NDDB) was registered under the Societies Registration Act, and the Charitable Trust Act and the Public Trust Act, with its headquarters at Anand. Dr. V. Kurian was appointed the chairman. Seven members were appointed to the Board- three senior central government officials concerned with dairy development and related research, two State Government (West Bengal and Maharashtra, in the first instance) officers responsible for their State's dairy development, the Assistant General Manager and Manager (Production and Planning) of the Anand Co-operative; and one academician who specialised in management in the agriculture and food sector.

The objects of the Board were: "(a-i) Promotion of dairy science and practice and diffusion of technical know-how. (a-ii) Research in the field of dairying and animal husbandry. (a-iii) Promotion of and research and development in activities relating to production and marketing of

agriculture and food products and extension in the field of agriculture, animal husbandry, fisheries and other food products and to take all necessary steps in this direction by sponsoring, setting up, acquiring, constructing or installing any plant or works necessary for the purpose. (b) To provide consultant's service to any Dairy. (c) To advise the Government of India and State Government Corporation(s) and Local Body(s) in setting up Dairies, Milk Product Factories, Dairy Extension, Rural Milk Creameries, Cattle Feed Compounding Factories, and other allied Plants or Industries ..... " [NDDB, 1965, Pp. 1-2].

The NDDB was charged with the major objective of providing on a non-profit basis any technical services which implementing agencies might require in the building up of their dairy projects. These services were designed to help build up rural milk producers' cooperatives based on the lines of the Anand Pattern. The NDDB took the better part of the years, 1966-68, in building up its technical expertise and infrastructure at Anand, with the help of the Kaira Union. By 1968, the NDDB's services included design, turn-key erection, and commissioning of dairy and cattle-feed compounding plants; manpower development programmes, feasibility studies; market surveys; bulk purchases of dairy equipment; and bulk import of milk powder for it's clients and under Government license. In order to be independent of finance from the Government of India, the NDDB charged a consultation fee to its clients.

Operation Flood I

In May 1968, the NDDB drew the attention of the Ministry of Food and Agriculture, Government of India, to the possible availability of free dairy products in substantial quantities from the European Economic Community (EEC) through the World Food Programme (WFP). This could be used to move the dairy industry in India towards self reliance by adopting the following measures: (1) obtaining control of milk production, processing, and distribution in the key centres of demand viz., Bombay, Calcutta, Madras, and Delhi; (ii) these markets could be flooded with the milk obtained through WFP which would be of lower cost and better quality by which vulnerable deprived groups could also be benefited; (iii) the supply of milk at a lower price would discourage city milk producers from keeping cattle in the city; the movement of high yielding milch cattle to rural areas would make them better milk yielders because of better husbandry; and (iv) the funds generated by the sale of the donated milk products could be used to (a) help city producers to settle in a rural areas; (b) expand milk production and procurement in the city's milk shed areas; (c) complete the city's milk processing and distribution facilities; so that (d) by the end of the project, the dairy could supply the city's demand for milk by procurement from its milk shed area.

A project proposal was drawn up by the NDDB and considered by the Government of India and the participating States over a period of more than a year before submitting it to the WFP. The project, Operation Flood I (OF-I), was submitted in October 1969 for approval at the Sixteenth Session of the WFP Inter Governmental Committee at Rome (October 13-18, 1969). The project was for a duration of five years; it aimed at the development of the dairy industry in Bombay, Calcutta, Delhi, and Madras and in the rural areas which supplied milk to those cities. This involved the following main lines of action: (i) major increases in the capacity and throughput of dairy processing facilities; (ii) competitive transfer of the bulk of the urban markets from the traditional supplies of raw milk to the modern dairies; (iii) resettlement in rural areas of cattle in the cities which were serving a large part of the city markets; (iv) development of basic transportation and storage network to facilitate regional and seasonal balancing of milk supply and demand; (v) development of milk procurement systems in appropriate rural areas in order to provide for raw milk a channel which was more remunerative than the traditional channel; and (vi) improvement in standards of dairy farming by programmes of animal breeding, veterinary services, feedstuff supplies, and management thereby increasing milk yields per animal [WFP, 1969, Pp. 1-2].

The benefits likely to accrue on completion of the project were enumerated as follows: (a)

availability of wholesome milk at stable and reasonable prices to the bulk of city consumers, with major effects on protein intake, including to vulnerable groups, namely pre-school children, nursing and expectant mothers, etc.; (b) improved productivity of dairy farming in extensive rural areas bringing major increases in agricultural output and incomes with special emphasis on improvement of the income of small farmers and landless people; (c) removal of dairy cattle from the cities where they represent growing problem in terms of genetic waste, social cost, and public health; and (d) establishment of a broad basis for accelerated development of the national dairy industry in the post-project period [WFP, 1969, p. 2].

Even before the proposal was forwarded to the WFP, it was decided that as the NDDB was a charitable trust, it could not receive and sell the project's donated commodities. Therefore, the Government of India set up in February 1970 the Indian Dairy Corporation (IDC) under the Indian Companies Act, 1956, with headquarters at Baroda in Gujarat State. The IDC (on behalf of the Government of India) was responsible for receiving the project's (OF-I) donated commodities, testing their quality, storing them, transferring them to user dairies and receiving the dairies' payments, thus making it a finance-cum-promotion house. Its source of technical expertise and policy was to be the NDDB. The IDC was designated as the authority responsible for the implementation of Operation Flood. The proposal to the WFP envisaged the transfer to the IDC of certain quantities of dried skim milk and butter oil valued at international prices.

Thereafter, the IDC would supply these products to the public sector dairy schemes at about Rs 4.35 and Rs 9.57 per kg respectively of dried skim milk and butter oil. The guiding principle was to ensure that no undue preference was given to skimmed milk powder over the liquid milk procured from the rural areas so that the availability of skimmed milk powder neither depressed the price of liquid milk nor detracted from its use. This would also permit retailing at prices equivalent to those fixed by the milk schemes for milk containing 6 per cent fat and 9 per cent non-fat solids. On the basis of these prices, the proceeds generated through the transfer of WFP commodities to the milk plants accrued through the project life were to amount to approximately Rs. 954.00 million (Table 4).

TABLE 4. MILK PRODUCTS TO BE SUPPLIED FOR OPERATION FLOOD I

Year	Dried Skim Milk (000 tonnes)	Butter Oil (000 tonnes)	Value (million Rs)
1	10.50	3.50	79.52
2	29.75	10.00	226.11
3	38.50	13.00	293.18
4	30.60	10.20	231.70
5	16.65	5.30	123.68
Total	126.00	42.00	954.19 or say 954.00

Source: WFP - *Operation Flood - a Project Summary*, 1969, Pp. 4-5.

Government of India undertook to ensure that the total proceeds would be used for the purpose specified in the project, in addition to such funds as were allocated for the development of animal husbandry, dairy development, and fodder production sectors in the Draft Fourth Five Year Plan. The proceeds (Rs. 954 million) would be utilised as follows: (Table 5)

About 15 per cent of the expenditure, particularly for the purchase of dairy processing equipment was to require foreign exchange, as these were not being manufactured in India, e.g. bottling lines, homogenizers, plates for pasteurizers and coolers, operators, clarifiers and stainless steel.

Each of the four milk schemes covered in the project was based on a dominant urban nucleus, a number of milk production areas directly connected with that nucleus, other production areas indirectly connected with the nucleus through feeder balancing plants and finally, areas providing inputs, such as milch animals in the supply areas. Each urban milk scheme with its associated supply areas was to extend to more than a single State. Thus, the milk shed for the Bombay Milk Scheme extended to six districts in Gujarat and 9 districts in Maharashtra with feeder/balancing

plants to be situated in the districts of Mehsana, Sabarkantha and Kaira in Gujarat and Dhulia, Jalgaon, Pune, and Sangli in Maharashtra. Madras had its milk shed in five districts of Tamil Nadu and four districts of Andhra Pradesh with feeder/balancing plants in Krishna district (Andhra Pradesh) and Madurai and Salem districts (Tamil Nadu). The milk shed area for Calcutta comprised all the districts of West Bengal and eight districts of Bihar; feeder/balancing plants were to be situated in Mirzapur and Patna districts (Bihar) and Malda and Darjeeling districts (West Bengal). Delhi's milk shed was to stretch to districts in Punjab, Haryana, Rajasthan and Uttar Pradesh with feeder/balancing plants in Bikaner district (Rajasthan) and Ferozepur district (Punjab). The milk to these four cities was to be supplied by 'State milk grids' from the nuclei districts mentioned above.

TABLE 5. PROJECT CAPITAL EXPENDITURE BY ACTIVITY AND YEAR FOR OF-I

(Rs Million)

Action Item	Year of Operation					
	1	2	3	4	5	Total
1. Expansion of four cities' existing capacity to obtain a rapid increase in their distribution of liquid milk	16.6	2.5	--	--	--	19.1
2. Expansion of handling capacity by additions to existing handling facilities and erection of new urban liquid Milk Plants	17.5	52.5	52.5	17.5	--	140.0
3. Storage and long distance milk transport facilities	--	--	10.5	10.5	10.7	31.7
4. Milk Collection and Chilling Centres	3.4	10.9	22.0	21.8	4.7	62.8
5. Feeder/Balancing Dairies	8.3	22.2	53.7	58.8	4.0	147.0
6. Resettlement of city-kept cattle	14.0	35.0	35.0	35.0	35.0	154.0
7. Increasing milk production by provision of technical inputs	10.5	64.3	69.7	69.7	70.8	285.0
8. Development of Improved Milch Animals	--	--	9.9	14.7	15.4	40.0
9. Organisation of rural procurement	1.6	3.9	4.7	4.8	3.0	18.0
10. Project Planning, Implementation and Manpower Development	1.7	6.2	10.8	12.1	5.0	35.8
11. Miscellaneous	4.5	9.5	2.0	2.0	2.6	20.6
Total	78.1	207.0	270.8	246.9	151.2	954.0

Source: As in Table 4, Pp. 5-6.

The five year period of the project was divided into three phases. In the first phase (12-18 months), (a) the milk plants in the four cities were to be brought to full capacity with addition of supplementary equipment; (b) city-kept-cattle owners would be assisted to move to rural milk-shed areas; and (c) construction of first round expansion of milk processing facilities in each city would be taken up. In the second phase (upto end of third year), (a) the expanded milk processing facilities were to be utilised; (b) procurement of milk to be stepped up from milk shed areas/city-kept-cattle owners shifted to milk shed areas; (c) completion of any further milk processing facilities required in the cities; and (d) expansion of rural organisations to supplement local procurement from each city's milk shed areas. The third phase envisaged consolidation of new and expanded facilities for increasing milk production and procurement and phasing out of WFP commodities (Table 6).

TABLE 6. PHASING OF WFP MILK SUPPLIES

(lakh litres per day)

	pre-project	1st year	2nd year	3rd year	4th year	5th year	post project
Pre-Project Procurement	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Milk Obtained from WFP aid		3.00	8.50	11.00	8.75	4.75	
Increased Indigenous Procurement		0.50	1.00	4.25	8.75	12.75	17.50
	10.00	13.50	19.50	25.25	27.50	27.50	27.50

Source: As in Table 4, p. 8.

The capacities of the city milk plants, feeder dairies, and chilling centres in the four cities and their milk sheds, anticipated by the end of the five years period, were as in Table 7.

TABLE 7. ANTICIPATED CAPACITY OF MILK SUPPLY CENTRES

(Capacity: '000 litres)

City	Milk Plants				Feeder Dairies		Chilling Centres	
	Pre-Project		Post Project					
	No	Capacity	No	Capacity	No	Capacity	No	Capacity
Bombay	2	450	3-4	1,000	7	440	55	490
Calcutta	2	150	3-4	750	4	365	46	430
Delhi	1	270	2	700	3	440	45	380
Madras	1	50	2	300	3	235	27	204
Total	6	920	10-12	2,750	17	1,480	173	1,504

Source: As in Table 4, p. 10.

The organisation of milk collection at the village level was to be promoted largely in the form of producers' cooperative societies. In addition to official advice and guidance and some minor subsidies for staffing and equipment, members were to be given credit facilities for the purchase of livestock and certain inputs. Payment for milk was to be made on the basis of fat content so as to remove the danger of adulteration.

The project provided for technical inputs required for increased milk production, such as feed mills, extension, and animal health services, artificial insemination, improved breeding stock, irrigation equipment, fodder crop seeds, etc. Expenditure of the order of Rs 325 million was anticipated for the purpose.

The project proposal was approved by the WFP; the EEC's surplus commodities therefore formed indirectly the basis for Operation Flood I. An agreement was signed between the Government of India and the WFP in March 1970. Originally scheduled for five years, Operation Flood I was extended over a period of eleven years (up to March 1981), partly due to delays in the delivery of commodities and partly due to delays in implementation. The entire supplies agreed to by the WFP were received by the Indian Dairy Corporation only by June 30, 1981. The supplies of WFP commodities were not only irregular, but about 3,000 tonnes of skimmed milk powder and 4,620 tonnes of butter oil had to be rejected by the IDC for recombination purposes.

Consequent to the delays in the supply of commodities by WFP, there was a delay in the generation of funds and their utilisation for project implementation. The entire set of technical action to be taken up during Operation Flood I, depended on the realisation of funds through the sale of donated commodities to the city dairies of Bombay, Calcutta, Delhi and Madras. Renovation and expansion of the city dairies had to be undertaken prior to receipt of WFP commodities. These did not materialise, as equipment to be imported (e.g. homogenizers) took much longer than anticipated. In the absence of additional recombination facilities, the city dairies were unable to utilise the gifted milk powder and butter oil. Setting up of the Mother Dairies and their retail outlets in the four cities entailed many procedural hurdles. Progress of work pertaining to the organisation of village societies was hampered due to resistance to cooperative bye-laws,

delays in release of funds by concerned state authorities, lack of trained personnel, lengthy departmental procedures and passive resistance to change by those who had a vested interest in the continuation of the old social order.

Aspects of bye-laws for societies and unions, which encountered opposition, were (i) qualifications of the society members for contesting election to its managing committee (ii) representation on the general body of the union, (iii) composition of the Board of Directors and their retirement, (iv) appointment and dismissal of a General Manager and other staff, (v) continuous and concurrent auditing of the societies by the Cooperative Departments of the states, etc. Delays were experienced in (a) the appointment of officers for the procurement and input work of the unions, (b) identifying the implementing agency of the state and (c) channelising inputs to enhance milk production by the concerned state government.

As mentioned above, the OF-I project was completed in March 1981. The original anticipated expenditure of Rs 954 million was later revised to Rs 1,165 million (Table 8).

Some of the major achievements of the project by March 1981 are shown in Table 9.

TABLE - 8. ACTUAL EXPENDITURE ON OF-I (1970-81)

Action Items	(Rs million)
1. Expansion of the Four Cities Dairies' Capacity	45.49
2. Expansion of Handling Capacity by additions to existing handling facilities and erection of new urban liquid plants	254.10
3. Storage and Long Distance Milk Transport Facilities	29.39
4&5. Milk Collection, Chilling Centres and Feeder Balancing Milk Plants	449.44
6. Resettlement of City Kept Cattle and Buffaloes	0.88
7. Increasing Milk Production by Provision of Technical Inputs	239.99
8. Development of Improved Milch Animals	29.50
9. Organisation of Rural Procurement of Milk	32.80
10. Project Planning, Implementation and Manpower Development	32.86
11. Miscellaneous	51.01
Total	1,165.46

Source: *Operation Flood - A Reality,* Indian Dairy Corporation, Baroda, 1983, p. 27.

TABLE 9. ACHIEVEMENTS OF OPERATION FLOOD I UPTO MARCH 31, 1981

Area	Achievements
1. *Metropolitan City Dairies*	
(a) New plants (Nos.)	5 (4-6*)
(b) Capacity (000 litres per day)	3,500 (2,750*)
(c) Throughput (000 litres per day)	2,343 (2,750*)
2. *Storage and Transport*	
(a) Rail Tankers	50 (1,620 thousand litres capacity)
(b) Road Tankers	250 (3,250 thousand litres capacity)
(c) Warehouses	3 (one each in Delhi, Calcutta, Madras)
3. *Processing Facilities (Rural)*	
i a) Dairy Plants (Nos)	17
b) Capacity ('000 litres per day)	3,000 (1,480*)
ii Chilling Centres (Nos)	25 (173*)
4. *Cooperative Organisations*	
(a) Milksheds covered	27
(b) Village Cooperatives Formed	12,224
(c) Milk Producers Covered	1.5 million
(d) Milk Procured	2,196 thousand litres daily in March 1981
5. *Technical Inputs*	
(a) Cattle Feed Plants (Nos)	14 new (100 tonnes daily capacity each) 2 old expanded (800 tonnes daily capacity)
(b) Jersey Bull-Mother Farm	12 of which 8 with facility for freezing semen
(c) Frozen Semen Banks	11
(d) Village Cooperatives with Artificial Insemination Facility	3,300
(e) Number of Inseminations Performed	21,00,000 (buffaloes and cows)
(f) Animal Health Care Facility	8,039 villages, with 172 regular mobile veterinary clinics and 103 emergency mobile veterinary clinics.

* Indicates original targets
Source: *Anand Pattern and Operation Flood,* An overview, NDDB, Dec. 1985, Pp. 31-32.

The capacity and throughput achieved in the four metropolitan city dairies under OF-I is given in Table 10.

TABLE 10. CAPACITY AND THROUGHPUT OF METROPOLITAN CITY DAIRIES IN OF-I BY MARCH 1981

(000 litres)

City	Capacity		Throughput	
	Target	Achievement	Target	Achievement
Bombay	1,000	1,500	600	1,059
Calcutta	750	700	350	317
Delhi	700	975	350	737
Madras	300	325	100	230
TOTAL	2,750	3,500	1,400	2,343

Source: as in Table 9.

Reports of the National Commission on Agriculture, 1971-76.

While the OF-I Programme was still in its initial stages, the National Commission on Agriculture (NCA) submitted, in December, 1971, its Interim Report on 'Milk Production through Small and Marginal Farmers and Agricultural Labourers'. It pointed out that the gains of the Green Revolution "flowed towards progressive farmers, who also happened to be those with large holdings having irrigation facilities. Farmers with smaller holdings and poorer means" were by and large left out [NCA, 1971, p. 12]. The NCA referred to the experience of the Anand Milk Scheme where small farmers derived many benefits by taking to milk production as a subsidiary occupation. The Operation Flood Programme which was the largest dairy project under the Fourth Five Year Plan could play a leading role to bring under its ambit a large proportion of small and marginal farmers and agricultural labourers. All areas covered by the Operation Flood Project should identify and enrol invariably all the interested small and marginal farmers and suitable agricultural labourers in their programme of milk generation and procurement [NCA, 1971, p. 27].

In its final report, published in 1976, the NCA referred to the dairy programmes under OF-I. It said that "to develop dairying on proper lines, the organisation which collects milk should also bear the responsibility of channelising inputs for milk production enhancement. This situation does not exist except in case of cooperative dairies in Gujarat. Operation Flood Project adopts this approach in all its project areas on the model of successful Gujarat cooperative dairies. It is encouraging to note that other States are also gradually adopting this system" [NCA, 1976, p. 128].

In addition to the setting up of cooperative dairies, the NCA endorsed the programme of OF-I whereby chilling centres and feeder/balancing plants were being set up to conserve surplus milk during the flush season by conversion into skimmed milk powder or other products. According to the NCA, the 'feeder' function of the plant was confined to the despatch of chilled/pasteurised milk in bulk to the city distribution system, whereas the 'balancing' function was to supply the required quantity of milk to the city year round and conserve the remaining quantity of milk procured, in the form of milk products. "With the establishment of fully functional feeder/balancing plants of adequate size and in suitable locations within a State, it would be desirable to establish a State milk grid and with progressive development it should be possible to establish a national milk grid for the whole country" [NCA, 1976, Pp. 138-139]. For the proper functioning of the State milk grids, it was necessary to improve technology for the modern dairy system; it was "also necessary to develop the storage and long distance transportation facilities which" would "enable the State milk grids to be integrated efficiently into a national milk grid". OF-I was "to provide the basis of the national milk grid by linking four major cities and their hinterland milk-sheds in ten States; ..... The process of building up the national milk grid should, therefore, be expedited." ..... This could "best be done by the Central Government

charging Indian Dairy Corporation (IDC) with the responsibility of organising the orderly evolution of the national milk grid. .... IDC should handle the storage and transportation facilities required for the national milk grid so as to ensure distribution of nationally produced milk and milk products in a manner that promotes viability of the system as a whole and safeguards interests of the poor rural producers and urban consumers all over the country" [NCA, 1976, Pp. 140-141].

As regards milk supply to rural areas, the NCA "estimated that the per capita milk consumption in a given city is 50 per cent greater than that in the hinterland milk sheds of the city. The national objective of economic growth with social justice" implied "that urban-rural inequalities" were "to be reduced and the development of dairying must, therefore, be planned in a manner that would assist in the attainment of that objective. ..... In the Kaira District Cooperative Milk Producers' Union, all the village milk procurement societies are selling milk to the village consumers at cost price". Thus "while city milk supply scheme is being planned, arrangements should simultaneously be made for sale of milk in the concerned rural milkshed areas as well as by the dairy organisation by adopting a system similar to that of the Kaira District Cooperative Milk Producers' Union" [NCA, 1976, p. 148].

The NCA concluded that as dairy development programmes could best be organised by the cooperatives of the milk producers, the producers should first be organised into primary/village level cooperative societies. Persons not involved in milk production or those associated with private milk business should not be allowed membership of these societies. The primary milk producers' societies should be federated into a district level milk producers' union. While forming the primary societies it should be ensured that each village level cooperative became a viable economic entity. The primary societies should also provide the services and inputs such as artificial insemination service, veterinary first aid, sale of cattle feed, etc. The district level unions should own and operate the chilling centre, dairy plant, cattle feed plant, artificial insemination centre, and semen bank. The unions should also provide facilities for health service and dairy extension service. The district level milk cooperatives could also be federated into a marketing federation on the basis of the Gujarat Federation. Such a federation could become the regional link in the national milk grid [NCA, 1976, Pp. 160-167].

The IDC was responsible for implementing Operation Flood. The NCA recommended that the IDC should be broadened and strengthened to act as a finance house and promotional institution for speeding up the reorganisation of the dairy sector as a whole. Visualising the greater role of IDC in guiding and helping the country on a larger scale, even after completion of OF-I, the NCA recommended the addition of a strong research and development wing to the IDC. The NDDB was equipped with capacity for project planning, processing and implementation; it was providing a variety of services including feasibility studies, execution of dairy projects on consultation/turnkey basis, organising of milk producers' cooperatives, consultancy services in the fields of dairy husbandry, milk processing, marketing, and management, as also custom made training programmes for the development of manpower required to manage various dairy development programmes. The NCA, therefore, recommended the merger of the NDDB, with the IDC, as its research and development wing [NCA, 1976, Pp. 167-168].

"The UN Inter-Agency Mission reviewed the achievements under OF-I at its conclusion in 1981 and observed as follows: (i) The creation of 10,000 village cooperatives involving over 1.3 million producers in 27 milksheds in India by the end of OF-I has been a massive achievement. Considerable strides have also been taken in building up a structure through district cooperative unions, with their own manufacturing and processing facilities, to ensure that the small producers have a say, and a stake, in milk production and sale far beyond the confines of their villages. (ii) The project has shown that dairying in India is a powerful development tool, in that it can serve to provide nutritious high protein foods to city dwellers and at the same provide income to the very poor people in rural villages. (iii) By creating a stable outlet for the milk produced in rural areas, organised milk production has in

many cases doubled incomes in villages and thereby contributed to an improved standard of living. (iv) The success of Operation Flood in restructuring the dairy industry in India through the setting up of 27 Anand Pattern Cooperative Unions and connecting these with the four best markets in India is indeed commendable. It has also demonstrated that food aid can be used successfully for the development of local agricultural industries, given the right kind of institutional structure coupled with properly planned and integrated programmes for development" [Jha, 1984, Pp. 13-14].

Apart from OF-I, projects based more or less on the Anand Pattern were also taken up in three States - Karnataka, Madhya Pradesh, and Rajasthan - with assistance from the World Bank (IDA), during the period 1974-84. While the World Bank assistance accrued to the Government of India, equivalent loan assistance was provided by the latter to the State Governments for undertaking the projects. The funds, totalling Rs 117.43 crore, were to be utilised mainly towards purchase of imported equipment, training, etc. Under these projects, by 1984, 4,545 cooperatives were organised with a membership of 4.42 lakh.

Operation Flood-II

Encouraged by the experience of OF-I, the NDDB submitted in June, 1977, a proposal for Operation Flood-II Project (OF-II). The Project was to be in two parts: Pre-programme actions required for launching OF-II to be carried out during the last year (1978-79) of OF-I; and implementation of OF-II during July 1, 1978 to June 30, 1985. This programme was proposed to be extended to cover all potential producing regions in the country and bringing about 10 million producer families into its fold.

NDDB's proposal was discussed at an inter-ministerial meeting held in the Planning Commission in September, 1977 when it was agreed that the project should be divided into two consecutive phases. The first phase was to be for a period of three to five years. Based on the performance in the first phase, the second phase could be considered. The project was proposed for assistance to the World Bank. The World Bank Appraisal Mission also recommended its implementation in two phases. The first phase of the project was to comprise a range of activities that would be initiated in its first three years and completed in seven years. The outlay envisaged was Rs 312.80 crore ($ 300 million), for which the World Bank was to advance a loan of $150 million. The question of financing the second phase as a continuing operation was to be considered after the first phase. On the basis of the Appraisal Report, the World Bank (IDA) approved, in June 1978, a loan of $150 million for the first phase of the project. In addition, it was expected that commodity assistance would be available from the EEC and an overall project cost of Rs 485.50 crore was anticipated (Table 11).

The EEC had agreed to provide during the seven year period of OF-II, 242 thousand tonnes of skimmed milk powder, 86.7 thousand tonnes of butter oil, and 1.5 thousand tonnes of vegetable oil (Table 12).

Of the project cost of Rs 485.50 crore, the provision approved by the Planning Commission for the Sixth Five Year Plan period (1980-85) was Rs 273.00 crore. The balance cost was to be carried over to the Seventh Plan (1985-90) as Operation Flood Phase-III (OF-III).

TABLE 11. PROJECT COST OF OF-II

(Rs Crore)

I.	Repayment of OF-I Loans	75.00
II.	Generation of EEC Donated Commodities	206.00
III.	World Bank Loan	129.00
IV.	Shortfall	75.50
	Total	485.50

Source: *Report of the Evaluation Committee on Operation Flood-II*, (L.K. Jha), Ministry of Agriculture, p. 16.

TABLE 12. EEC DAIRY PRODUCTS DONATED UNDER OF-II

(thousand tonnes)

Year	Skimmed Milk Powder		Butter Oil		Vegetable Oils	
	A	S	A	S	A	S
1978	31.00	12.50	12.70	3.000	..	..
1979	31.00	28.50	12.70	10.069	..	..
1980	31.00	20.00	12.70	1.257	..	..
1981	36.00	63.50	12.70	15.448	..	..
1982	31.00	42.00	12.70	13.526	..	..
1983	35.00	10.00	11.20	0.600	0.50	..
1984	27.00	43.00	7.00	20.950	1.00	0.50
1985	20.00	10.00	5.00	-	-	1.00
Total	242.00	229.50	86.70	64.850	1.50	1.50

A: Allocations, S: Shipments
Source: EC Commission - Division VIII-A-2. (Annexure-2 of Report of March 1986)

The overall objectives of OF-II Project were: (i) to enable some 34.80 lakh milk producers' families to build a viable, self-sustaining dairy industry by March, 1985; (ii) to enable the milk producers to rear the National Milch Herd (NMH) of some 152.8 lakh cross-bred cows and upgraded buffaloes by mid-1985; (iii) to erect a National Milk Grid (NMG) which would link the rural milksheds to the major demand centres with urban population totalling 150 lakh; (iv) to erect the infrastructure required to support a viable national dairy industry, including a national frozen semen system, vaccine production and delivery system, indigenous development of dairy processing and conservation methods with enlarged facilities for indigenous design and manufacture of dairy equipment, provision of manpower development programmes, etc., and (v) through these achievements in milk production and marketing, to enable consumers to form milk and milk products an important part of adequate diet. It was envisaged that per capita milk consumption would be increased to 144 gms (per capita) per day by 1985 and 180 gms per day by 1990 [NDDB, 1985, Pp. 34-35].

The pre-project phase, which was to be carried out during the last year of OF-I (1978-79) took much longer than was originally contemplated. The project was intended to be started simultaneously in all the States, after the lead pre-project period of one year. The States/Union Territories were to accept the broad framework of the programme, execute the basic agreement with IDC and submit a perspective plan in consultation with NDDB for appraisal by IDC. The perspective plan was to indicate the scope of the project, the project area, the infrastructure to be created, the milk production projected, the build up of the village cooperatives, milk procurement, processing facilities to be created, and the marketing arrangements to be made. The appraisal report of the perspective plan by the IDC was to lay down the programme dimensions and the plan of action to be implemented in each State/Union Territory. This was to be followed by the constitution of the State Cooperative Dairy Federation, with the bye-laws acceptable to the NDDB/IDC; as the implementing agency, signing of a loan-cum-grant agreement by the Federation with the IDC and the issue of a State Government guarantee for repayment of loans by the Federation to the IDC [Jha, 1984, p. 17].

Except for Gujarat and West Bengal which signed the OF-II agreements with IDC in 1978, progress in other States was slow and, in some of them, discussions went on upto 1982-83. The delay was due to the protracted dialogue between the IDC and the State Government Departments concerned on some aspects of the programme, like the concept of the milk producers being the exclusive participants in the cooperatives, the transfer of the entire milk production, procurement, processing and marketing infrastructure already in existence to the farmers' cooperatives, the finalisation of the bye-laws for the dairy cooperatives, the transfer of the existing land and assets of the State owned agencies to the cooperatives, preparation of perspective plans, provision of Government guarantees and execution of loan-cum-grant agreements, etc. By March,

1984, all the States/Union Territories (26 in all), except Meghalaya, had signed the basic agreement with the IDC for project implementation, out of which 22 project proposals had been appraised by the IDC and 20 had been approved. By June, 1984, the IDC had released funds to 23 States/Union Territories and the implementation of OF-II had started in 22 of them. Naturally, the pre-project phase continued in some States upto 1984.

The Jha Committee commented: "In retrospect, the time contemplated for pre-programme actions proved to be unrealistic. Taking the appraisal of the perspective plan, followed by the communication of its approval by the IDC to a State/Union Territory as the starting point, OF-II started on different dates in different States. The original assumption of a common starting and terminal year was, thus, vitiated. NDDB and IDC have, consequently, adopted 1st April, 1981, being immediately after the conclusion of Operation Flood-I as the starting date of OF-II. This meant that only about four years were effectively left for the implementation of OF-II during the Sixth Five Year Plan period" [Jha, 1984, p. 19].

The period of OF-II ended on March 31, 1985. Against the approved outlay of Rs. 273 crore, the actual expenditure incurred was Rs. 277.17 crore. Despite the delay, it did more or less all that was provided in the original outlay. At the end of OF-II, the programme was in operation in 136 milk sheds in the country and had covered over 290 large, medium and small towns under organised milk marketing. Table 13 shows the programme achievements.

TABLE 13. OF II-TARGETS AND ACHIEVEMENTS BY MARCH 1985

Particulars	Target	Achievements
1. Anand Pattern Cooperatives (Nos)	29,000	34,543
2. Anand Pattern Village Cooperatives Under Artificial Insemination (Nos)	8,000	7,543
3. Milk Producers' Families (Lakh)	34.80	36.31
4. Milk Animals Under Cooperative Ambit (Lakh)	52.20	54.46
5. Annual Milk Production 1984-85 (Lakh tonnes)	-	380
6. Per Capita Milk Availability (gms/day)	144	142
7. Milk Procurement - Average (Lakh Litres/day)	55.30	57.84
Milk Procurement - Peak (Lakh Litres/day)	71.90	78.85
8. Urban Milk Marketing - Capacity (Lakh Litres/day)	-	35.00
Urban Milk Marketing - Throughput (1984-85)(Lakh Litres/day)	43.00	50.11
9. Rural Dairy Plants - Capacity (Lakh Litres/day)	76.00	87.75
Rural Dairy Plants - Peak Throughput (Lakh Litres/day)	-	78.85
10. Milk Powder Manufacturing Capacity (tonnes/day)	-	507.50

Source: *Anand Pattern and Operation Flood - An Overview*, NDDB, Anand, Pp. 38-39.

Besides, the National Milk Grid - the national marketing network - had consolidated its role. The transportation network had commissioned 92 rail-milk tankers (67 broad-gauge and 25 metre-gauge) with a capacity of 32 lakh litres and 664 road milk tankers of about 75 lakh litres capacity. Training programmes were organised for spear-head teams, personnel for milk production enhancement, milch/cattle feed plant personnel, dairy auditors. etc. About 11,644 personnel were imparted training; in addition, over 39 thousand farmers from rural milk sheds were given training. Further, the capacity for the production of balanced cattle feed was enhanced in Gujarat and created in Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Uttar Pradesh, and West Bengal. Other investments under OF-II included the Foot and Mouth Diseases Vaccine Plant at Hyderabad and the Paper Laminating Plant at Baroda.

Report of the Evaluation Committee on Operation Flood II (Jha Committee), December 1984.

By 1983-84, the NDDB's OF-II programmes had come in for criticism from a number of quarters. The criticism referred to its dependency on imported milk products, depriving the rural poor from cheap milk, marked urban consumer bias in the supply of milk, under-utilisation of milk processing capacity, breeding of cross-bred

animals unfit for agricultural operations, etc. Therefore, in February 1984, the Government of India appointed a Committee under the chairmanship of L.J. Jha to (a) evaluate the performance of IDC/NDDB with reference to the specific objectives of OF-II and assess achievements thereof; and (b) report on the constraints faced and the steps taken to obviate the difficulties and suggest corrective measures required to streamline the implementation of the programme to achieve better and quicker results. The Committee submitted its Report on December 28, 1984.

In their overall assessment, the Committee said that the approach of OF-II was sound; it was being worked by men of competence and dedication; and the policies it followed were in line with the recommendations of the National Commission on Agriculture. The Committee also found that the progress in the States which had made an early start was satisfactory. Even in the States which started much later, the evident enthusiasm and support augured well for the future. At the time of writing of the Report, the main achievements of OF-II were: (a) Over 31 lakh families, including a large proportion of landless and marginal farmers, Scheduled Castes and Scheduled Tribes, were deriving a steady income from the sale of milk with an assessed and stable year round price. (b) The States of Gujarat and Maharashtra had become surplus in milk, while Tamil Nadu, Andhra Pradesh, Karnataka, and Kerala were, by and large, able to manage on their own. Only Calcutta and Delhi still depended on imported milk powder and butter oil to sustain their milk supply, due largely to the subsidised sale price it offered to its consumers and hence a lower price to its hinterland of producers. (c) The linking of rural milksheds with urban milk consuming centres had enabled the milk procurement during March, 1984, to be over 57 lakh litres per day (llpd) as against 22 llpd at the end of OF-I (1981). The development of long distance transportation facilities had helped in reducing regional and seasonal imbalances.

Further, though it was meant to be a national programme, in fact it consisted of a number of separate projects related to individual States and Union Territories. Hence, progress had to be judged State by State and not in aggregate terms by looking at averages. The pace of implementation showed wide variations among the different States. The progress was tardy particularly in States where the cooperative movement was unknown and where marketing through middlemen and private traders was well entrenched, or where there was apathy to change on the part of officials. On the other hand, it was successful in States where the tradition of cooperatives engaging themselves in the production and marketing of milk had taken root.

The Committee referred to the processing plants set up by the IDC in different States, together with Cattle Feed Plants and the Paper Laminating Plants. It found that while the utilisation of processing capacity was high in Maharashtra, Punjab, Gujarat, and Tamil Nadu, it was not so in a number of other States. Future investments should, therefore, be made with caution. The "IDC resources should be going less freely into what might be called the hardware sector and be more generously deployed in sustaining the inputs programme. The provision of better services and the education of milk producers to induce them to make fuller use of services, like artificial insemination, vaccine, processed fodder and cattle feed, should be more vigorously pursued, so that all the capacity created in the various installations is fully utilised" [Jha, 1984, p. 48].

The allegation that Operation Flood had been instrumental in depriving the children of poor cattle owners of milk, which they would otherwise have consumed, by diverting it to urban areas was, according to the Committee, a misreading of the situation. The main areas of OF-II were the milksheds from where milk had traditionally flowed into the urban areas, mostly through middlemen and traders. OF assisted the producers to organise themselves into cooperatives and get the best possible price for their milk, particularly during the flush season. The producers earned more incomes from the sales they made and thus had more options to meet their family needs. The beneficiaries included a large number of small and marginal farmers, landless labourers, members of Scheduled Castes, Scheduled Tribes, etc., and more particularly their women folk who had no other gainful employment. OF, together with

other rural development programmes had, thus, a vast potential for tackling the problems of rural poverty. The criticism that OF-II was increasing dependence on imports was not borne out by facts. The use of imported powder to sustain a rising level of consumption in the cities had declined. The representation that the cattle, through artificial insemination and cross-breeding, were not suitable for draught purposes was also without foundation.

The Committee recommended that the Agricultural Prices Commission should make recommendations regarding the producers' price of milk, having regard to the inter-relationship of fodder and other crops required by the milk producer to feed his cattle, as well as the producers' opportunity cost. Once the producers' price was determined, the price for the consuming centres could be fixed taking into account the cost of transportation and other overheads. If any State Government wished to subsidise their consumers in particular areas, they should bear the subsidy out of their own budgetary resources.

The Committee suggested liberalisation of the pattern of assistance provided for the various OF-II programmes by the IDC to the State Cooperative Milk Federations; but, the burden of taking on a non-viable area for OF activities should not be on the IDC but on the State Government concerned as a development outlay.

The Committee agreed with the NCA and the Committee on Public Undertakings that the NDDB should be merged with the IDC and function as its research and development wing. As the role and functions of the IDC were more akin to developmental financial institutions like NABARD, IDBI, and IFC, the Committee recommended that a new Corporation be formed taking over the functions performed by NDDB and IDC. The new Corporation should perform a more wide ranging role beyond the OF programme. It could provide financial and technical assistances for dairy development projects, even of a promotional nature, which did not fall within the purview of Operation Flood.

Report of the Commission of European Communities on OF-II, March, 1986.

In March, 1986, the Commission of European Communities presented a Report to the Council and European Parliament on the Implementation of India's Operation Flood II financed by the European Communities through the supply of Food Aid. According to the Commission, in view of the fact that the Operation Flood had been in operation for 15 years (1971-86), it seemed appropriate to draw a balance of the achievements and assess the experience which had been obtained during the period. The Commission stated that OF-I, although limited to milk supply to four major metropolitan cities, was already an enormous project. With OF-II, a great leap forward was intended, by setting a target for covering all the cities with more than a lakh people: such a gigantic target was set for a period as short as seven years. It was not, therefore, surprising that initial objectives had been achieved at the end of the period to the extent of 50 per cent. In fact this was "not only an honourable, but also a remarkable achievement, particularly in respect of the extension of the cooperative movement, the marketing of liquid milk and the investment of dairies and supporting infrastructure. Food aid did not have a defavourable impact on internal prices ..... and counterpart funds have been accounted for and used for development purposes, or set aside for future investment taking into account the fact that, through the slower pace of the project implementation, commodity imports were unlinked from the investment programme. This, however, is perfectly normal, when food aid is used for development purposes, each of the two components of the programme having its own logic" [CEC, 1986, Pp. 13-14].

According to the Commission, OF was more than a means of using food aid to supply dairy products to urban demand. It was intended as a rural development project. In a country as large as India, OF was conceived on a scale coherent with the economic and social context of a subcontinent. However, size generated such difficulties in overall organisation, planning, implementation, and management that it

contributed to some extent to lower performance and achievements in some of the project operations. OF was planned to organise ten million rural farmers; till 1986, the operation had achieved mobilization into dairy cooperatives of almost four million milk producers. Another impressive feature was the time span over which the operations were being implemented. OF had extended over 15 years from the starting point of OF-I in 1970 to the planned termination date of OF-II in 1985. A third phase of OF to cover the five years ending 1990 (OF-III) had already been planned to reach a degree of self-propelled development and total self sufficiency from external aid. But still, the targets fixed for the year 1990 seemed too ambitious with respect to historical performance and predictable difficulties in achieving them (CEC, 1986, p 14). Nevertheless, the Commission concluded "that the experiment has been positive and proof has been given that food aid can be, under appropriate circumstances and within a comprehensive and well-structured scheme, a very useful development tool, avoiding the occasionally deceiving results of traditional utilisation of food aid in terms of dependency, or modification of food habits in favour of products that cannot be grown locally and of the depressive influence on prices and, therefore, on local production" [CEC, 1986, p. 19].

Operation Flood Phase III

OF-III was to be implemented during the Seventh Plan period 1985-90. Being a continuation of OF-II its objectives included (i) to oversee transfer of milk processing and technical input infrastructure to the milkshed unions; (ii) to intensify each union's work to bring more milk producers under the ambit of the dairy cooperatives; (iii) to ensure the development of financially viable federations and unions governed by elected boards; (iv) to intensify urban milk marketing with greater emphasis placed on liquid milk marketing; and (v) to put to optimum use, in the milkshed areas, the technical inputs infrastructure of unions and the Government or its allied agency, to benefit the rural milk producers.

TABLE 14. KEY PHYSICAL TARGETS OF OF-III BY 7TH PLAN-END

Particulars	Targets
1. Anand Pattern Dairy Cooperatives (Number)	50,000
2. Anand Pattern Dairy Cooperative under Artificial Insemination (Number)	25,000
3. Milch Animals Under Cooperative Ambit (Lakh)	152.80
4. Milk Procurement Peak (Lakh Litres per day)	183.30
5. Urban Milk Marketing (Lakh Litres per day)	124.20
6. Build-up of Dairy Capacity (Lakh Litres per day)	200.00
7. Dairy Cooperative Membership (Lakh)	100.20
8. Urban Cities to be Covered	200.00

Source: *Anand Pattern and Operation Flood - An Overview*, NDDB, 1985, p. 41.

The key physical targets proposed by the end of the Seventh Plan period are as given in Table 14. These targets were to be achieved through the enhancement of processing capacity; technical inputs for milk production; milk marketing systems; support for village cooperative organisations; planning, information systems, training and research; project implementation; national milk grid; infrastructural support for disease control and milk production enhancement; supplementary feeding programmes; and processing capacity renovation, modernisation, and high margin products. Provision for working capital for dairy and cattle feed plants were also made under OF-III.

The total outlay of OF-III was estimated to be Rs 681.29 crore, which included a provision of Rs 100 crore to be revolved as working capital for dairy plants. While the working capital was to be provided on a cent per cent loan basis, the remaining project outlay was to be disbursed on an overall pattern of about 35 per cent loan and 65 per cent grant. Under OF-II, the total fund generation was Rs 515.35 crore, and expenditure Rs 277.17 crore. The IDC had thus carried over a fund of Rs 238.18 crore and a revolving fund of Rs 93.24 crore for OF-III. The additional funds of Rs 349.87 crore were expected partly from EEC as commodity aid and partly from the World Bank credit.

The National Dairy Development Board Act, 1987

Following the recommendations of the Jha Committee, Government enacted the National Dairy Development Board Act, 1987, in September 1987, "to declare the institution known as the National Dairy Development Board in the State of Gujarat to be an institution of national importance and to provide for its incorporation and for the vesting in that body corporate of the undertakings of the Indian Dairy Corporation with a view to provide for the administration and the carrying on of functions to be performed by the body corporate more efficiently throughout the country and for matters connected therewith and incidental thereto" [Preamble to the Act].

The functions of the NDDB as defined under this Act included (a) to promote, plan and organise programmes for the purposes of development of dairy and other agriculture-based and allied industries and biologicals on an intensive and nation-wide basis and to render implementation of such programmes; (b) to adopt the cooperative strategy in a more effective manner on an intensive and nation-wide basis; (c) facilitate research and promotional activities in the fields of dairying, immunology, animal husbandry, agriculture and horticulture; (d) impart technological know-how to organisations in the cooperative or public sector engaged in the production, procurement, preservation or marketing of milk and milk products; (e) facilitate training of personnel; (f) design, plan, promote, develop, construct, sponsor and set up dairy industries and undertake any other related activity; (g) provide consultancy and managerial services and the execution of any project on a turn-key basis or otherwise, furnishing integral services such as storage, transportation, processing, distribution of milk and milk products and to serve as lead institution with reference to milk and milk products; (h) adopt measures (*i*) for the conservation of milk and milk products; (*ii*) to assist milk producers to get incentive prices and (*iii*) to build up a national milk grid; (i) recommend to the Government, as and when necessary, the minimum and maximum prices to be fixed for purchase or sale of milk and milk products; (j) function as a channelising agency for import or export of milk and milk products and of milch animals or bulls; (k) provide financial, technical, administrative, managerial or other assistance or take necessary measures for (*i*) the development and preservation of high yielding cattle, (*ii*) adoption of improved methods of cattle breeding, (*iii*) increasing production and supply of better and improved animal feed, including fodder, and (*iv*) enhancement of the cattle wealth in general; etc.

Progress During the Seventh Plan, 1985-90

OF-III had commenced in April 1985 with an approved outlay of Rs 681.29 crore for the Seventh Plan. In March-April 1987, the World Bank appraised the OF-III project, and estimated the cost of the project at Rs 914.95 crore. The World Bank assistance was of the order of Rs 486.00 crore. The EEC and India signed a financial protocol in March 1988 for the supply of 75,000 tonnes of skimmed milk powder and 25,000 tonnes of butter oil as the EEC Food Aid to be delivered over the seven year period, 1987-1994, in support of OF-III. A sum of Rs 227 crore was expected to be generated from the sale of these commodities for OF-III. In addition, the NDDB's internal resources were to be used to meet the total project cost. By the end of the Plan period, OF-III was being implemented in nearly all the States and Union Territories. The cumulative progress in respect of the various components up to September 1989 are as in Table 15.

Nearly 30,364 societies were covered by the Animal Health Programme and 10,405 village societies were provided with Artificial Insemination Services. About 4,305 tonnes per day of balanced cattle feed compounding capacity spread throughout the country had become available. By September 1989, the cattle feed plants had produced nearly 2.5 lakh tonnes of cattle feed which was marketed to the farmer members through 27,183 village societies. Eight Urea Molasses Block plants with a total capacity of 64 tonnes per day were established while another three plants were under construction.

TABLE 15. OPERATION FLOOD - III: PHYSICAL PROGRESS

Sr. No.	Components	Original Targets	Achievements by September 1989
(1)	(2)	(3)	(4)
1.	Societies Organised (thousand)	50.00	60.28
2.	Rural Dairy Processing Capacity (m. litres/day)	20.00	13.93
3.	Farmer Members (million)	10.02	6.56
4.	Rural Milk Procurement (m. litres/day)	18.33	8.29
5.	Urban Milk Marketing (m. litres/day)	12.42	7.17

Annual Report 1989-90, Department of Agriculture and Cooperation, Government of India, New Delhi, p. 102. For Col. 3, table 14.

The progress of Operation Flood Programmes (1971-1990) is summarised in Table 16. In 1989-90, The dairy cooperative societies organised under Operation Flood milksheds procured on an average 9,810 tonnes of milk per day out of an estimated national milk production of 141,096 tonnes per day (6.95 per cent). Milk marketing reached 7,250 tonnes per day. The cooperatives were marketing liquid milk in 526 cities and towns all over the country. The National Milk Grid System was strengthened with the commissioning of 976 road/rail milk tankers (13.03 million litres capacity). Orders for 302 more tankers with capacity of 6.13 million litres per day were made. Storage facilities were provided for 11,000 tonnes of skim milk powder and 2810 tonnes of white butter/butteroil.

TABLE 16. PROGRESS OF OPERATION FLOOD PROGRAMMES, 1971-1990.

Year	Cooperative Dairy Societies (000')	Farmer Members (Lakh)	Milk Procurement (tonnes/day)	Marketing of Milk			Milk Sheds Covered (Nos.)	Artificial Insemination Centres (Nos.)
				Metro Cities	Other Cities and Towns	Total		
				(tonnes per day)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1970-71	1.60	2.78	520	910	90	1,000	5	
1971-72	1.80	3.27	650	990	90	1,080	5	
1972-73	2.20	3.61	760	1,070	100	1,170	7	
1973-74	2.60	3.94	610	1,050	120	1,170	9	
1974-75[4]	3.00	4.44	870	1,070	130	1,200	15	
1975-76	4.50	5.62	1,150	1,330	210	1,540	28	
1976-77	7.70	7.23	1,550	1,600	290	1,890	33	
1977-78	9.30	9.43	1,700	1,680	470	2,150	35	2,361
1978-79	10.10	12.13	2,010	1,800	550	2,350	37	2,709
1979-80	11.40	14.75	2,360	1,940	640	2,580	39	4,526
1980-81	13.30	17.47	2,560	2,180	610	2,790	39	4,868
1981-82	18.40	21.24	2,780	2,360	920	3,280	71	5,949
1982-83	23.50	26.20	4,420	2,590	1,180	3,770	98	6,368
1983-84	28.60	31.16	5,210	2,770	1,520	4,290	115	6,695
1984-85	34.50	36.32	5,780	2,950	2,060	5,010	136	7,802
1985-86	42.70	44.84	7,880	3,000	2,960	5,960	164	9,085
1986-87	49.10	50.97	7,850	3,130	3,420	6,550	168	9,421
1987-88	54.50	56.66	7,700	3,110	3,790	6,900	170	9,162
1988-89	58.90	62.50	7,970	2,980	4,070	7,050	173	10,336
1989-90	60.90	70.03	9,810	3,060	4,190	7,250	174	10,934

Source: National Dairy Development Board.

The Jha Committee had recommended the strengthening of the Dairy Division of the Ministry of Agriculture to ensure a coordinated approach at the all-India level between Operation Flood and non-Operation Flood activities. In consequence, in 1988-89, the Government of India set up a Technology Mission on Dairy Development, "to accelerate the application and adoption of modern technology to improve productivity, reduce costs of operation and ensure better availability of milk and dairy products" [Ministry of Agriculture, 1988-89, p. 193]. The Mission was expected to consolidate the gains of Operation Flood through a speedier replication of the Anand model of cooperatives in nearly 60 per cent of the area in the country.

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PESTICIDES INDUSTRY IN INDIA: PERFORMANCE AND CONSTRAINTS

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The pesticides industry has grown at an annual rate of 7.67 per cent from 1966 to 1985-86. It has also undergone a structural change from low value products to high value products. The objective of registration of technical grade material manufacture and formulations is to ensure that the pesticides are effective and efficient for the purposes claimed and will not harm the consumers of the treated food and the natural environment. There is a vast scope for accelerating pesticides consumption by diversifying to hitherto untapped regions and crops. This however, calls for a major market development effort on the part of the industry. The paper examines the working of various constituents of the industry, and constraints on its growth. The paper is based on secondary as well as primary data.

INTRODUCTION

Pesticides are a group of chlorine agents used in plant protection, public health programmes, household sprays and for fumigation of a storage godown for the protection of agricultural crops. In agriculture, the use of pesticides starts from the pre-sowing stage. The soil is treated against nematodes before sowing. Then the seeds are treated against seed-borne diseases. The standing crops are treated against damage by pests, insects, rodents, etc. Accordingly, pesticides are divided into five broad groups, namely, insecticides, herbicides/weedicides, fungicides, fumigants, rodenticides/others. Generally, the use of pesticides can cause adverse effects on human health and on the natural environment. Therefore, control on use of pesticides becomes necessary. This paper is designed: (a) To present an overview of the pesticides industry in India, (b) To analyze its regulatory environment, and (c) To document the problems faced by the various constituents of the pesticides industry, namely, the Technical grade Material Manufactures, Formulators, and Dealers

METHODOLOGY AND DATA

The paper is based on secondary data as well as primary data collected for in-depth case studies of the several constituents of the Industry. The data from major published sources, government official records, and also the records maintained by the various associations of the industry are used. These relate to the growth of installed capacity, production of various approved products, consumption in agriculture and non-agricultural sectors and an overview of the shares of various constituents.

The case studies are based on primary data collected from selected constituents of the industry. Four major technical grade material manufacturers were selected; three are multinationals having their own formulation capacity while the fourth is a purely indigenous company without formulation capacity. For the case studies of formulators, two states, Andhra Pradesh and Gujarat were selected. Andhra Pradesh has the highest consumption of pesticides and also has a variety of products in the market. Gujarat ranks third and has substantial formulating capacity. After selecting the two states, discussions were held with the respective formulators' associations. In Gujarat, two districts, Ahmedabad and Baroda, were selected for identifying the formulators. In Andhra Pradesh, Guntur district was selected. Eight formulators, four each from Andhra Pradesh and Gujarat, were selected keeping in mind the turn-over and variety of products formulated by them and studied in-depth.

In order to understand the system and flow of products from formulators to retailers to farmers, a few distributors and retailers were selected for an in-depth case study. Andhra Pradesh ranks number one and Gujarat ranks fourth in terms of numbers of dealers (sale points). Discussions were held with pesticides dealers association in the two states and four distributors and five

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retailers from Gujarat, and five distributors and three retailers from Andhra Pradesh were selected, keeping in mind the turnover and type of products dealt by them [Srivastava and Patel, 1990].

AN OVERVIEW

Growth of Pesticides Industry

Available records indicate that rat poisons were used even prior to 1,000 B.C. Natural products like tobacco decoction, pyrethine, whale oil, soap and inorganic chemicals such as calcium disulphide, calcium arsonate, and paris green came into use between the tenth century and beginning of the nineteenth century. However, it was only after the Second World War with the discovery of DDT (insecticides) and 2, 4-D (herbicides), that revolutionary changes in the use of chemicals as pesticides came about and laid the foundation for research and commercialization of new pesticides. Today more than 900 technical pesticides are available in the world.

The use of pesticides in India started even before independence particularly for the control of mosquitoes. Prior to 1951, all pesticides used in India were imported and their total value was less then Rs 6.0 million [Chopra, 1973]. A real beginning of the pesticides industry in India was made in 1952. The first plant to produce Benzene Hexachloride (BHC) was established in 1952 in the private sector at Rishra near Calcutta. In 1954, Hindustan Insecticides Ltd.(A Govt. of India enterprise) was set up to manufacture DDT for the malaria control programme. Under an agreement with UNICEF and WHO, the first factory of Hindustan Insecticides Ltd (HIL) with a capacity of 700 tonnes per annum was started in Delhi. In 1958-59, a second unit with installed capacity of about 1,344 tonnes of technical DDT per annum was started at Udyogmandal near Cochin in Kerala. At the same time, capacity of the Delhi unit was doubled. Therafter, there was a rapid increase. The installed capacity increased from 19,280 tonnes in 1966 to 1,02,328 tonnes in 1985-86 and production of technical grade pesticides increased from 13,948 tonnes in 1966 to 54,918 tonnes in 1985-86; production as a proportion of installed capacity declined from 72.34 per cent in 1966 to 53.67 percent in 1985-86. Production grew at 7.67 per cent per annum (in quantity terms) and at 12.61 per cent per annum (in value terms at constant 1985-87 prices). The growth rate of value of production even at constant prices is higher than the growth rate of quantity of production because there has been a shift from low value products to high value products; the proportion of two low value products BHC and DDT in the total production came down from 82.3 per cent in 1966 to 56.2 per cent in 1985-86 (Table 1).

TABLE 1. INSTALLED CAPACITY AND PRODUCTION OF TECHNICAL GRADE PESTICIDES

(Qty in tonnes; Value in Rs million)

	Installed Capacity	Production		Capacity Utilization (%)	BHC & DDT Production		Other Products	
		Qty	Value*		Qty	Value	Qty	Value*
1966	19,280	13,948	316.12	72.34	9911	166.57	4,037	149.55
					(82.3)	(52.7)	(7.7)	(47.3)
1971	42,973	24,908	541.18	57.96	20,365	279.90	4,543	261.28
					(81.8)	(51.7)	(18.2)	(48.3)
1975-76	50,050	35,036	824.46	70.00	28,345	349.82	6,691	474.64
					(80.9)	(42.4)	(19.1)	(57.6)
1980-81	74,850	43,281	1,472.64	57.82	32,761	370.61	10,520	1,102.03
					(75.7)	(25.2)	(24.3)	(74.8)
1985-86	102,328	54,918	3,413.56	53.67	30,887	393.37	24,032	3,020.19
					(56.2)	(11.5)	(43.8)	(88.5)

* Value of Production is computed at constant prices prevailing in 1985-86/1986-87.
Source: *Indian Chemical Statistics*, 1986-87.

TABLE 2. GROUP-WISE PRODUCTION OF TECHNICAL GRADE MATERIALS

(Quantity in tonnes)

Group of Pesticides	1981-82		1982-83		1983-84		1984-85		1985-86		1986-87		1987-88		1988-89*	
	Quantity	Percent	Quantity	Percent	Quantity	Percent	Quantity	Percent	Quantity	Percent	Quantity	Percent	Quantity	Percent	Quantity	Percent
1. Insecticides	44,727	89.8	53,366	91.3	54,463	90.4	51,533	87.9	47,881	87.2	47,602	84.7	49,370	86.74	51,770	86.86
2. Fungicides	3,050	6.1	2,901	5.1	3,015	5.0	3,946	6.7	3,828	7.0	4,552	8.1	4,010	7.04	4,030	6.76
3. Herbicides	436	0.9	438	0.7	580	1.0	1,208	2.1	1,557	2.8	1,730	3.1	1,930	3.39	2,810	3.66
4. Weedicides	674	1.4	599	1.0	768	1.3	350	0.5	261	0.5	421	0.7	240	0.42	160	0.27
5. Rodenticides	251	0.5	306	0.5	340	0.5	355	0.6	283	0.5	429	0.7	460	0.81	650	1.09
6. Fumigants	573	1.2	702	1.2	1,081	1.8	1,182	2.1	1,106	2.0	1,452	2.7	820	1.44	800	1.34
7. Antibiotics	51	0.1	1	0.0	-	-	-	-	-	-	-	-	30	0.05	-	-
8. Plant Growth Regulants	22	0.0	79	0.2	7	0.00	35	0.1	2	0.0	-	-	60	0.11	10	0.02
Grand Total	49,784	100	58,472	100	60,254	100	58,609	100	54,910	100	56,186	100	56,920	100	59,600	100

TABLE 2A. GROUP-WISE PRODUCTION OF TECHNICAL GRADE MATERIALS

(Value in Rs '000)

Group of Pesticides	1981-82		1982-83		1983-84		1984-85		1985-86		1986-87		1987-88		1988-89*	
	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent
1. Insecticides	178033.6	68.0	2192465.8	76.1	2352650	74.6	2314171.6	76.0	2627982.4	77.0	2423085.6	74.0	2658866	71.97	2979000	78.80
2. Fungicides	209685	8.3	199365	6.9	213611	6.8	288258	9.5	301491	8.8	175424	5.4	248890	7.71	241960	6.40
3. Herbicides	33136	1.3	33288	1.2	46560.5	1.5	141530.75	4.6	200301.25	5.9	2344871.75	7.2	267445	7.24	310260	8.21
4. Weedicides	419525	16.5	351247	12.2	385970	12.2	120724	4.0	130209	3.8	199655	6.2	136900	3.71	104000	2.75
5. Rodenticides	16375	9.6	19970	0.7	22140	0.7	23175	0.8	18475	0.5	27945	0.7	30700	0.83	42250	1.12
6. Fumigants	70150	2.8	48600	2.0	132400	4.2	144975	4.8	134502	3.9	178775	5.6	99500	2.69	100000	2.65
7. Antibiotics	62000	2.4	1200	0.8	-	-	-	-	-	-	-	-	36000	0.98	-	-
8. Plant Growth Regulants	2619.5	0.1	23700	0.9	1052.5	0.0	10500	0.3	600	0.1	-	-	180000	4.87	3000	0.07
Grand Total	2541524*	100	2000335.8	100	3154388.9	100	3043339.35	100	3413560.65	100	3239756.35	100	3694301	100	3780470	100

Source: Monitoring and Evaluation (Chem.) Cell, Department of Chemicals, Ministry of Industry, Government of India. Value is computed at the constant prices prevailing in 1985-86/1986-87.
* Estimated

TABLE 3. INSECTICIDES APPROVED BY THE REGISTRATION COMMITTEE

1. Aldrin #	42. Difenphos	83. Nitrofen -
2. Aluminium Phosphate	43. Difolation	84. Oxydemeton
3. Allethrin	44. Dinocap	85. PMA
4. Alachlor	45. Decamethrin	86. Pyrathrum
5. Alpha Napthyl Acetic Acid	46. Dithianon	87. PCNB
6. Atrazine	47. Dicamba (for export)	88. Paradichlorobenzene
7. Aureofungin	48. EMC	89. Pentachlor Phenon (PCP)
8. Aldicarb *	49. Ethylene Dibromide +	90. Pendimethalin
9. B.H.C. +	50. EOCT	91. Phosphamidon
10. Butachlor	51. Endosulphan *	92. Phorate*
11. Benomyl	52. Ethion	93. Phenthoate
12. Barium Carbonate	53. Ediphenophos (Honosan)	94. Phosalone
13. Benthiocarb	54. Ethepon	95. Paraquat Dichloride*
14. BPMC	55. Ferbarn	96. Propoxur
15. Copper Oxychloride	56. Fenthion	97. Propanil
16. Cuprous Oxide	57. Fenitrothion	98. Paraquat Dimethyl Sulphate
17. Copper Sulphate	58. Fluchloralin (Basalin)	99. Pirimiphos Methyl
18. Carbryl *	59. Formothion	100. Quinalphos
19. Chlordane #	60. Fenvalerate	101. Sodium Cyanide
20. Captan	61. Gibberellic Acid	102. Sulphur
21. Calcium Cyanide	62. Glyphosate	103. Sirmate
22. Chlorebezilate	63. Heptachlor #	104. Simazine
23. Chlorothalonil	64. Isoproturon	105. Streptocycline
24. Coumachlor	65. Kitazin	106. Thiram
25. Chlormaquat Chloride	66. Lindane (Gamma B.H.C) +	107. Thiometon
26. Carbendazim (Bavistin)	67. Lime Sulphus	108. Trichlorophon (Dipterex)
27. Carbofuran	68. Malathion	109. Triforine
28. Carboxin	69. MEMC	110. Tatradifon
29. Chlorfenvinphos	70. Methyl Bromide *	111. Trichlor Acetic Acid (TCA)
30. Chlorpyriphos	71. MCPA	112. Triallate
31. Calixin	72. Maleic Hydrazide +	113. Thiophanate Methyl
32. Copper Acceto Arsente (Paris Green)	73. Mataldehyde	114. Warfarin
33. Cypermethrin	74. Monocrotophos *	115. Ziben
34. D.D.T. -	75. Mancozed	116. Ziram
35. Dimethote	76. MSMA	117. Zinc Phosphide
36. Diazinon	77. Methyl Parathion +	118. 2, 4-D*
37. Dalapon	78. Methabenzthiazuron (Tribunil)	119. Toxaphene -
38. Dichlorvos	79. Metoxuron	120. Dibromochlo propane (DBCP) -
39. D.D.Mixture	80. Menazon	121. Acephate
40. Diuron	81. Nicotine Sulphate	122. Bro, odiolorie
41. Dicofol	82. Nickle Chloride	123. Metalaxyl

* Restricted in some other countries
# Restricted in some countries of Asia including India
+ Banned in some other countries of Asia.
- Banned in some countries of Asia including India.
Source: Directorate of Plant Protection Quarantine and Storage, Faridabad.

Among the five groups of pesticides, insecticides predominate both in quantity and value terms (Tables 2 & 2A). In 1986-87, 1987-88, and 1988-89, insecticides accounted for 84.72, 86.74 and 86.86 per cent of total pesticides in quantity terms and 74.82, 71.92 and 78.80 per cent in value terms, respectively. It will be noticed that, though their share in the total quantity declined, their share in the total value increased; this is because of a shift from low value to high value products.

Industry Profile

The number of pesticides in the schedule to the Insecticides Act, 1968, was 385 till July 1987. Of them 123 were approved for registration by the registration committee (Table 3). During the last five years only 42 products are in actual production. The pesticides materials produced by technical grade manufacturers are used as raw materials by formulators and the formulated

products are sold through wholesalers and retailers to the farmers (Figure 1). A brief profile of each of the constituents of the pesticides industry is presented here.

TABLE 4. MARKET CONCENTRATION FOR TECHNICAL GRADE MATERIALS (IN TERMS OF QTY. PRODUCED) (1985-86)

	Technical Grade Material	Name of Company	Market Concentration (% share of market)
1.	BHC	Kanoria Chemicals	58.0
2.	DDT	Hindustan Insecticieds Limited	100.0
3.	Malathion	FICOM Organics	28.0
4.	Methyl Parathion	Bayer	99.8
5.	Metasystox	Bayer	100.0
6.	Fenthion	Bayer	100.0
7.	Dimethoate	Rallis India	77.4
8.	DDVP	Ciba-Geigy	100.0
9.	Quinalphos	Sandoz	84.5
10.	Monocrotophos	Ciba-Geigy	45.1
11.	Phosphamidon	Ciba-Geigy	75.5
12.	Thimet Phorate	Cyanamid	62.9
13.	Ethion	Shaw Wallace	39.4
14.	Endosulfan	Excel	70.1
15.	Fenvalerate	Gujarat Insecticides	31.3
16.	Cypermethrin	Bharat Pulverising	38.7
17.	Copper Oxychloride	Travan Cochin	100.0
18.	Dithane	Indofil	100.0
19.	Paraquat	Indian Expo.Ltd (ACCI)	100.0
20.	Aluminium Phosphide	Uninted Phos.P.Ltd.	54.4

Total Production of 20 Products = 51,811 tonnes
Total Production of Remaining Products = 3,107 tonnes
Grand Total = 54,918 tonnes
Shares of 20 products in total production = 94.3%

Source: Monitoring and Evaluation (Chem.) Cell, Department of Chemicals and Petrochemicals, Ministry of Industry, Government of India, New Delhi.

Technical Grade Material Manufacturers

There are 79 technical grade material manufacturers of which 51 have been active in recent years and 16 accounted for 94.3 per cent of the production (quantity) of technical grade materials in 1985-86 (Table 4). Table 5 shows that, of the 16 companies, 13 have the bulk of the market share of the products dealt by them and that, except BHC, malathion, ethion, fenvalerate, and cypermethrin, most other products have a very marked market concentration in the sense that a single company has a very predominant market share. All the 51 active companies do not produce every year. In 1985-86, only 35 companies were in production; and, out of these, 10 companies had a major market share (80.3 per cent in quantity terms) in the products group dealt by them (Table 6). In value terms, 88.33 per cent of the total production is concentrated with only 20 companies (Table 7). It may be observed that the ranking of companies based on quantity of production (Table 6) is quite different than that based on the value of production (Table 7) because the unit values of different pesticides are different. While BHC and DDT manufacturers account for substantial market share in technical grade materials in terms of quantity of production, it is those companies which are manufacturing third and fourth generation pesticides, with higher unit values, which have the bulk of the market share in value terms.

Figure. 1
The scheme of manufacture and distribution is as follows:

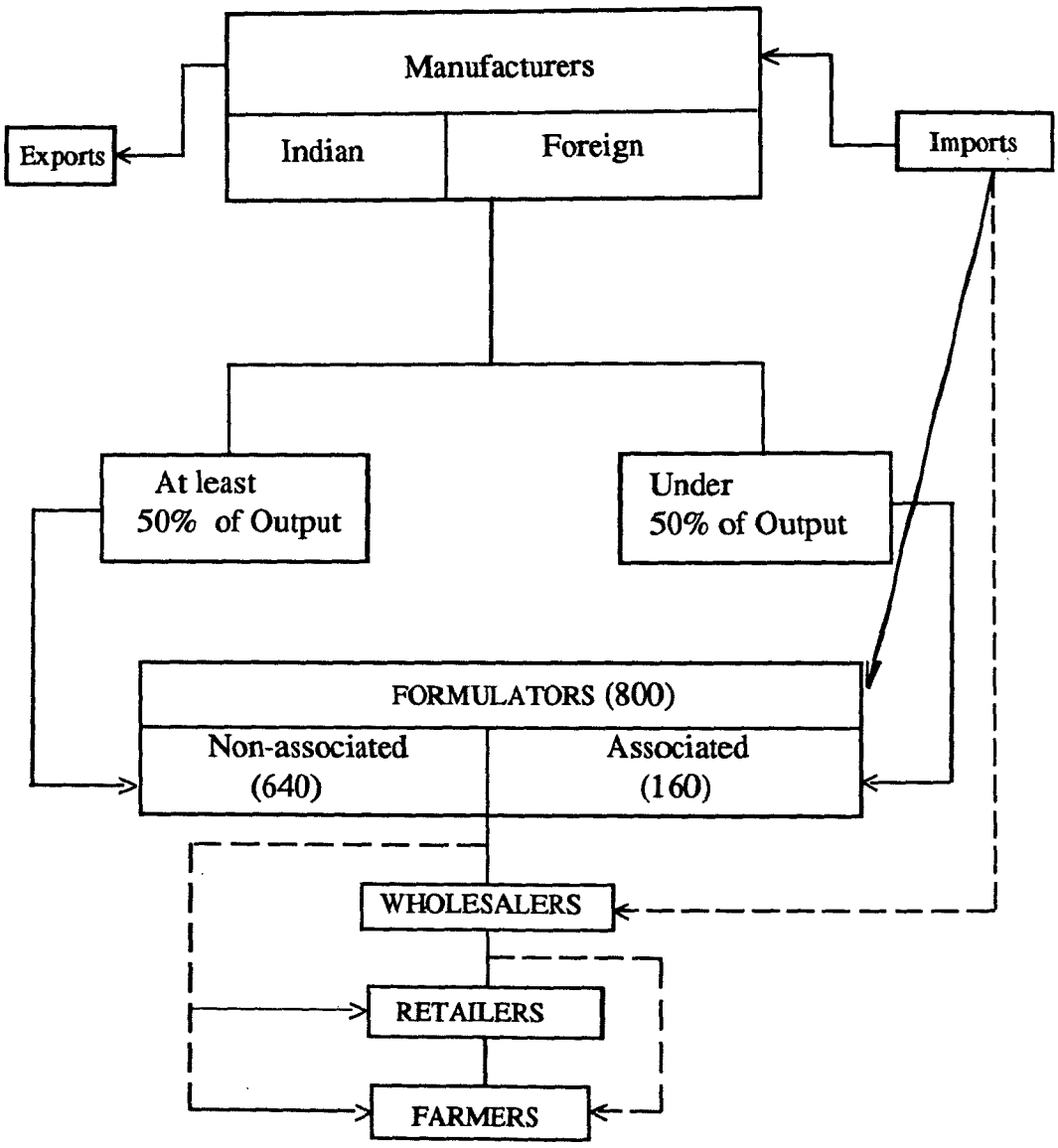

TABLE 5: MARKET CONCENTRATION FOR TECHNICAL GRADE MATERIALS (IN TERMS OF VALUE OF PRODUCTION) (1985-86)

Technical Grade Material	Name of Company	Market Concentration (% share of market)
1. BHC	Kanoria Chemicals	58.40
2. DDT	Hindustan Insecticides Limited	100.00
3. Malathion	FICOM Organics	27.97
4. Parathion Methyl	Bayer	99.80
5. Metasystox	Bayer	100.00
6. Fenitrothion	Bayer	91.92
7. Fenthion	Bayer	100.00
8. Docopol	HIL	100.00
9. Dimethoate	Rallis India Ltd.	77.42
10. DDVP	Ciba-Geigy	100.00
11. Quinalphos	Sandoz	84.55
12. Monocrotophos	Ciba-Geigy	45.08
13. Carbaylidon	Paushak	100.00
14. Phosphamidon	Ciba-Geigy	75.52
15. Phosalone	Volrho Ltd. (Medak)	100.00
16. Thimephorate	Cynamid	62.93
17. Ethion	Shaw Wallace	39.37
18. Endosulfan	Excel	74.14
19. Fenvalerate	Gujarat Insecticides	31.35
20. Cypermethrin	Bharat Pulverising	38.71
21. Captafol	Rallis India Ltd.	100.00
22. Captan	Rallis India Ltd.	100.00
23. Copper Oxychloride	Travan Cochin	100.00
24. Dithane	Indofil	100.00
25. Ziram	Ciba-Geigy	100.00
26. Nickel Chloride	Bharat Pulverising	100.00
27. Pheny Mercury Acetate	Excel Ind.	66.67
28. MEMC	Excel Ind.	79.12
29. Carbendazim (Bavistin)	BASF	47.42
30. Calixin	BASF	100.00
31. 2,4-D	Atul	60.84
32. Isoproturon	Triti-Chemi.Ltd.	56.67
33. Paraquat (Gramoxone)	I.E.L. (ACCI, KITS)	100.00
34. Dalapon	HICO	100.00
35. Basalin	BASF	100.00
36. Diuron	Agromore	100.00
37. Ratofin	Agromore	100.00
38. Zinc Phosphide	Excel India	51.25
39. Aluminium Phosphide	United Phos P.Ltd.	54.05
40. Methyl Bromide	Tata Chemicals	100.00
41. Ethylene Dibromide	United Phosphorus (Shriffs)	100.00
42. Plant Growth Regulants	BASF (Cycocil/Lihocin)	100.00

Source: Market Intermediaries.

TABLE 6. MARKET CONCENTRATION IN TOTAL PRODUCTION OF TECHNICAL GRADE MATERIALS (COMPANY-WISE IN TERMS OF QTY. PRODUCED) (1985-86)

Company	Production of Technical Grade Materials (tonnes)	% to Total Production
1. Kanoria Chemicals	14,993	27.3
2. Hindustan Insecticides Ltd. (HIL)	9,121	16.6
3. Tata Chemicals	6,787	12.4
4. Excel	2,390	4.4
5. Indofil	2,324	4.2
6. Ciba-Geigy	2,309	4.2
7. Bayer	2,137	3.9
8. Mico-Farm	1,429	2.6
9. Cynamid	1,343	2.4
10. Rallis India	1,281	2.3
Total of above 10 Companies	44,114	80.3
Other 25 Companies	10,804	19.7
Total of all 35 Companies	54,918	100.0

Source: Compiled from the data received from Monitoring and Evaluation (Chem) Cell, Department of Chemicals and Petrochemicals, Ministry of Industry, Govt. of India, New Delhi.

TABLE 7. MARKET CONCENTRATION IN TOTAL PRODUCTION OF TECHNICAL GRADE MATERIALS (1985-1986)
(COMPANY-WISE IN TERMS OF VALUE OF PRODUCTION)

	Name of Company	Production of Technical Grade Materials ('000 Rs.)	% of Total Production
1.	Ciba-Geigy	335,171	9.82
2.	Excel Industry	300,533	8.80
3.	HIL	286,572	8.40
4.	Bayer	232,350	6.80
5.	NOCIL,Bombay	231,830	6.79
6.	Rallis India	193,830	5.68
7.	United Phos. Pvt.Ltd.	144,992	4.25
8.	Bharat Pulverising	142,400	4.17
9.	Sandoz India	127,400	3.73
10.	Indofil Chemicals	124,900	3.66
11.	Gujarat Insecticides	120,000	3.52
12.	Kanoria Chemicals	113,946	3.34
13.	I.E.I. (ACCI, KLTS)	113,100	3.31
14.	Cynamid	100,025	2.93
15.	Sudarshan Chemicals	96,350	2.80
16.	Searle India Ltd.	95,550	2.82
17.	Triti Chem.Ltd.	77,765	2.28
18.	Indian Explosives Ltd. (ACCI)	62,400	1.83
19.	Ghardha Chemicals	59,456	1.74
20.	Tata Chemicals	56,755	1.66
21.	Pesticides India	51,484	1.52
22.	FICOM Organics	48,920	1.43
23.	Khatau-Junkar	47,520	1.39
24.	B.A.S.F.	40,125	1.17
25.	Travan Cochin	39,465	1.16
26.	Atul	38,380	1.12
27.	Shaw Wallace	34,174	1.00
28.	Volrho Ltd. (Medak)	23,958	0.70
29.	Agromore	20,136	0.59
30.	Gujarat Distilleries	19,304	0.56
31.	Mico-Farm	11,019	0.33
32.	J.K.BM	9,675	0.28
33.	Paushak	7,650	0.22
34.	IFFCO	6,360	0.18
35.	H.I.C.O.	84	0.02
	Total of first 20 Companies	3,015,325	88.33
	Other 15 Companies	398,233	11.67
	Total Production (all 35 Companies)	3,413,558	100.00

Source: As in Table 6

Some Observations on the Operations of Technical Grade Material Manufacturers

(a) Almost all the companies have been established with foreign financial and technical collaborations. Not a single pesticide has been developed in India. The time lag between the development of technical grade material and its introduction in India is about five years. (b) Most companies started with the production of dyestuffs, pharmaceuticals and other products. Later, they took up the production of technical grade pesticides. (c) The cost of a plant to produce technical grade pesticides varies from Rs 30 to Rs 40 million. Once a product becomes obsolete, the existing plant can be converted with minor changes to produce another technical grade pesticide. (d) The product range of company is 2 to 6 because the cost of the plant to produce a technical pesticides is very high. A plant which is used to produce one technical pesticide cannot be used to produce another technical pesticide without making changes in the plant. (e) The utilization of installed capacity to produce technical grade pesticides ranges from 20.0 to 60.0 per cent. (f) The average raw materials cost,

processing cost, and gross profit is about 60.5 per cent, 20.5 per cent, 19.0 per cent of the price per kg of technical grade pesticides, respectively. (g) Some companies produce intermediate products (raw-material to produce technical pesticides) and also use them as raw materials to produce technical pesticides. (h) Most technical grade pesticides manufacturers also formulate pesticides.

Formulators

Pesticides are originally manufactured in a concentrated form unsuitable for field use. Formulation is a process whereby pesticides are put into a form in which they can be applied to the plants or target organisms to achieve a safe and convenient effective economic use. The commonly used formulations are of two kinds: (a) Formulations applied directly: They are dusts, granules (low content of active ingradient), ultra-low-volume (low volume solution especially prepared for application by aircraft or ground equipment) and fumigants (which release gas after coming in contract with moisture). (b) Formulations applied after dilution with water: They are soluble concentrates (SC), emulsifiable concentrates (EC), and Wettable powders (WP). The total number of registered formulators is about 800. Out of them, 160 are associated formulators and the rest are non- associated formulators. Associated formulators are associated with technical grade material manufacturers (Figure 1). They get credit and raw materials easily even in peak season from technical grade materials manufacturers with whom they are associated. Besides, their products get promotional help and market support from the big companies. The non-associated formulators are totally independent units. They do not have any tie-up with technical grade material manufacturers.

Some Observations on the Operations of Formulators

(a) No formulator produces all the registered products. Similarly, all the registered products are not necessarily produced every year. About 29.5 per cent of the registered products are produced by the formulators based in Gujarat and 33.0 per cent by those based in Andhra Pradesh. (b) Per unit fixed investment for the Gujarat formulators works out to about Rs. 1.12 million and for the Andhra Pradesh formulators about Rs 0.87 million. The average ratio of working capital to total fixed investment is 9.19 for Gujarat formulators and 3.7 for Andhra Pradesh formulators. The difference is because the business of pesticides is on cash basis in Andhra Pradesh while it is on credit basis in Gujarat. (c) In this industry, break-even point is reached at 20 per cent utilization of the installed capacity while 35 per cent utilization is gives a reasonable return on investment. The average actual utilization of installed capacity is about 17 per cent. (d) Installed capacity of Plants for pesticides formulations is far more than required assuming that demand will only double in the near future. The variations between the installation costs of high and low capacity plants are not linear and there are marked scale economies; that is the reason of prevailing excess capacity. (e) One litre packs are most commonly adopted by Gujarat and Andhra Pradesh formulators. (f) The net return on total investment is 17.4 per cent for Gujarat formulators and 11.3 per cent for Andhra Pradesh formulators. The difference is because the pesticides market in Andhra Pradesh is more competitive than that in Gujarat. (g) The average rate of commission given by the formulators to distributors is about 15.5 per cent in both the states. (h) Almost all formulators get credit from technical grade materials manufacturers in any season. The rate of cash discount on purchases of technical grade pesticides is 1.5 per cent a month. (i) Most of the formulators provide credit to their distributors for 30 to 60 days. The rate of cash discount is 1.5 per cent a month.

Dealers

Formulated products reach the users, farmers and households, through wholesalers/distributors and retailers. Many local formulators sell their products to distributors and also to retailers in which case they pass on a small percentage of their profits from direct sales to retailers to the

concerned area distributors. Retailing of pesticides is done by the state departments, cooperatives, and private dealers. According to the Report of the Seventh Plan Working Group on Pesticides, there were in, 1983-84, 77,080 distribution points for pesticides, of which 4,973 were operated by state departments, 1,623 by cooperatives, and 55,870 by private traders. About half of the sale points are located in the five states of Andhra Pradesh, Tamil Nadu, Uttar Pradesh, Gujarat and West Bengal.

Some Observations on the Dealers

(a) Almost all distributors of pesticides also operate retail outlets. (b) In Gujarat, about 30 per cent and in Andhra Pradesh about 60 per cent of the dealers exclusively deal in pesticides. (c) The average sales of pesticides and working capital invested by Andhra Pradesh dealers are much higher than those of the Gujarat dealers. (d) The rate of return on the investment in working capital is about 29.7 per cent in the case of the Gujarat dealers and 23.5 per cent in the case of the Andhra Pradesh dealers. (e) One litre packing size is in high demand and accounts for around 31 per cent of the sales of liquid pesticides in Gujarat and 56 per cent of sales in Andhra Pradesh. (f) Variation in the selling price of pesticides per litre between two extreme packing sizes of 500 gms and 5 kgs respectively ranges from 3 to 7 per cent. A part of the variation is because of difference in cost of different sized packing. (g) The rate of commission received by the distributors varies from 5 to 25 per cent; small and local formulators give between 20 and 25 per cent commission while established formulators like Searle, Rallis-India, and Ciba-Geigy give only 3 to 7.5 per cent commision to their distributors. Similarly, the rate of commission given by distributors to dealers varies a great deal; from 2.5 to 18.0 per cent. Generally, this is about 5 per cent less in Gujarat than in Andhra Pradesh.

TABLE 8. CONSUMPTION OF PESTICIDES FOR 1984-85

(Rs million)

Crop/State	Estimated Pesticides Consumption	Percentage to Total Pesticides Consumption
Cropwise		
Cotton	2,472.13	44.5
Paddy	1,272.05	22.8
Jowar	495.40	8.9
Wheat	354.18	6.4
Fruits & Vegetables	387.38	7.0
Arhar	155.20	2.8
Groundnut	136.84	2.5
Sub Total	5,272.74	94.9
Other Crops	283.63	5.1
Total	5,556.37	100.0
Statewise		
Andhra Pradesh	1,865.03	33.6
Karnataka	899.73	16.2
Gujarat	842.71	15.2
Punjab	633.91	11.4
Maharashtra	285.24	5.1
Sub Total	4,526.62	81.5
Other States	1,029.75	18.5
Total	5,556.37	100.0

Note: Statewise and cropwise consumption of pesticides is estimated on the basis of collected data on per hectare use of pesticides for different crops in different states and the area under cultivation of different crops in different states. The source of data is the Directorate of Economics and Statistics, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India, New Delhi.

Share of Constituents in Total Turnover

The total turnover of pesticides in India at the final consumption level is about Rs 5,556 million (1984-85). Of this, the technical grade material manufacturers account for Rs 3,140 million, the formulators for Rs 667 million, the distributors for Rs 275 million, and the retail outlets account for Rs 555 million. Government realized about Rs 649 million in excise duties. In practice, some constituents perform more than one function; for instance, most of the technical grade material manufacturers also own formulating facilities and most of the distributors and wholesalers also maintain retail outlets in their premises. Thus, the shares of each constituent need to be adjusted for such overlapping functions.

Pesticides use in Agriculture

Till 1971, the major production of pesticides was used for non-agricultural purposes. Since then, more than 58 per cent of the production is being used in the agricultural sector. The value of pesticides consumed in agricultural sector was about Rs 5,556.37 million in 1984-85 (Table 8). The Table gives its cropwise and statewise distribution. Cotton and paddy accounted for 44.5 and 22.8 per cent respectively while jowar, fruits and vegetables, wheat, arhar and groundnut for 8.9 per cent, 7.0 per cent, 6.0 per cent, 2.8 per cent, and 2.5 per cent, respectively. Statewise, Andhra Pradesh, Karnataka, Gujarat, Punjab, and Maharashtra accounted for 33.6 per cent, 15.2 per cent, 11.4 per cent and 5.1 per cent respectively. The five states together accounted for about 81.5% of the consumption in the country.

REGULATARY FRAMEWORK

Insecticides Act 1968

Though the Act is called the Insecticides Act, it is applicable to all pesticides. Its main objective is to regulate the import, manufacture, sale, transport, distribution, and use of insecticides, etc., to prevent risk to human beings, animals, etc. The Act, along with the rules framed under it, was implemented from 1st August 1971. The Act provides for compulsory registration of pesticides at the central level, issue of license for manufacture, formulation, and sale at state level, inter-departmental/ ministerial/ organizational coordination of matters arising out of the implementation of the Act, establishment of enforcement machinery like insecticide analysts and inspectors, etc [Aggarwala, 1979]. Two statutory bodies namely, the Central Insecticides Board (CIB) and the Registration Committee have been constituted.

Central Insecticides Board

The Central Insecticides Board is headed by the Director General of Health Services and has 28 other members representing various disciplines including agriculture, plant protection, health, forest, transport and industry. The Board performs advisory functions mainly relating to risk to human beings and animals involved in the manufacture, sale, storage, transport, distribution, and use of insecticides and safety measures necessary.

Registration Committee

The Registration Committee consists of a Chairman and not more than five members including the Drug Controller of India and the Plant Protection Adviser to the Government. The main functions of the Committee are to register insecticides after scrutinizing their formula, to verify the claims made by the importers/ manufacturers as regards their efficacy and safety to human beings and animals, and to specify the precautions to be taken.

Registration Procedure

The registration procedure is divided into four parts: (1) Import of Sample Quantity: Anybody desiring to import a sample quantity of insecticides for test and trial on bio-efficacy, toxicity, etc., has also to obtain permission from the Registration Committee. The chemicals which are not included in the schedule to the Insecticides Act are beyond the purview of this Act. In such cases, the Plant Protection Adviser to the Government is empowered to grant permission.

(2) Inclusion in the Schedule to the Act: Any pesticide which is to be imported or manufactured for use has to be first included in the schedule to the Act by the Central Insecticides Board. Any person desiring any chemical to be included in the schedule is to furnish information to the CIB on the following parameters: (i) Chemical identity and Physio-Chemical properties of the insecticides along with technical bulletin from the principal manufacturer. (ii) Bio-efficacy data on the product to prove that it is a potential insecticide. (iii) The registration status of the product in other countries including the country of its origin. (iv) The status of the insecticides as per Pesticides Manual, Pesticides Index or any other standard pesticides bibliographical book. (v) Detailed information on mammalian toxicity of the insecticide. (vi) Any supporting evidence that the need for the product has been substantiated by any Central/State agricultural university. After an insecticide has been included in the schedule, anybody can apply for registration of the same to the registration committee giving sufficient reasons and the Registration Committee can grant permission on the merits of the case.

(3) Provisional Registration: Any person desiring to import or manufacture any insecticide may apply to the Registration Committee for the registration of such insecticide and there shall be a separate application for each such insecticide [FAO, 1985]. On receipt of such application for registration, the Committee may make such enquiry as it deems fit to satisfy itself that the insecticide confirms to the norms made by the importer or manufacturer, as the case may be, and register the insecticide, allot a registration number thereof and issue a certificate of registration . Where the insecticide is being introduced for the first time, the registration is provisional for a period of two years on such conditions as may be specified by the Registration Committee.

(4) Regular Registration: After the expiry of provisional registration, the applicant is supposed to come for regular registration under section 9 (3) of the Act fulfilling the conditions laid down on the certificate of provisional registration and with all the data on different parameters as specified by the Committee. The important parameters of the data requirements for registration of insecticides under section 9 (3) of the Act are given in Table 9. These requirements are only guidelines and not a must in all the cases and vary from formulation to formulation and chemical to chemical. The Registration Committee is empowered to regulate its own procedure and conduct the business to arrive at a conclusion regarding the safety and efficacy of the product.

TABLE 9. IMPORTANT PARAMETERS OF THE DATA REQUIREMENT FOR REGISTRATION OF INSECTICIDES UNDER SECTION 9(3) OF THE ACT

I. CHEMISTRY: (1). Source of supply. (2). Chemical composition (3). Specifications. (4). Analytical data. (5). Shelf life data (6). Methods of analysis.

II. PACKAGING AND LABELLING: (1). Type of packaging. (2). Manner of packaging. (3). Specifications for primary package. (4). Specifications for secondary package. (5). Specifications for transportation package. (6). Manner of labelling. (7). Instructions for storage and use, etc. (8). Information regarding disposal of used packages.

III.BIO-EFFICACY AND RESIDUES DATA: (1). Effectiveness. (2). Phytotoxicity. (3). Translocation within the plant or animal being treated. (4). Persistence in soil. (5). Persistence in water. (6). Persistence in plants. (7). Compatibility with other chemicals. (8). Direction concerning the dosage. (9). Time of application. (10). Type of application. (11). Equipment. (12). Manner in which the insecticide is to be used. (13). Methods of sampling for residue tests. (14). Residue analysis in food and feeding stuffs. (15). Residue analysis in water. (16). Residue analysis in soil. (17). Residue analysis in wild life. (18). Expected residue level in edible crop and soil. (19). Workers hazards after treatment.

IV. SAFETY/TOXICITY DATA REQUIREMENTS: (1). Acute oral toxicity studies. (2). Acute dermal toxicity studies. (3). Acute inhalation toxicity studies. (4). Primary skin irritation. (5). Irritation of mucous membrane. (6). Sub-acute oral toxicity studies. (7). Sub-acute dermal toxicity studies. (8). Sub-acute inhalation toxicity studies. (9). Neurotoxicity. (10). Effects of reproduction. (11). Teretogenicity. (12). Carcinogenicity. (13). Synergism and potentiation. (14). Metabolism. (15). Mutagenicity. (16). Toxicity to birds. (17). Toxicity to fish. (18). Toxicity to other beneficial insects. (19). Toxicity to livestock. (20). Signs of poisoning, diagnosis of poisoning, chemical tests and records on poisoning cases. (21). Treatment of poisoning. (22). First aid measures. (23). Medical treatment. (24). Human and cattle exposure studies.

Source: *Critical Review of Registration Procedure-Role of Central Insecticides Boards*, by Dr.D.Kanago, Sectt. of Registration Committee & Central Insecticides Board, Department of Plant Protection, Quarantine and Storage, Faridabad.

Where an insecticide has already been registered by some one, any other person desiring to import or manufacture the same insecticide has to make an application. In this case, the applicant need not submit all the data on biological parameters if he establishes the chemical equivalence with the earlier registered product. However, he has to provide information as indicated in Table 10 to satisfy the Registration Committee that the chemical applied for is identical with the earlier registered one. A registration number is allotted and a certificate of registration given on the same conditions on which the insecticide was originally registered.

TABLE 10. THE DATA TO REGISTER A PRODUCT WHICH IS ALREADY REGISTERED BY SOMEONE

I. IMPORT OF TECHNICAL GRADE MATERIAL (i) Minimum purity and the source of principal supplier along with associated manufacturing information. (ii) Specification (iii) Analytical test report (from principal) (iv) Method of analysis (v) Shelf life claim (vi) Packaging and labelling (a) Proposed labels; (b) Proposed leaflets; and (c) Manner of packaging

II. IMPORT OF FORMULATIONS (i) Complete chemical composition (ii) Specification (iii) Analytical test report (from principal) (iv) Shelf life claim (v) Method of analysis (vi) Information regarding manner of packaging, labels and leaflets

III. INDIGENOUS MANUFACTURE OF TECHNICAL GRADE MATERIAL (i) Chemical composition both purity and impurities (ii) Specification (iii) Method of analysis (iv) Analytical Report (v) Raw material used, their source and the reaction steps involved during the process of manufacture. (vi) Shelf life claim (vii) Packaging and labelling

IV. INDIGENOUS MANUFACTURE OF FORMULATIONS (i) Complete chemical composition (ii) Specification (iii) Analytical test report (iv) Methods of analysis (v) Shelf life claim (vi) Process of formulation (vii) Packaging and labelling requirements.

Source: *Critical Review of Registration Procedure-Role of Central Insecticides Board* by Dr. D. Kanuango, Sectt. of Registration Committee & Central Insecticides Board, Dept. of Plant Protection, Quarantine and Storage, Faridabad.

Licensing Procedure

Under section 13 of the Act, any person who wants to manufacture, stock, sell, transport or to undertake commercial pest control operations with the use of pesticides is required to make an application for grant of licence. Licensing officers are appointed by the state governments. The licence is valid for a defined period and has to be renewed periodically. The licensing officers have power to grant a licence either unconditionally or subject to certain conditions. In case the grant of a licence is to be refused, the applicant must be given a reasonable opportunity of being heard. The same procedure applies if the licensing officer refuses to renew a licence. An appeal lies against the decision of the licensing officer to the appellate authority within 30 days from the date the decision is communicated to him.

Enforcement of Legal Provisions

The Act is enforced through the licensing officer of the states and through the insecticides inspectors and insecticide analysts representing either the Central or State Government. The licensing officers issue licences to manufacture, sell, stock and distribute insecticides while insecticides inspectors visit the premises to ensure compliance with the Act. The sample drawn by the inspectors are analyzed by the insecticides analysis.

The Act authorizes the Central and State Governments to appoint persons with technical qualifications prescribed for this purposes as insecticide inspectors. The inspectors have extensive powers (a) to enter and search any premises if there is a reasonable cause to believe that provisions of the Act and the rules made there under are not being complied with or any offence has been or is being committed under this Act; (b) to ask for the production of documents kept by a manufacturer or distributor, carrier or dealers; (c) to stop the distribution, sale, or use of an insecticide which is being sold or distributed in contravention of the provisions of the Act or rules made there under; and (d) to take samples according to the procedure laid down in the Act for being sent to insecticide analysts. If he seizes the stock of insecticides he has to inform the magistrate and take his orders regarding their custody. The same procedure is to be followed in the case of seizure of documents and records.

The Central and State Governments have been given the power to prohibit sale, distribution or use of an insecticide for reasons of public safety

under Section 27 of the Act if it is considered expedient and to take immediate action for a period not exceeding 60 days (extending by 30 days) pending investigation into the matter. If as a result of the investigation or receipt of report from the State Government, the Central Government is satisfied, after consultation with the Registration Committee, that the use of the insecticide is likely to cause risk to human beings or animals, it may pass appropriate orders including an order refusing to register the insecticide or cancelling the certificate of registration.

Prevention of Food Adulteration Act

Under Section 2 of this Act, an article of food is deemed to be altered if, *inter alia*, it contains any poisonous or other ingredient which renders it injurious to health. Part XIV of the prevention of Food Adulteration Rules 1955 deals with the use of insecticides and pesticides. It is laid down that no insecticide shall be used directly on articles of food if it exceeds the tolerance limit prescribed under Rule 65(2) of the PFA Rules. Even though 123 pesticides have been registered under the Insecticides Act, maximum residue limits (MRL) have been fixed for 31 pesticides only. These include MRLs for vegetables, food grains, fruits, milk and meat. However, MRLs have not been fixed for animal feed or fodder.

Several studies conducted in India indicate disturbingly high residues in bovine milk, butter, deshi ghee and instant foods. Consequently it becomes imperative to lay down tolerance limits in respect of animal feed and fodder also. In principle, it is possible to institute prosecutions for distribution and sale of food articles which contain residues of pesticides above the tolerance limits prescribed under the Act. However, there seems to be a total lack of information on the part of the food inspectors and other enforcement staff with regard to the magnitude of the problem and deleterious effect of pesticides. According to comparative analysis conducted by experts only 2.5 per cent of samples of food articles have been found free of residues in India as against 80 per cent in the USA. Residue levels have been found higher than the prescribed limits in respect of more than 72 per cent as against 18 to 19 per cent in the USA. Thus, the PFA Act has been practically ineffective in this respect.

Indian Factories Act

Under the Factories (Amendment) Act 1987, the first schedule contains the list of industries involving hazardous processes. Insecticide, fungicide and other pesticide industries are listed as industries involving hazardous processes. Under Section 41-A of the Act, an application for grant of permission for initial location of a factory involving hazardous process or for expansion is scrutinized by the Site Appraisal Committee before approval is granted by the State Government. If the State Government grants approval, it is not necessary for the applicant to obtain further approval from the Central Board or the State Board under the Water (Prevention and Control of Pollution) Act, 1974, and Air (Prevention and Control of Pollution) Act, 1981. Under Section 41-B, the occupier of such a factory is required to disclose information regarding dangers including health hazards and the measures to overcome them. Such hazards can be to the workers employed in the factory, other authorities, and general public. The second schedule of the Act prescribes maximum permissible threshold limits of exposure of chemicals and toxic substances, involving the handling of and working with hazardous substances. Contravention of the provisions contained in Sections 41-B, 41-C and 41-H may be punished with imprisonment for a term which extends to seven years and fine up to Rs 2 lakh. These amendments have fulfilled the long felt need of protecting the workers in factories who are engaged in the manufacture, transportation, storage and other processes of hazardous substances.

Allocation of Technical Grade Pesticides to the State Governments and Union Territories

In 1974, the Central Government introduced a scheme to allocate 50 per cent of the technical grade pesticides produced by the indigenous units to various state governments on the basis of their previous year's offtake and projected demand for the current year. The main objective was to distribute the available pesticides at reasonable prices in different regions of the country such that

the price structure and availability position remained stable. The scheme initially covered BHC, DDT, malathion, parathion, fenitrothion and dimethoate. Later, it also covered carbayl. But, after the Bhopal gas accident in December 1984, the production of carbaryl was stopped and hence endosulfan was covered under this scheme.

In 1976, because of improved supplies, the procedure to allocate the technical grade pesticides to the state governments and union territories was revised. According to the revised procedure, the pesticides were allocated on the basis of production as conveyed by the Director General of Technical Development, quantity requirements for the quarter as submitted by the state governments and union territories, annual demand of those states/ union territories from where no demand for the quarter was received, and the existing formulation facility in the state/union territories. If some of the states/union territories have no formulation facilities, they would make use of the formulation facilities of the neighbouring states.

The small-scale pesticides formulators were not satisfied. From time to time they represented through their associations, to the Department of Chemicals and Petrochemicals, that SSI units were unable to get the supply of technical grade pesticides at reasonable prices and in time. The allocations were made by the Department but the supplies were not in time because the supplies came from the manufacturers of technical grade material. Consequently, the matter was further examined and, finally, a revised procedure was issued in March 1987 (Table 11).

TABLE 11. REVISED PROCEDURE (GUIDELINES) FOR ALLOCATING 50 PER CENT OF THE TECHNICAL GRADE PESTICIDES TO THE STATES AND UNION TERRITORIES

(a) Non-associated formulators desirous of obtaining technical grade material from a manufacturer should indent for their requirement on quarterly basis at least two months in advance of the quarter for material that is required. This would only give an indication and not a commitment which would only be on issuing of letter of credit.
(b) Their indent will indicate the phasing of requirement of the requisite material in the appropriate size packing offered by the manufacturer and a list of prices to be circulated by the manufacturer at least four months in advance of the ensuing quarter and which price should remain firm for the entire quarter of supply.
(c) Formulators should deposit at least 10% of payments for quantities required as per indent at least 30 days in advance of delivery to make it a firm commitment.
(d) In view of the commitment to supply and in order to plan production as per the commitments, it is necessary that formulators should deposit 15 days in advance the full value of the consignment either by cash or by confirmed irrevocable letter of credit.
(e) Revolving letters of credit can be used for subsequent quarters provided there is a mutual agreement between the manufacturer and the formulators.
(f) Manufacturers of technical grade material will adhere to the deadline for delivery of the contracted material for which they have accepted firm commitment.
(g) In case of heavy indents backed by firm commitments, the manufacturer will ensure equitable pro rata allotments to the indentors.
(h) The manufacturers would make available 50% of the actual monthly production to non-associated formulators. The formulators would lift the stock during off-season also and build up a stock for the peak season.
(i) The manufacturers will pay interest at bank rates on advance payments made by the formulator for any period of delay in despatch.
(j) Sales price to be charged by the manufacturer should be that national transfer price is based on internal costing of the company.

Import of Pesticides under OGL

In 1988-89, Government of India decided to allow import of 15 technical grade pesticides under the Open General Licence (OGL) policy. They were monocrotophos, methyl parathion, dimethoate, BHC, malathion, endosulfan, phorate, dithane, zineb, maneb, thiram, 2,4-D, butachlor, banthiocarb and isoproturon. The import duty on 15 them was reduced from 105 to 70 per cent. The aim was to make them available at lower prices to the farmers. Under the OGL policy, only the Indian Farmers Fertilizers Cooperative (IFFCO), Krishak Bharati Cooperative (KRIBCO) and State Agro-Industries corporations were allowed to import these pesticides. As per the procedure, the three organizations had to get licence/registration from the Central Insecticides Board (CIB) to import these 15 technical grade pesticides under OGL policy. The CIB, while registering the products specifies sources in the international market from where

they could import the technical grade pesticides. From March 1989, the Government of India has raised the import duty on three widely used pesticides, namely, monocrotophos, butachlor and methyl parathions from 70 to 105 per cent. This has resulted in the rise in prices of these technical grade pesticides.

Legal Framework for Regulation of Pesticides Industry

The most important method to control pesticides availability and use is through registration of technical grade material manufacture and formulations. Registration is the process of evaluation and acceptance by the Registration Committee of documentation supports and claims for efficacy and safety made on behalf of a proposed pesticides manufacturer. The objectives of registration is to ensure that the pesticides are effective and efficient for the purposes claimed and will not harm the consumers of the treated foods and the natural environment. The decision to restrict or ban a particular product is made after toxicity is assessed and its current use pattern and the availability of less toxic and economically comparable substitutes are evaluated. In October 1989, Government of India banned the use of DDT in agriculture. However, DDT would continue to be used in the national health programme, subject to a limit of 10,000 tonnes per annum. The manufacturers have been directed that no product of DDT should be manufactured or imported. The regulatory practices and enforcement measures in India are summarized in Table 12 [Asian Development Bank, 1987].

TABLE 12. SUMMARY OF PESTICIDES REGULATORY PRACTICES AND ENFORCEMENT MEASURES IN INDIA

A. Regulatory Scheme:	
1. Pesticide legislation/registration	The Insecticides Act, 1968 (Act No. 46 of 1968); The Insecticides Rules 1971
2. Administrative authority	Ministry of Agriculture
3. Registration and data requirements compared to FAO guidelines	Requires additional local toxicology efficacy residue data
4. Labelling of pesticides ref. FAO guidelines	Own toxicity limits imposed for label purposes
5. Classification of pesticides based on WHO	Modified toxicity limits
6. Phased registration operated	Yes, Provisional-two years, full
7. Average time requirement for registration	Six months to three years
8. Number of products registered	
- Active ingredients	123
- Formulators	Not available
9. Control of imports of pesticides	Mandatory
10. Control of manufacture, formulation, sale and use of pesticides	Mandatory
11. Controls on use of persistent/toxic products	Optional; very high use of DDT and BHC
B. Enforcement of Regulations:	
1. Products inspected for quality -Production -Post-distribution	Monitoring by regulatory agency/self inspection by private sector Monitoring by regulatory agency
2. Registration conditions enforced through inspection programme	Occasional
3. Enforcement of use directions	Minimal
C. Applicator Safety and Human Exposure:	
1. Applicator/dealer training programme	Regular
2. Extent of farmer training in the safe use of pesticides	Occasional
3. Medical/first aid treatment facilities for pesticides poisoning	Minimal
D. Monitoring Activities:	
1. Monitoring of residues on food and horticultural crops	Regular
2. Monitoring of residues in the environment	Occasional
3. Monitoring of pesticides formulators at dealers and distributors	Occasional

Source: *Handbook on the Use of Pesticides in the Asia-Pacific Region*, November 1987, Asian Development Bank, Manila, Philippines, Pp. 72-79.

PROBLEMS FACED BY VARIOUS CONSTITUENTS OF PESTICIDES INDUSTRY

Problems Faced by Technical Grade Pesticides Manufacturers

These are: (a) Registration procedure is very lengthy and costly. Once the company has established its data for the commercial use of various formulations and products, there follows the process of registration whereby the products are approved by the relevant government agency for manufacture and sale. There is no protection of registration data for those who generate it. This data bank is available to other competitors without any investment soon after registration is granted to technical grade material. This leaves no time for reaping the pay-off from the investment made in generating the data. (b) The demand for pesticides is highly seasonal and so capacity utilization is low. (c) The pesticide industry is a very high-risk industry. The risks arise in three ways: (i) from failure of monsoon and hence of crops; (ii) from deterioration in the product effectiveness due to regular use in the same form; and (iii) from obsolescence following the development of new more effective, or more cost effective, products. (d) According to Government regulation, 50 per cent of the technical grade material produced in the country is to be allocated to various State Governments by the Central Government. The State Government further allot the quantity to the formulators located within the State,. But in off-season, the formulators do not lift the quantity allotted to them, so the technical grade material manufacturers have to bear the inventory cost. (e) Import duty on intermediates is about 147 per cent which is very high. (f) Excise duty is imposed on intermediates which are produced and used by the company itself without any transaction taking place. (g) In the case of some technical pesticides, for example, butachlor (T), the imported variety is cheaper than the locally produced variety. In this case, it is very difficult for the Indian companies to compete in the market in their own country. (h) From March 1989, the Government of India has raised the import duty on three widely used pesticides, namely, monocrotophos, butachlor and methyl parathion technicals from 70 to 105 per cent. This may make import of these pesticides unviable. The demand for monocrotophos, butachlor and methyl parathion technical is estimated to be 4,000 tonnes, 2,500 tonnes and 3,000 tonnes for 1989-90, respectively. Against this, the anticipated indigenous production in 1989-90 of monocrotophos, butachlor and methyl parathion technical is 3,000 tonnes, 1,000 tonnes and 2,500 tonnes, respectively. No wonder that, within no time of Government's decision to raise the import duty, the domestic manufacturers raised the prices of these technical grade pesticides. For example, the price of monocrotophos technical was raised from Rs. 215 to Rs. 230 per Kg. On the other hand, some manufacturers have withdrawn discount and credit facilities.

Problems Faced by the Formulators

These are: (a) Non-associated formulators do not get credit from technical grade material manufacturers without bank guarantee. Most technical grade material manufacturers are also formulators or have associated formulators. The associated formulators get credit from technical grade pesticides manufacturers for about three months. Because of this, associated formulators sell their products on credit. Sometimes there is also a price difference between associated and non-associated formulators. In this situation it is very difficult for non-associated formulators to survive in the market. (b) There is often a shortage of technical grade pesticides in the peak season. For example, monocrotophos, phosphomidon, DDVP and dimethoate are technical materials in short supply in peak season. Sometimes, solvent materials like orthozxylene, cy clonhexanone-C-IX, etc. are in short supply in peak season. The formulators are not able to buy these pesticides in off-season and stock them, as they are costly and formulators do not get credit on the purchase of these raw materials for longer period. (c) Formulators believe that technical grade pesticides manufacturers create short supply of some technical grade pesticides in peak season so that they themselves can formulate more and more products and sell in the market. This way they try to reduce competition and create monopoly in the market during the peak season. (d) The tax

structure is not uniform throughout the country. This creates problems in fixing prices of raw materials and hence of formulated products. The units which are located in Union Territories do not have to pay sales tax. Octroi is also not uniform. As indicated by the formulators interviewed from Gujarat, units located in Gujarat have to pay Octroi and other taxes amounting to about 15 per cent while the units which are located in Delhi do not have to pay these taxes. Hence, their prices are lower. Gujarat has about six municipal corporations. They purchase insecticides for their use against malaria and other diseases. The prices quoted by the units in Gujarat are comparatively higher than those quoted by units located in the Union Territories. Incidentally, in this case, Government of Gujarat also loses revenue (sales tax). (e) Ban on import, in 1982-83, of some technical grade pesticides has created a monopoly situation for Indian manufacturers. For example, a technical grade material, monocrotophos, was produced by NOCIL and its import was also allowed. At that time, the price of monocrotophos was about Rs. 180 per Kg. After the ban on its import, the price went up to Rs. 200 per Kg. and today it is about Rs. 222 per Kg. This was also the case of methyl parathion. (f) Electricity rates are not uniform in the country. They are high in Gujarat. This creates a difference in the cost of formulation of pesticides. (g) There is intense competition in the formulated pesticides market. Therefore, the newer and local formulators produce sub-standard quality products and keep the price low to survive in the market. This affects the volume of sales of the quality formulators. (h) The shelf life of formulated products is short (one year). Due to stamping of the date of expiry of formulated products, formulators do not keep stock of formulated products. They cannot predict the demand for their products, as it is closely linked with rainfall and other natural factors which are not predictable. Therefore, capacity use is constrained. (i) Registration procedure is very lengthy, tedious and takes too much time. Sometimes, it takes two years to get registration for formulation of products. (j) Most technical grade pesticides manufacturers also formulate pesticides and sell them in the market. Their intention is to kill the competition from formulators and create monopoly for their products. For example, fenthion is a technical grade pesticide produced by Bayer India only. Of the eight selected formulators, one formulator asked Bayer India for this technical pesticide. Bayer India asked a formulator (interviewed by us) to pay at the rate of Rs. 283 per Kg. in advance and delivery would be made after three months. The total cost of formulated fenthion for him was Rs. 353 per litre. When the Government of India invited tenders, this formulator quoted RS. 375 per litre while Bayer India quoted Rs. 315. Thus, the formulator could not compete with Bayer India. (k) Formulators from Andhra Pradesh indicated that, there is a rule that each formulator should have his own testing laboratory with modern equipment like gas liquid chromograph. This would mean an investment of about Rs 3 lakh which many small formulators could ill afford. (l) There was no encouragement from Government to the small formulators. For example, the Government purchased pesticides from big companies like, Ciba, Bayer, etc., and not from small formulators, for distribution to farmers at subsidized rates under some schemes. (m) The experience of formulators from Guntur indicated that they are informed about the technical grade pesticides allotted to them in the off-season and not in the peak season. Hence, the 50 per cent allocation of technical grade material scheme is not helpful to the formulators. (n) Manufacturing of duplicate products is quite common in Guntur district and the original formulators face many problems because of this. (o) As indicated by one selected formulator, to get registration to formulate a particular pesticide, one has to apply with data related to the biofecacy test of that product. As such, he has to produce 100 ml/100 gram sample and then send it to the recognized laboratory for analysis. Thus, he has to establish a complete unit to produce the sample and then apply for registration. Registration takes one to two years, which means he has to keep his machinery idle during this period. (p) There is much harassment from pesticide inspectors in the name of quality control. (q) Under the OGL policy recently introduced, IFFCO, KRIBCO and State Agro Industries Corporations, can import 15 specified technical

grade pesticides. As per the procedural requirement, import of these 15 pesticides needs registration from the CIB . The CIB while registering the product specifies the sources in the international market from whom only these technical pesticides can be imported. According to the experience of one of the three agencies, suppliers as specified by the CIB have not been able to fulfil their commitments either in terms of volume or in terms of prices. For example, the price of technical monocroto phos available from Ciba-Geigy, Switzerland, before the OGL policy announcement, ranged from US $4.60 to 4.80 with 180 days credit. After the OGL policy was announced, no credit is available to Indian buyers and the prices have been hiked to US $5.60. This way, a few international manufacturers of these technical pesticides enjoy a monopoly by virtue of their being the specified suppliers. This has put tremendous hardship on IFFCO, KRIBCO and State Agro Industries Corporations to cater to the needs of the industry through lower prices of raw materials, as was expected in the OGL Policy for pesticides.

Problems Faced by Dealers

These are: (a) Period of credit for dealers is very short. Dealers get credit for one month in peak season and three months in off-season. On the other hand, farmers are in need of credit for about six months, that is for one complete crop season, while the dealers extend credit to only a few selected well to do farmers. (b) The shelf life of the formulated pesticides is about one year. Once the quantity of pesticides is purchased by the dealer, it is his responsibility to sell it before the expiry date. The company is not bound to replace the unsold quantity of pesticides. Thus the dealer has to either bear the loss or try to sell at a low price the outdated stock. (c) The dealers are not fully trained in the use of appropriate type of pesticides for different crops and for different types of pest attacks. (d) A few local formulators produce substandard quality products and their packing is underweight. This becomes a major problem for dealers. Some dealers have lost their licences because of this. (e) As indicated by the selected dealers from Guntur, some farmers have the habit of complaining against products and dealers. They argue that such and such products were not effective on pests and ask the return of money. In this situation, inspectors were drawing samples and harassing dealers. (f) Some of the selected dealers have reported that in the name of quality control, pesticide inspectors frequently visit dealers shops and ask them to sell more of certain products on which they get commission from the companies.

Problems Faced by Farmers

These are: (a) Some farmers complained about the quality of the products available in the market because of the substandard quality of the products of local formulators. (b) Non-availability of credit is a major problem for farmers. Dealers get credit from the distributors and companies. But they do not give credit to all the farmers, as there is no guarantee about repayment. Only a very few well to do farmers get credit. (c) The period of credit is one month which is not adequate from the farmers' point of view. They are not able to repay money before harvest of the crops is over. For them, the normal credit period should be six months. Of course, pesticides are covered by crop loans but they have an interest cost. (d) Most farmers are illiterate and they are not able to read the expiry date written in English on the lable on the packet. Many times farmers are cheated by dealers who are under pressure to sell all the stock held by them. (e) Farmers lack knowledge about the method of application of pesticides. They are also not able to recognize the pest attack and type of diseases in their crops. (f) The price per litre varies with packing sizes. The smaller packing size is comparatively costlier than the bigger sizes. Most farmers are small farmers and their requirement of pesticides is also small at a time. Thus every time they have to pay more in relative terms. (g) There is much confusion about usage of the type and quality of pesticides to control pests. This is because, for the same pest attack on the same crop, some pesticides which are recommended by the companies are not recommended by the agricultural institutions. Besides,

there is variation between the dosages recommended by the manufacturers and by the institutions[Patel and Srivastava, 1982].

EMERGING MARKETING SCENARIO

The pattern of use of pesticides is very similar to that of fertilizers which also display geographical and crop concentrations. This is understandable because marketers usually tap the markets with greater potential and easier access first. However, the pattern is likely to undergo a major change during the next decade. During the Eighth Plan, the emphasis is likely to be on the acceleration of agricultural growth in rainfed areas and crops like oilseeds and pulses which have received much less attention. The process has already begun with the identification of 66 districts for intensive development. Efforts have also been made to delineate 15 agro-climatic regions for promotion of optimal cropping mix. This scenario opens up new opportunities and challenges for the pesticides industry. The industry will have to generate guidelines for economical use of pesticides to crops grown in disadvantaged regions. This has to be supplemented by development of crop specific products, their pricing and promotion in relation to the crop profitability in the disadvantaged regions. Market development efforts are time-consuming and cost intensive. As the industry is presently dependent on distributors and dealers to push their products, a challenge may not be automatically taken up because the turnover per outlet in disadvantaged regions is going to be much smaller than in the traditional markets. Similarly, the promotional cost is also going to be high. Perhaps the pesticides industry also needs governmental support for market development, as in the case of fertilizer industry which has recently been given such support by the government.

To sum up, there is a vast scope for accelerating consumption of pesticides by diversifying to hitherto untapped regions and crops but this calls for a major market development effort on the part of the industry. We have outlined major problems faced by the several constituents of pesticides industry. The initiative for resolving them must come from the constituents themselves.

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ADMINISTERED PRICES, BUDGET DEFICITS AND GROWTH: Some Policy Implications for the Indian Economy Using Optimal Control Methods

Ajit V. Karnik

The paper is concerned with studying the effects of changes in administered prices on the Indian macro- economy, especially budget deficits and growth. Administered prices have been divided into two components, energy prices and non-energy prices, and the effect of changes in each component are studied separately. Our dynamic simulation and optimal control exercises carried out in the context of a macroeconometric model of the Indian economy throw up some very interesting results.

1. INTRODUCTION

The current crisis in West Asia has brought into sharp focus India's atavistic problem of tenuous crude oil supply lines. Once more the Indian economy is faced with disruptions in the supply of petroleum products and the concomitant rise in the prices of these products. The familiar scenario of the 1970s is being played out once again: a sharp hike in the oil import bill coupled with a proposal to hike the prices of petroleum products in order to pass on the burden to the users. The fact that energy prices are administered offers the government a convenient avenue for collecting much needed revenues. It is of course well-known that even in the absence of any external crisis the government has often sought to garner revenues by raising, both, administered energy prices and administered non-energy prices. Careful analysis is, however, bound to show that the gains from following such a policy have been largely illusory. Expenditures have often increased to the same or even greater extent than the increase in revenues thereby leading to a widening of the gap between the two.

In this paper we have tried to focus on the impact of changes in the administered energy and administered non-energy prices on the macro-economy. Specifically, we examine the effects of these changes on the NDP, general price level, earnings of government enterprises, non-tax revenues and budget deficits. The analysis is carried out in the context of a 42 equation macroeconometric model of the Indian economy. The model developed in this paper differs from other macroeconometric models developed for India [See, for example, Narsimham 1956, Choudhury 1963, Marwah 1964, Mammen 1967, Pandit 1980, Krishnamurthy 1983, Bhattacharya 1984, Pani 1984, Pethe 1987, Rao 1987 and Fernandes 1988] in the detailed treatment of the energy dimension of the economy. While some of the papers just listed have been very innovative in incorporating special features or specific aspects of the Indian economy, the energy sector has not been comprehensively analysed so far. This paper represents a modest effort in that direction.

The plan of the paper is as follows: section 2 discusses and lists the variables used in the model; section 3 briefly touches on the estimation procedure; section 4 presents a detailed account of the estimated model; in section 5 we carry out a structural analysis of the model; section 6 deals with the simulation of the model and some policy experiments; in section 7 we present the results of our optimal control exercises; and section 8 offers some concluding remarks.

2. LIST OF VARIABLES

Any model developed for the Indian economy has to take into account the dominating role played by the government. In the context of the energy sector the following is true:

a) all crude oil production, imports and refining is in government hands;

b) the government controls virtually the entire coal production;

c) the government controls a large proportion of electricity generation;

d) energy prices are set by the government as are the prices of many other non-energy products and services.

The model developed in this paper consists of 42 endogenous variables which are determined by a set of as many equations. Of the 42 equations, 12 are definitional equations or identities while

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the remaining are behavioural equations. All the equations of the model except for two definitional identities are linear. The model also comprises 15 predetermined variables of which 8 are exogenous and 7 are instruments or control variables. Of course, it may be mentioned that of the 7 control variables only 3 are major controls and only these 3 play an important role right through the study.

In Table 2.1 is given a listing of all the endogenous, control, and exogenous variables employed in the model. In Table 2.2 are given the values of the endogenous variables and in Table 2.3, the values of the control variables.

TABLE 2.1. LIST OF VARIABLES

	Symbol	Variable	Units
Endogenous Variables			
1.	APTL	Administered Prices	Index
2.	BD	Budget Deficit	Rs crore (curr. prices)
3.	CEEN	Pvt. Consumption Expenditure on Energy	Rs crore (70-71 prices)
4.	CETL	Pvt. Consumption Expenditure	Rs crore (70-71 prices)
5.	CR	Capital Receipts	Rs crore (curr. prices)
6.	COAL	Coal Production	million mtce
7.	DEPR	Capital Depreciation	Rs crore (70-71 prices)
8.	ECAG	Energy Consumption in Agriculture	million mtce
9.	ECHO	Energy Consumption in Households	million mtce
10.	ECM	Energy Consumption in Mining, Manufacturing and Construction	million mtce
11.	ECTR	Energy Consumption in Transport and Communications	million mtce
12.	ELEC	Electricity Generation	'000 million kwh
13.	ENC	Energy Consumption	million mtce
14.	ENP	Energy Production	million mtce
15.	GDCF	Gross Domestic Capital Formation	Rs crore (70-71 prices)
16.	GDCT	Capital Formation in Transport	Rs crore (70-71 prices)
17.	GS	Gross Savings	Rs crore (70-71 prices)
18.	GSA	Gross Sown Area	'000 hectares
19.	IDEB	Interest Payments on Internal Debt	Rs crore (curr. prices)
20.	IMP	Total Imports	Rs crore (70-71 prices)
21.	KS	Capital Stocks	Rs crore (70-71 prices)
22.	M1	Narrow Money	Rs crore (curr. prices)
23.	NAP	Non-administered Prices	Index
24.	NDCF	Net Domestic Capital Formation	Rs crore (70-71 prices)
25.	NDE	Non-developmental Expenditure	Rs crore (curr. prices)
26.	NTR	Non-tax Revenue	Rs crore (curr. prices)
27.	OILC	Crude Oil Consumption	million metric tonnes
28.	OILI	Crude Oil Imports	million metric tonnes
29.	OILP	Crude Oil Production	million metric tonnes
30.	P	Net Domestic Product Deflator	1970-71 = 1
31.	PDI	Personal Disposable Income	Rs crore (70-71 prices)
32.	PUC	Earnings of Government Enterprises	Rs crore (curr. prices)

(Contd.)

TABLE 2.1. (Concld.)

	Symbol	Variable	Units
33.	S	Gross Savings Rate	%age points
34.	TR	Tax Revenue	Rs crore (curr. prices)
35.	WPI	Wholesale Price Index	1970-71 =100
36.	YGFR	Gross Domestic Product	Rs crore (70-71 prices)
37.	YNFA	Contribution to NDP from Agriculture	Rs crore (70-71 prices)
38.	YNFM	Contribution to NDP from Mining and Manufacturing	Rs crore (70-71 prices)
39.	YNFN	Net Domestic Product	Rs crore (curr. prices)
40.	YNFR	Net Domestic Product	Rs crore (70-71 prices)
41.	YNFS	Contribution to NDP from Services	Rs crore (70-71 prices)
42.	YNFT	Contribution to NDP from Transport	Rs crore (70-71 prices)
Control Variables			
1.	APEN	Administered Energy Prices	Index
2.	APNE	Administered Non-energy Prices	Index
3.	GDE	Government Developmental Expenditures	Rs crore (curr. prices)
4.	KREFN	Fixed Capital Expenditure in Petroleum Refining	Rs crore (curr. prices)
5.	PGDCE	Public sector Capital Formation in Electricity Generation	Rs crore (70-71 prices)
6.	PGDCM	Public Sector Capital Formation in Mining	Rs crore (70-71 prices)
7.	PGDCT	Public Sector Capital formation in Transport	Rs crore (70-71 prices)
Exogenous Variables			
1.	DBFA	Domestic Borrowings plus foreign Aid	Rs crore (curr. prices)
2.	DEBT	Internal Debt	Rs crore (curr. prices)
3.	EXP	Total Exports	Rs crore (70-71 prices)
4.	GDCA	Capital Formation In Agriculture	Rs crore (70-71 prices)
5.	HPM	High Powered Money	Rs crore (curr. prices)
6.	RAIN	Rainfall Index	Normal = 100
7.	TIME	Time Index	Units
8.	UVIC	Unit Value of Imports: Petroleum Crude	1970-71 = 100

Notes: (a) 1 crore = 10 million; (b) Current exchange rate: $1 = Rs 16; (c) curr. stands for current

The basic data used in the estimation of the model were drawn from the National Accounts Statistics of the Central Statistical Organisation, the Reserve Bank of India Bulletins and the Report on Currency and Finance of the Reserve Bank Of India. It must be pointed out that for some of the series data were not available either in the form required for our purpose or on a consistent year to year basis over the estimation period. The latter category consisted of the following variables:

a) ECAG: Energy consumption in agriculture
b) ECHO: Energy consumption in households
c) ECM: Energy consumption in mining and manufacturing
d) ECTR: Energy consumption in transport

TABLE 2.2. VALUES OF ENDOGENOUS VARIABLES

year	aptl	bd	ceen	cetl	coal	cr	depr	ecag	echo	ecm	ectr	elec	enc	enp
1960-61	10.01	-117	793	21,202	53.54	1,207	1,345	1.98	10.48	26.01	22.05	20.03	60.52	55.15
1961-62	10.18	114	833	21,596	57.43	957	1,452	2.27	13.43	27.74	23.27	23.04	66.71	59.53
1962-63	10.52	156	858	22,037	62.65	916	1,600	2.59	15.96	29.47	24.53	25.82	72.55	65.74
1963-64	12.03	167	909	22,605	65.46	1,381	1,577	2.96	15.9	31.2	25.81	29.82	75.86	69.5
1964-65	12.25	172	916	24,571	64.2	1,645	1,602	3.36	12.48	32.94	27.12	32.74	75.9	69.21
1965-66	12.64	173	965	23,836	68.15	1,705	1,615	3.8	14.91	34.67	28.45	35.75	81.33	74.68
1966-67	13.69	295	953	24,382	68.91	2,473	1,602	4.28	14.59	36.4	29.81	38.94	85.08	77.52
1967-68	14.47	206	985	26,272	69.94	2,251	1,653	4.8	13.91	38.13	31.2	43.25	88.04	79.95
1968-69	15.11	262	1,026	27,056	73.33	2,078	1,802	5.36	15.29	39.87	32.61	49.25	93.13	84.34
1969-70	15.79	46	1,019	28,082	76.16	2,509	1,948	5.95	16.42	41.6	34.05	55.62	98.02	88.59
1970-71	16.49	285	1,033	29,838	73.98	2,524	2,217	6.59	12.76	43.33	35.51	62.5	98.19	87.23
1971-72	17.44	519	1,050	30,709	73.94	3,031	2,277	7.26	10.71	45.06	37.01	67.42	100.04	88.92
1972-73	18.43	869	1,054	30,093	77.09	2,974	2,269	7.97	11.13	46.79	38.53	71.09	104.15	92.28
1973-74	22.68	328	1,051	30,914	79.99	3,646	2,156	8.72	10.46	48.52	40.07	73.77	107.77	95.35
1974-75	33.49	721	1,070	31,190	87.9	3,296	2,165	9.5	14.52	50.25	41.64	78.99	115.91	104.1
1975-76	36.38	366	1,111	33,530	98.27	4,697	2,608	10.32	23.02	51.99	43.24	88.35	128.57	116.34
1976-77	37.71	131	1,143	33,287	102.39	5,607	2,721	11.19	24.44	53.72	44.87	96.49	134.22	122.07
1977-78	38.25	933	1,201	36,774	101.9	5,589	2,896	12.1	26.79	55.45	46.52	101.86	140.86	125.22
1978-79	40.18	1,506	1,257	38,540	102.37	6,938	3,280	13.04	27.42	57.19	48.19	110.78	145.84	130.65
1979-80	48.94	2,700	1,266	36,638	106.02	6,160	3,330	14.02	32.53	58.92	49.9	113.65	155.37	133.82
1980-81	60.9	2,577	1,296	40,926	108.74	7,332	3,647	15.04	30.22	60.65	51.64	120.03	157.54	133.23
1981-82	70.92	1,539	1,410	41,733	105.04	9,005	4,019	13.94	28.01	56.21	47.86	133.41	146.01	137.19
1982-83	74.95	1,656	1,532	42,805	110.04	13,287	4,274	14.81	29.82	59.84	50.95	142.85	155.42	150.24
1983-84	78.2	1,417	1,598	45,989	116.22	15,862	3,301	15.89	31.92	64.05	54.53	154.34	166.38	164.41
1984-85	85.4	3,748	1,674	47,504	123.57	17,765	4,061	16.68	33.5	67.23	57.23	169.98	174.63	176.41
1985-86	95.53	4,937	1,750	49,183	130.02	16,763	3,791	18.12	36.44	73.14	62.27	188.34	189.97	185.79

(Contd.)

TABLE 2.2 VALUES OF ENDOGENOUS VARIABLES (Contd.)

year	gdcf	gdct	gs	gsa	ideb	imp	ks	m1	nap	ndcf	ndc	ntr	oilc	oili
1960-61	4,648	618	3,769	152,770	77	2,021	57,581	2,869	45.09	3,303	1,349	35	5.97	5.51
1961-62	4,360	742	3,743	156,210	83	1,799	60,884	3,046	45.02	2,908	1,426	162	6.64	5.99
1962-63	5,006	860	4,251	156,760	245	1,883	63,792	3,310	46.78	3,406	1,678	367	7.37	6.15
1963-64	5,145	915	4,452	156,960	278	1,961	67,360	3,752	48.87	3,568	2,429	472	8.38	6.59
1964-65	5,381	900	4,517	159,230	316	2,047	70,928	4,080	55.25	3,779	2,854	518	9.21	6.8
1965-66	5,770	915	4,982	155,280	371	1,797	74,707	4,529	60.06	4,155	3,116	536	10.4	6.97
1966-67	6,215	727	5,160	157,350	464	2,276	78,862	4,950	69.11	4,613	4,168	539	12.67	7.76
1967-68	5,746	567	4,859	163,740	501	2,178	83,475	5,350	77.93	4,093	3,930	617	14.85	9.13
1968-69	5,588	601	5,144	159,530	528	1,857	87,568	5,779	76.19	3,786	3,888	741	16.58	10.51
1969-70	6,319	560	6,072	162,260	565	1,622	91,354	6,387	79.01	4,371	4,303	866	17.69	10.95
1970-71	7,177	814	6,783	165,790	606	1,634	95,725	7,373	83.51	4,960	4,674	891	18.76	11.85
1971-72	7,576	861	7,123	165,190	670	1,894	100,685	8,322	88.16	5,299	5,264	1,100	19.61	12.38
1972-73	6,857	961	6,604	162,150	776	1,824	105,984	9,700	97.77	4,588	6,050	1,135	19.88	12.55
1973-74	8,404	866	8,125	169,870	882	2,108	110,572	11,200	117.02	6,248	6,541	1,173	20.58	13.31
1974-75	8,171	869	7,769	164,190	1,001	2,775	116,820	11,975	141.41	6,006	7,397	1,460	21.05	13.36
1975-76	9,508	971	9,583	171,300	1,228	3,399	122,826	13,325	136.62	6,900	9,194	2,066	22.07	13.69
1976-77	10,090	905	10,881	167,340	1,488	3,388	129,726	16,024	138.89	7,369	9,767	2,158	23.18	14.14
1977-78	10,746	992	11,595	172,260	1,646	3,784	137,095	18,383	147.55	7,850	10,699	2,732	24.73	14.27
1978-79	13,838	1,146	13,764	174,760	1,984	4,246	144,945	21,819	145.62	10,558	13,284	2,672	26.26	14.61
1979-80	12,543	1,183	12,255	169,660	2,292	4,900	155,503	19,947	168.66	9,213	12,564	2,958	27.38	15.44
1980-81	13,989	1,351	13,047	173,320	2,748	6,081	164,716	23,210	196.4	10,342	13,557	3,558	26.19	15.41
1981-82	14,518	1,511	13,440	177,040	3,260	6,122	175,058	24,792	210.38	10,499	14,277	3,790	30.17	14.04
1982-83	15,170	1,530	14,192	173,400	4,007	6,012	185,557	28,535	213.75	10,896	20,999	5,035	32.71	11.6
1983-84	15,335	1,432	14,538	180,360	4,869	6,239	196,453	33,066	237.18	12,034	23,424	5,016	34.71	8.86
1984-85	16,207	1,739	15,135	176,000	6,049	6,395	208,487	39,649	253	12,146	27,393	6,690	36.73	8.62
1985-86	18,959	1,783	16,546	180,888	7,504	6,695	220,633	43,599	262.27	15,168	20,927	8,026	42.16	11.98

(Contd.)

TABLE 2.2. VALUES OF ENDOGENOUS VARIABLES (Concld.)

year	oilp	p	pdi	puc	s	tr	wpi	ygfr	ynfa	ynfm	ynfn	ynfr	ynfs	ynft
1960-61	0.47	0.5474	23,227	53	0.1466	730	55.1	25,534	13,575	4,360	13,335	24,360	5,489	936
1961-62	0.65	0.5592	23,950	66	0.1405	875	55.2	26,440	13,686	4,681	14,085	25,186	5,811	1,009
1962-63	1.22	0.5825	24,173	56	0.1564	1,061	57.3	27,003	13,223	5,002	14,903	25,583	6,174	1,084
1963-64	1.79	0.6349	25,224	70	0.1562	1,374	60.9	28,380	13,694	5,477	17,089	26,916	6,580	1,165
1964-65	2.41	0.6941	27,510	70	0.1475	1,563	67.5	30,617	14,932	5,872	20,148	29,026	7,007	1,215
1965-66	3.43	0.761	26,025	79	0.1721	1,784	72.7	29,023	12,842	6,049	20,801	27,335	7,162	1,282
1966-67	4.91	0.8748	26,399	87	0.1772	1,934	82.8	29,307	12,678	6,121	24,078	27,524	7,403	1,322
1967-68	5.72	0.944	28,972	102	0.1536	1,937	92.4	31,868	14,633	6,319	28,312	29,993	7,644	1,397
1968-69	6.07	0.9375	29,648	106	0.1538	2,019	91.3	32,725	14,711	6,587	28,862	30,778	7,990	1,490
1969-70	6.74	0.9753	31,327	124	0.1789	2,201	94.8	34,802	15,636	7,089	31,877	32,692	8,398	1,569
1970-71	6.91	1	33,062	124	0.1846	2,451	100	36,736	16,989	7,207	34,519	34,519	8,876	1,580
1971-72	7.23	1.0527	33,444	144	0.1909	2,928	105.6	37,312	16,883	7,390	36,873	35,026	9,247	1,658
1972-73	7.33	1.1765	33,239	164	0.1794	3,443	116.2	36,940	15,793	7,642	40,619	34,526	9,471	1,739
1973-74	7.27	1.4021	35,009	157	0.2116	3,900	139.7	38,722	16,955	7,724	50,793	36,269	9,764	1,760
1974-75	7.69	1.6286	35,088	208	0.1998	5,097	174.9	39,080	16,618	7,921	59,796	36,712	10,100	1,985
1975-76	8.38	1.5492	38,776	195	0.2228	6,010	173	42,890	18,777	8,348	62,557	40,365	10,865	2,165
1976-77	9.04	1.6571	38,889	237	0.2516	6,581	176.6	43,160	17,575	9,140	67,157	40,513	11,469	2,329
1977-78	10.46	1.7234	42,814	279	0.247	7,060	185.8	46,917	19,689	9,780	75,907	44,137	12,225	2,443
1978-79	11.65	1.7491	45,076	264	0.2757	8,568	185.8	49,633	20,250	10,486	81,588	46,606	13,252	2,618
1979-80	11.94	2.012	42,316	302	0.2583	8,219	217.6	47,138	17,532	10,259	88,774	44,043	13,528	2,724
1980-81	10.78	2.2328	45,556	292	0.2555	9,341	257.3	50,736	19,735	10,480	105,877	47,419	14,348	2,856
1981-82	16.13	2.4304	49,194	321	0.2502	10,537	281.3	53,168	20,365	10,900	120,813	49,633	15,367	3,002
1982-83	21.11	2.6297	49,350	419	0.2585	13,056	288.7	54,280	19,776	11,267	133,151	50,633	16,408	3,182
1983-84	25.85	2.8465	53,942	451	0.2616	15,477	316	58,720	21,953	12,383	156,243	54,890	17,142	3,412
1984-85	28.11	3.0614	55,743	407	0.2577	17,694	338.4	60,986	21,924	13,160	174,167	56,891	18,138	3,669
1985-86	30.18	3.2641	58,255	515	0.2791	21,180	357.8	64,017	21,955	14,256	194,943	59,712	19,411	4,090

TABLE 2.3. VALUES OF CONTROL VARIABLES

year	apcn	apne	gde	krefn	pgdce	pgdcm	pgdct	dbfa	debt	exp	gdca	hpm	rain	uvic
1960-61	5.14	4.87	506	na	185	47	372	n.a.	3,974	1,142	764	2,108	99	81.82
1961-62	5.23	4.95	682	na	308	48	463	778	4,166	1,182	723	2,232	97.4	72.72
1962-63	5.4	5.12	822	na	355	73	584	881	4,448	1,128	733	2,344	94.7	72.72
1963-64	6.18	5.85	965	na	445	98	676	1,133	4,809	1,268	824	2,534	85.9	72.72
1964-65	6.29	5.96	1,044	na	444	103	679	1,039	5,033	1,183	899	2,778	97.5	72.72
1965-66	6.49	6.15	1,082	na	506	67	601	1,594	5,415	1,009	1,029	2,959	80	63.64
1966-67	7.03	6.66	1,053	na	456	112	522	1,788	6,217	1,221	912	3,231	87.9	81.82
1967-68	7.43	7.04	1,081	16,273	444	88	460	1,713	6,477	1,291	961	3,463	92	90.91
1968-69	7.76	7.35	1,212	15,442	469	66	445	1,215	6,860	1,413	1,066	3,662	93.5	100
1969-70	8.11	7.68	1,319	16,545	535	86	385	1,068	7,066	1,375	1,216	4,069	97	90.91
1970-71	8.46	8.03	1,477	19,032	640	84	511	1,681	7,663	1,240	1,365	4,390	96.5	100
1971-72	8.96	9.48	2,314	na	625	90	545	2,030	8,332	1,439	1,392	4,822	99	118.18
1972-73	9.31	9.12	2,371	na	621	129	690	2,272	10,195	1,571	1,467	5,381	86	127.27
1973-74	11.05	11.63	2,506	10,421	596	165	597	237	11,104	1,829	1,518	6,033	99.5	318.18
1974-75	16.78	16.79	3,177	10,250	617	168	612	3,008	12,368	2,373	1,256	7,273	85.5	700
1975-76	18.54	17.84	3,945	11,509	902	293	663	3,785	13,898	3,475	1,436	7,604	97	790.91
1976-77	19.53	18.18	4,710	14,352	906	390	619	2,591	14,457	4,179	2,058	7,807	94.3	881.82
1977-78	19.82	18.43	5,615	13,475	1,025	371	629	6,405	18,995	4,633	2,170	9,798	98.5	909.1
1978-79	20.7	19.48	6,400	13,790	1,071	336	705	3,024	19,854	4,172	2,836	10,941	97.5	909.1
1979-80	23.95	24.99	7,466	13,906	1,166	356	713	7,433	24,399	4,612	2,441	14,083	85	1445.46
1980-81	29.97	30.93	9,251	13,457	1,251	455	830	10,418	30,864	5,139	2,632	16,573	97	2200
1981-82	36.17	34.75	10,594	26,807	1,407	565	845	9,982	35,653	5,044	2,495	19,443	99	2600
1982-83	38.89	35.06	12,035	33,376	1,512	866	837	13,472	46,939	5,034	2,353	20,998	89.4	2536.36
1983-84	41.86	36.34	14,348	41,724	1,502	844	777	15,686	50,263	5,442	2,188	23,110	95	2363.64
1984-85	43.86	41.54	18,504	47,104	1,540	812	957	18,072	58,537	5,323	2,333	28,823	90	2681.82
1985-86	49.06	46.47	29,979	45,570	1,769	1,004	843	20,741	71,039	4,282	2,309	31,477	90	2736.39

Interpolation was used to construct a continuous year to year series for these variables.

As far as the former category was concerned, for the purpose of our study it was absolutely essential to split the Wholesale Price Index (WPI) series into an Administered Prices (APTL) component and a Non-administered Prices (NAP) component with APTL itself being divided into Administered Energy Prices (APEN) and Administered Non-energy Prices (APNE). Unfortunately, data on APTL, NAP, APEN and APNE were not directly available and we had to construct these series on the basis of the work done by Rao [1984].

3. ESTIMATION PROCEDURE

The empirical estimates of the equations of the model have been obtained using annual data over a 23 year period ranging from 1961-62 to 1983-84. Data for the subsequent years were not available for all the variables of the model. In view of the rather restricted time span over which data were available we were severely constrained in the choice of the estimation technique to be employed. We have employed the Ordinary Least Squares (OLS) method to estimate the parameters of the model. While it is true that OLS yields estimates that are biased and inconsistent, these estimates exhibit insensitivity to specification errors [Rao, 1987]. However, when it came to choosing the equations to enter the model we adopted certain strict norms which were not violated as far as possible. No equation with an adjusted R squared of less than 0.80 was chosen. In addition, no t value less than 1.5 was tolerated except in the case of 4 equations.

4. THE MODEL

The 42 equation model has been divided into 11 sectors: (i) production (ii) consumption (iii) investment (iv) savings (v) energy (vi) trade (vii) prices (viii) income (ix) government (x) monetary and (xi) miscellaneous. In the case of each of the equations of the model a substantial amount of experimentation was carried out with respect to choice of variables before the equation was finally selected. In what follows we have reported only the final form of the model without discussing the alternative forms of the equation that were tried out. For each of the equations listed below we report the t statistic under each coefficient, the adjusted R squared (adj. R sq.), the F statistic and the Durbin - Watson (D.W.) statistic. In the situation where the set of independent variables includes a lagged dependent variable we report an additional statistic to test for serial correlation called " T-stat for AR(1) "[see Johnston, 1984, p. 318].

4.1 Production sector

a) Contribution to NDP from agriculture and allied sectors

The contribution to total NDP of the agriculture and allied sectors (YNFA) is determined by the extent of gross sown area (GSA) and rainfall (RAIN). To take account of the increasing productivity in agriculture due to the use of modern techniques and superior inputs we have included a trend factor (TIME) in the equation. The estimated equation is given below.

$$\begin{aligned} YNFA = &-27148.00 + 0.2232\ GSA \\ &(-3.04) \quad (3.15) \\ &+138.53\ TIME + 55.802\ RAIN \\ &(1.95) \quad (1.78) \end{aligned} \qquad ...(4.1)$$

Adj. R sq = 0.9594; F = 174.17; DW = 1.87

b) *Contribution to NDP from mining, manufacturing, construction and utilities*

NDP originating in this sector (YNFM) depends on the efficient functioning of the transport sector as well as the availability of energy inputs at reasonable prices. Consequently, YNFM is specified as a function of NDP originating from transport and communications (YNFT) and administered energy prices (APEN) in a partial adjustment framework.

$$\begin{aligned} YNFM = &\ 941.66 + 0.2155\ YNFM(-1) \\ &(3.78) \quad (1.46) \\ &-55.184\ APEN + 3.2143\ YNFT \\ &(-2.93) \quad (4.90) \end{aligned} \qquad ...(4.2)$$

Adj. R sq = 0.9937; F = 1152.12; DW = 1.52;
T-stat for AR(1) = 0.97

This is a very important equation in the model and several alternative forms were tried out before selecting the one given in equation 4.2. Even though we are not reporting alternatives tried and discarded for the other equations, it seems necessary to make an exception in the case of this equation. This will help the reader to evaluate the results of our exercises as accurately as possible. One of the alternative forms tried for equation 4.2 was YNFM = f [YNFM(-1), YNFT, APEN, APNE]. While the fit for this equation was satisfactory, the coefficient associated with APEN did not have the theoretically expected sign. Moreover this equation was sensitive to the time period chosen for the estimation purposes. If the equation was estimated over the period 1962 to 1976 neither of the coefficients was statistically significant. Of course an equation for YNFM with APNE as an explanatory variable (but with APEN excluded) yielded good results. However, certainly we could not include both forms of the equation, the one reported above as equation 4.2 and the one with APNE as an explanatory variable, in the final version of our model. The decision to include the equation with APEN as one of the explanatory variables was guided by the following considerations:

1. Since the first oil crisis (1973-74) till 1983-84 (which is the terminal year of our estimation period) APEN have increased at an annual rate of 28 per cent while APNE have increased at an annual rate of 21 per cent. This is an indication that energy prices were raised more liberally and/or more frequently by the government, thereby causing significant and frequent perturbations in the economy. It is this that I have tried to capture by focusing on APEN rather than on APNE. If this paper can be given a contemporary relevance then the recent hikes in the prices of petroleum products further accentuate the relative importance of APEN vis-a-vis APNE.

2. The larger and the more frequent changes in APEN indicate that their impact on budget deficits (BD) is also likely to be more important to model than the impact of changes in APNE on BD. The contradictions involved in bridging BD by raising administered prices, as we shall see later, are more starkly apparent when examined in the context of the model as specified.

3. Increases in the prices of petroleum and hence APEN are designed to curb the consumption of these products and thus bridge the trade gap. By the dual gap approach we know that the trade gap is the mirror image of the budget deficits (BD). Again, as our experiments will show, this strategy of the government is self defeating, since our model can show that an increase in APEN, which is merely a subset of total administered prices, only widens BD and hence, concomitantly, the trade gap.

c) *Contribution to NDP from transport and communications*

The net output of this sector (YNFT) is a function of the net output of the agricultural sector as well as the mining and manufacturing sector (YNFA + YNFM), government development expenditures (GDE) and investment in this sector (GDCT).

$$\begin{aligned} YNFT = &- 1116.80 \quad + 0.1083\ (YNFA+YNFM) \\ &(-5.09) \qquad\quad (10.46) \\ &+ 0.0298\ GDE \quad + 0.2748\ GDCT \qquad ...(4.3) \\ &(3.10) \qquad\quad (1.44) \end{aligned}$$

Adj. R sq = 0.9783 F = 362.02 DW = 1.79

d) *Contribution to NDP from Services*

In the case of services as well, the net output of this sector (YNFS) is determined by the net output of the agricultural sector as well as the mining and manufacturing sector (YNFA + YNFM) along with government development expenditures (GDE) in a partial adjustment framework.

$$\begin{aligned} YNFS = &- 824.37 \quad + 0.0911\ (YNFA+YNFM) \\ &(-2.85) \qquad\quad (3.54) \\ &+ 0.8936\ YNFS(-1) \quad + 0.0266\ GDE \qquad ...(4.4) \\ &(19.54) \qquad\quad (2.46) \end{aligned}$$

Adj. R sq = 0.9986; F = 5680.58; DW = 1.71; T-stat for AR(1) = 0.63

e) *Real NDP at factor cost at constant prices*

The real net domestic product at factor cost for the whole economy (YNFR) is composed of the contributions of the agricultural sector (YNFA),

mining and manufacturing sector (YNFM), transport sector (YNFT) and the services sector (YNFS).

$$YNFR = YNFA + YNFM + YNFT + YNFS \quad ...(4.5)$$

Since this variable is composed of the contributions of the four sectors discussed earlier, it obviously will be influenced by factors such as rainfall, energy prices and government development expenditures. Clearly, this is a very important variable in the model.

f) *Real GDP at factor cost at constant prices*

The gross domestic product at constant prices (YGFR) is specified as the sum of real NDP at factor cost (YNFR) plus capital depreciation (DEPR).

$$YGFR = YNFR + DEPR \quad ...(4.6)$$

4.2 Consumption Sector

In this sector we are concerned with the estimation of private consumption expenditure on energy which is determined by total private consumption expenditure which in turn depends on personal disposable income.

a) *Personal disposable income*

Personal disposable income (PDI) is determined by real NDP at factor cost (YNFR) as shown in the equation below.

$$PDI = \underset{(376.60)}{0.9653}\ YNFR \quad ...(4.7)$$

Adj. R sq = 0.9988; F = 141827.56; DW = 0.82

b) *Private consumption expenditure*

A simple two variable equation gives private consumption expenditure (CETL) as a function of PDI.

$$CETL = \underset{(5.88)}{2891.90} + \underset{(59.80)}{0.8021}\ PDI \quad ...(4.8)$$

Adj. R sq = 0.9939; F = 3576.55; DW = 1.64

c) *Private consumption expenditure on energy*

Private consumption expenditure on energy (CEEN) is important in determining the consumption of energy by households as will be seen later and is specified as a function of CETL.

$$CEEN = \underset{(5.22)}{243.50} + \underset{(19.03)}{0.0276}\ CETL \quad ...(4.9)$$

Adj. R sq = 0.9426; F = 362.17; DW = 0.93

4.3 Investment Sector

a) *Capital formation in transport sector*

Public sector capital formation in transport (PGDCT) accounts for more than 50 per cent of the total capital formation in this sector (GDCT). This is reflected in equation 4.10.

$$GDCT = \underset{(-3.33)}{-323.42} + \underset{(13.52)}{2.0585}\ PGDCT \quad ...(4.10)$$

Adj. R sq = 0.8920; F = 182.75; DW = 0.93

b) *Gross domestic capital formation*

The estimate of gross domestic capital formation (GDCF) is obtained by invoking the two-gap formulation with gross savings (GS) being added to capital inflows, that is , the difference between total imports (IMP) and total exports (EXP).

$$GDCF = GS + [\,IMP - EXP\,] \quad ...(4.11)$$

c) *Capital stock*

The capital stock (KS) generating equation is given by

$$KS = KS(-1) + NDCF(-1) \quad ...(4.12)$$

where KS(-1) and NDCF(-1) are the one period lagged values of capital stock and net domestic capital formation, respectively.

d) *Capital depreciation*

Depreciation of capital is related to the stock of capital (KS) in the economy.

$$DEPR = \underset{(49.49)}{0.0212}\ KS \quad ...(4.13)$$

Adj. R sq = 0.9188; F = 2449.26; DW = 1.34

e) *Net domestic capital formation*

An identity yields net domestic capital formation (NDCF) as the difference between gross domestic capital formation (GDCF) and depreciation of capital stock (DEPR).

$$NDCF = GDCF - DEPR \quad ...(4.14)$$

4.4 Savings Sector

a) *Gross savings*

Gross savings (GS) are obtained as a product of the savings rate (s) and the real gross domestic product (YGFR)

$$GS = s\ YGFR \quad ...(4.15)$$

This variable is important in determining gross domestic capital formation (GDCF) and later in explaining capital receipts (CR) of the government which feed into the budget deficit identity.

b) *Savings rate*

The savings rate (s) equation is specified at a simple but effective level and reflects the fact that the rate depends on the real income originating from the non-agricultural sectors, namely, mining and manufacturing, transport and services (YNFM+YNFT+YNFS). The rationale behind such a construction is that in the Indian situation, the marginal propensity to save is clearly much higher in the non-agricultural sectors as compared to the agricultural sector.

$$s = \underset{(6.03)}{0.0683} + \underset{(12.74)}{0.00000669}\ (YNFM+YNFT+YNFS) \quad ...(4.16)$$

Adj. R sq = 0.8754; F = 155.49; DW = 0.99

4.5 Energy Sector

This is the most detailed sector of the model accounting for 10 of the 42 equations.

a) *Energy consumption in agriculture*

Energy consumption in this sector (ECAG) is determined by the net output originating here (YNFA).

$$ECAG = \underset{(-8.08)}{-17.57} + \underset{(12.15)}{0.00156}\ YNFA \quad ...(4.17)$$

Adj. R sq = 0.8695; F = 147.62; DW = 1.83

b) *Energy consumption in mining and manufacturing*

This sector is the largest consumer of energy in the Indian economy. Its level of energy consumption (ECM) is determined by the net output originating in mining and manufacturing (YNFM) and administered energy prices (APEN).

$$ECM = \underset{(-0.29)}{-0.9794} + \underset{(10.27)}{0.00657}\ YNFM - \underset{(-2.76)}{0.3369}\ APEN \quad ...(4.18)$$

Adj. R sq = 0.9598; F = 257.18; DW = 0.99

It may be pointed out that in both the equations dealing with the mining and manufacturing sector (equations 4.2 and 4.18) administered energy prices (APEN) is a highly significant variable and, of course, the sign of the coefficient is as expected.

c) *Energy consumption in transport*

The transport sector is the second largest consumer of energy after the mining and manufacturing sector. Its energy consumption (ECTR) is specified as function of net output originating in the transport sector (YNFT) and administered energy prices (APEN). In addition, bearing in mind the rapid extension of the transport network in India a time trend (TIME) has been incorporated in equation 4.19.

$$ECTR = \underset{(6.69)}{14.67} + \underset{(3.15)}{0.00865}\ YNFT - \underset{(-3.78)}{0.3385}\ APEN + \underset{(5.86)}{1.0284}\ TIME \quad ...(4.19)$$

Adj. R sq = 0.9925; F = 971.30; DW = 1.90

d) *Energy consumption in households*

Energy consumption in households (ECHO) is specified as a function of private consumption expenditure on energy (CEEN) in a partial adjustment framework.

$$\begin{array}{l} ECHO = \underset{(-0.78)}{-3.1944} + \underset{(1.25)}{0.00699}\ CEEN \\ \qquad + \underset{(5.21)}{0.8034}\ ECHO(-1) \end{array} \qquad ...(4.20)$$

Adj. R sq = 0.8619; F = 69.63; DW = 1.42; T-stat for AR(1) = 1.87

e) *Total energy consumption*

Total energy consumption (ENC) is given by the sum of energy consumption in agriculture (ECAG), in mining and manufacturing (ECM), in transport (ECTR) and in households (ECHO). It must be pointed that since we were unable to construct a consistent series of energy consumption in the services sector we have excluded this sector from consideration. However, since services account for only 3 per cent of total energy consumption our estimates of ENC are unlikely to be significantly biased.

$$ENC = ECAG + ECM + ECTR + ECHO \qquad ...(4.21)$$

f) *Total energy production*

Total energy production (ENP) is determined by the level of coal production (COAL), electricity generation (ELEC) and crude petroleum production (OILP).

$$\begin{array}{l} ENP = \underset{(-1.22)}{-3.2484} + \underset{(18.70)}{1.0273}\ COAL \\ \qquad + \underset{(2.86)}{0.1039}\ ELEC + \underset{(10.85)}{1.2306}\ OILP \end{array} \qquad ...(4.22)$$

Adj. R sq = 0.9698; F = 7116.36; DW = 1.11

g) *Coal production*

Since a large proportion of coal production (COAL) is controlled by the government it is likely to be influenced by the level of public sector capital formation in mining (PGDCM). The equation for COAL has been specified in a partial adjustment framework.

$$\begin{array}{l} COAL = \underset{(1.70)}{8.5282} + \underset{(12.02)}{0.9041}\ COAL(-1) \\ \qquad + \underset{(1.43)}{0.0081}\ PGDCM \end{array} \qquad ...(4.23)$$

Adj. R sq = 0.9698; F = 354.24; DW = 1.41; T-stat for AR(1) = 1.41

h) *Electricity generation*

As in the case of coal production, electricity generation (ELEC) is to a large extent controlled by the government. Consequently, public sector capital formation in electricity generation (PGDCE) would be an important variable determining ELEC. In addition, a time trend (TIME) has been included in equation 4.24.

$$\begin{array}{l} ELEC = \underset{(0.70)}{1.1110} + \underset{(7.56)}{0.0419}\ PGDCE \\ \qquad + \underset{(11.36)}{3.5424}\ TIME \end{array} \qquad ...(4.24)$$

Adj. R sq = 0.9933; F = 1630.28; DW = 1.07

i) *Crude petroleum production*

The level of crude petroleum production is constrained by two factors: the volume of investment in crude petroleum exploration/production and the refining capacity available within the economy. It was not possible to obtain data on the level of investment in crude petroleum exploration from 1961-62 onwards. It is only in the last few years that such data is being published in India. Data on fixed capital investment in petroleum refining (KREFN) was however available and this variable is seen to be significant in equation 4.25, which has been specified in a partial adjustment framework. Since there were some missing values in the KREFN series, it was not possible to compute the DW statistic and it has not been reported.

$$\begin{array}{l} OILP = \underset{(-2.71)}{-1.9348} + \underset{(8.58)}{0.9602}\ OILP(-1) \\ \qquad + \underset{(3.82)}{0.00021}\ KREFN \end{array} \qquad ...(4.25)$$

Adj. R sq = 0.9653; F = 196.86; DW = not available; T-stat for AR(1) = 1.65

j) *Crude petroleum consumption*

The two major consumers of petroleum products are the mining and manufacturing sector and the transport sector. Consequently, the level of crude petroleum consumption (OILC) would be determined by the net output of these two sectors (YNFM+YNFT). In addition, a time trend (TIME) is seen to be important in equation 4.26.

$$\begin{array}{lll} OILC = & -10.8170 & +0.00318\ (YNFM+YNFT) \\ & (-4.67) & (10.94) \end{array}$$

$$+0.0017\ TIME \quad (1.82) \qquad ...(4.26)$$

Adj. R sq = 0.9602; F = 241.47; DW = 0.66

4.6 Trade Sector

a) *Crude petroleum imports*

Crude petroleum imports (OILI) are specified as the difference between crude petroleum consumption (OILC) and crude petroleum production (OILP).

$$OILI = OILC - OILP \qquad ...(4.27)$$

b) *Total Imports*

Total imports (IMP) are seen to be determined by the unit value index for the import of petroleum crude (UVIC) in a partial adjustment framework. It is significant that such a simple representation for total imports is able to yield an adjusted R squared of 0.96.

$$\begin{array}{lll} IMP = & 1128.10 & +0.3915\ IMP(-1) \\ & (2.82) & (1.71) \end{array}$$

$$+1.1708\ UVIC \quad (2.95) \qquad ...(4.28)$$

Adj. R sq = 0.9635; F = 239.05; DW = 1.20; T-stat for AR(1) = 1.65

4.7 Prices Sector

a) *Wholesale price index*

It is tempting to believe that equation 4.29 and the one following are rather innovative in the sense that such representations are not commonplace at least in the case of macroeconometric models developed for India. The wholesale price index (WPI) is defined as the sum of two components: an administered prices component (APTL) and a non-administered prices component (NAP).

$$WPI = APTL + NAP \qquad ...(4.29)$$

b) *Administered prices*

The administered prices component (APTL) introduced in the previous equation is itself the sum of two parts: administered energy prices (APEN) and administered non-energy prices (APNE).

$$APTL = APEN + APNE \qquad ...(4.30)$$

Both APEN and APNE are under the control of the government and as we shall soon see changes in either of these affects the earnings of government enterprises which play an important role in determining the non-tax revenue earnings of the government. Variations in non-tax revenues it is obvious will have an impact on budget deficits.

c) *Non-administered prices*

The determination of non-administered prices is strongly grounded in economic theory, being influenced by money supply (M1) and private consumption expenditures (CETL).

$$\begin{array}{lll} NAP = & -43.00 & +0.0035\ M1 \\ & (-1.16) & (2.59) \end{array}$$

$$+0.0037\ CETL \quad (2.14) \qquad ...(4.31)$$

Adj. R sq = 0.9631; F = 288.30; DW = 1.29

d) *NDP deflator*

The general price level in the economy as represented by the NDP deflator (P) is specified as a function of money supply (M1) and administered prices (APTL).

$$\begin{array}{lll} P = & 0.4453 & +0.00004\ M1 \\ & (11.94) & (3.54) \end{array}$$

$$+0.0145\ APTL \quad (3.19) \qquad ...(4.32)$$

Adj. R sq = 0.9775; F = 288.30; DW = 1.29

4.8 Income Sector

a) *Nominal NDP at factor cost*

Nominal NDP at factor cost (YNFN) is estimated as a product of the NDP deflator (P) and real NDP at factor cost (YNFR).

$$YNFN = P\ YNFR \qquad ...(4.33)$$

This variable it will be seen shortly is crucial in determining the levels of non-developmental expenditures, tax revenues and non-tax revenues all of which feed into the budget deficit identity.

4.9 Government Sector

a) *Budget deficit*

This variable will be seen to be very important in our later analysis when we examine the effects of a change in administered prices. The budget deficit (BD) is defined as the difference between the total expenditures and the total revenues of the government. Total expenditures are composed of government developmental expenditures (GDE) and non-developmental expenditures (NDE); total revenues are made up of tax revenues (TR), non-tax revenues (NTR) and capital receipts (CR).

$$BD = [GDE + NDE] - [TR + NTR + CR] \qquad ...(4.34)$$

b) *Non-developmental expenditures*

Non-developmental expenditures (NDE) are specified as a function of nominal NDP (YNFN) and interest payments on internal debt (IDEB).

$$NDE = \underset{(1.19)}{686.30} + \underset{(2.59)}{0.0830\ YNFN} + \underset{(1.95)}{1.9631\ IDEB} \qquad ...(4.35)$$

Adj. R sq = 0.9741; F = 415.25; DW = 1.73

It may be pointed that the other component of total expenditures, government developmental expenditures, (GDE) is a policy variable.

c) *Tax revenue*

Tax revenue (TR) is modeled as a function of nominal NDP (YNFN) alone. It is pertinent that tax rate was found to be not significant in explaining tax revenues. Consequently, with the elimination of tax rate, the number of standard policy variables available to the government is fewer when compared to other models.

$$TR = \underset{(-3.88)}{-686.86} + \underset{(43.24)}{0.1003\ YNFN} \qquad ...(4.36)$$

Adj. R sq = 0.9884; F = 1869.82; DW = 1.32

d) *Non-tax revenue*

The equation for non-tax revenue (NTR) is unusual in that apart from incorporating nominal NDP (YNFN) as an explanatory variable we also have earnings of government enterprises (PUC) as an important determining variable.

$$NTR = \underset{(-4.24)}{-411.49} + \underset{(3.84)}{0.0239\ YNFN} + \underset{(1.94)}{4.3012\ PUC} \qquad ...(4.37)$$

Adj. R sq = 0.9821; F = 605.49; DW = 1.94

e) *Capital receipts*

The capital receipts (CR) of the Indian government are determined by internal and external market loans (DBFA), which is an exogenous variable in our model and by the gross savings (GS) in the Indian economy.

$$CR = \underset{(-1.06)}{-746.09} + \underset{(5.86)}{0.5712\ DBFA} + \underset{(3.17)}{0.3614\ GS} \qquad ...(4.38)$$

Adj. R sq = 0.9172; F = 122.78; DW = 1.49

f) *Earnings of government enterprises*

As discussed earlier in connection with the equation for administered prices, the earnings of government enterprises (PUC) are specified as a function of administered prices (APTL) in a partial adjustment framework.

$$PUC = \underset{(1.06)}{9.9555} + \underset{(4.30)}{0.6819\ PUC(-1)} + \underset{(2.71)}{1.9895\ APTL} \qquad ...(4.39)$$

Adj. R sq = 0.9648; F = 302.83; DW = 2.46; T-stat for AR(1) = -2.01

g) *Interest payments on internal debt*

Interest payments on internal debt (IDEB) is estimated as a function of the level of internal debt (DEBT).

$$IDEB = \underset{(57.87)}{0.0904\ DEBT} \qquad ...(4.40)$$

Adj. R sq = 0.9911; F = 3348.94; DW = 1.24

4.10 Monetary Sector

The monetary sector has deliberately been kept at a simple level in order not to inordinately increase the size of the model.

a) *Narrow money*

Money supply (M1) has been estimated as a function of high powered money (HPM) or reserve money. The coefficient associated with HPM is, of course, the money multiplier.

$$M1 = \underset{(32.59)}{1.4851}\ HPM \qquad ...(4.41)$$

Adj. R sq = 0.9507; F = 1062.11; DW = 0.60

It will be noticed that in spite of the now common practice of endogenising high powered money we have chosen not to do so. Endogenising HPM would have easily added about five more equations to our model without any commensurate gain.

4.11 Miscellaneous Sector

a) *Gross sown area*

Gross sown area (GSA) in agriculture has been specified as a function of rainfall (RAIN) and capital formation in agriculture (GDCA) in a partial adjustment framework.

$$GSA = \underset{(1.16)}{434391.00} + \underset{(2.24)}{0.4737}\ GSA(-1) + \underset{(3.28)}{401.0100}\ RAIN + \underset{(4.42)}{4.4230}\ GDCA \qquad ...(4.42)$$

Adj. R sq = 0.8416; F = 39.96; DW = 2.03; T-stat for AR(1) = 0.76

5. STRUCTURAL ANALYSIS OF THE MODEL

A very useful procedure for investigating whether the estimated model incorporates the expected causalities between the variables is to obtain the impact multipliers of the model. The impact multipliers are obtained from the reduced form coefficients of the estimated model. However, when non-linearities are present in the model it is not straight forward to derive the reduced form. The model has to be linearised before its reduced form becomes available. In the model developed in this paper non-linearities are introduced via two identities, namely, equations 15 and 33. We perforce had to linearise the model employing what has been called the "operating point" method (see Rao, 1987). This method involves linearising the model around reference values of each of the variables present in the model. Deviations of second and higher order can be neglected and we end up with a time invariant transfer function. In our linearisation exercise the reference values selected were the actual historical values taken by all the variables in the base year, 1970-71. We shall demonstrate below the procedure for linearising one of the non-linear identities (equation 4.15) but shall not present the entire linearised model. Equation 4.15 specifies gross savings (GS) as a product of the savings rate (s) and real GDP at factor cost (YGFR).

$$GS = s\ YGFR$$

Each variable in the above equation is replaced by the sum of its reference value, denoted by a bar over the variable, plus the deviation from it, denoted by d.

$$(\overline{GS} + dGS) = (\bar{s} + ds)(\overline{YGFR} + dYGFR)$$

Substituting the reference values for GS, s and YGFR we have,

$$(6783 + dGS) = (0.1846 + ds)(36736 + dYGFR)$$

Simplifying and ignoring deviations of the second order we obtain,

$$dGS = -1.5344 + 0.1846\,dYGFR + 36736\,ds$$

This procedure was adopted to linearise all the equations of the model after which the linearised version was used to obtain its reduced form. In the interest of conserving space we shall not discuss the impact multipliers of all the exogenous and control variables but confine our attention to only the crucial ones. The first set of impact multipliers demonstrate the importance of rainfall in the Indian economy. Table 5.1 lists the effects of a unit change in the rainfall index on certain endogenous variables.

TABLE 5.1 IMPACT MULTIPLIERS: RAINFALL

Endogenous Variable	Multiplier
YNFA	145.4
YNFR	267.5
CETL	207.1
GDCF	79.4
s	0.0008
ENC	1.45
BD	-39.7

A unit increase in the rainfall index increases net output of the agricultural sector (YNFA) by Rs. 145 crore or $90 mn. (million), real NDP at factor cost (YNFR) by Rs. 267 crore ($167 mn.), private consumption expenditure (CETL) by Rs. 207 crore ($129 mn.) and gross domestic capital formation by Rs. 79 crore ($49 mn.). Significantly, budget deficits (BD) go down by Rs. 40 crore ($25 mn.).

Turning to some of the policy variables, we first consider in Table 5.2 the effect of a unit change in the administered energy prices (APEN) on a few endogenous variables.

TABLE 5.2. IMPACT MULTIPLIERS: ADM. ENERGY PRICES

Endogenous Variable	Multiplier
YNFM	-84.7
YNFR	-101.5
GS	-43.7
s	-0.0007
ENC	-0.9
P	0.0145
BD	-9.2
NDE	33.1
TR	40.0
NTR	18.1
CR	-15.8
PUC	2.0

The widespread adverse effects of a unit increase in APEN is seen in a fall of Rs. 85 crore ($ 52 mn.) in the net output of the mining and manufacturing sector (YNFM) causing a decline of Rs 102 crore ($ 63 mn.) in real NDP at factor cost (YNFR). The other effects include a fall in gross savings (GS) of Rs. 44 crore ($ 27 mn.) which causes a decline in capital receipts (CR) of Rs. 16 crore ($ 10 mn.). Interestingly, tax revenues (TR) and non-tax revenues (NTR) rise by Rs. 40 crore ($ 25 mn.) and Rs. 18 crore ($ 11 mn.) respectively causing budget deficits (BD) to decline by Rs. 9 crore ($ 6 mn.). It is significant that the budget deficits do not fall by the full extent of the increase in tax and non-tax revenues. This is so because capital receipts fall but more importantly there is a substantial increase in non-developmental expenditures (NDE) to the extent of Rs. 33 crore ($ 21 mn.). The beneficial effect of a rise in administered energy prices on the earnings of government enterprises (PUC) is seen in a rise of Rs. 2 crore ($ 1 mn.).

A change in administered non-energy prices (APNE) does not have as widespread an effect on the economy as does the change in administered energy prices. The reader must bear in mind, however, that this result to some extent depends on the specification of our model. Table 5.3 below lists the impact multipliers with respect to APNE.

TABLE 5.3. IMPACT MULTIPLIERS: ADM. NON-ENERGY PRICES

Endogenous Variable	Multiplier
BD	-29.2
NDE	41.5
TR	50.2
NTR	20.5
PUC	2.0

A unit increase in APNE leads to a far more substantial fall in budget deficits (BD) as compared to a similar increase in APEN. The main reason for this is that even though non-developmental expenditures (NDE) rise by as much as Rs. 42 crore ($ 26 mn.) there is no effect of a rise in APNE on the capital receipts of the government. Tax revenues (TR) and non-tax revenues (NTR) experience increases of Rs. 50 crore ($ 31 mn.) and Rs. 21 crore ($ 13 mn.), respectively.

We finally consider a unit increase in government developmental expenditures (GDE) and this has the expected effect on the important macro-variables of the model. Table 5.4 lists these effects.

TABLE 5.4. IMPACT MULTIPLIERS: GOVERNMENT DEVELOPMENTAL EXPENDITURES

Endogenous Variable	Multiplier
YNFR	0.23
CETL	0.18
GS	0.10
s	0.0000001
WPI	0.001
BD	0.95

An increase of Rs. 1 crore ($ 0.6 mn.) in GDE increases real NDP at factor cost (YNFR) by Rs. 0.23 crore ($ 0.14 mn.), private consumption expenditures (CETL) by Rs. 0.18 crore ($ 0.11 mn.) and gross savings (GS) by Rs. 0.10 crore ($ 0.06 mn.). The depressing aspect of Table 5.4 is the virtually negligible impact on the savings rate (s) of an increase in GDE . A quick calculation indicates that in order to raise the savings rate by one percentage point GDE will have to increase by as much as Rs. 10,000 crore ($ 6 billion).

6. SIMULATION AND POLICY EXPERIMENTS

A dynamic simulation was carried out for the 42 equation model using the simulation procedures available in the TSP [Time Series Processor] software [see Bronwyn et al 1988]. In a dynamic simulation as opposed to a static simulation, it is well known, that earlier solved values of the lagged endogenous variables are used in place of the actual values. For our exercises the time period considered for the historical simulation was 1979-80 to 1983-84 and bearing in mind the size of the model the simulation performance was satisfactory. In order to have some idea of how closely the simulated values of the individual variables tracked their historical values it is often useful to compute the root mean square error (RMSE).

$$\text{RMSE} = \sqrt{1/T \Sigma [S(t) - A(t)]^2}$$

where,

S(t) is the simulated value of the variable in time t

A(t) is the actual historical value of the variable in time t

T is the length of the simulation period

In Table 6.1 we present the results of the historical simulation in terms of the RMSE and a comparison of the RMSE of each variable with its mean.

The fourth column of Table 6.1 gives the ratio of the RMSE to the mean of the variable. For most of the variables the ratio is seen to be less than 10 per cent indicating a satisfactory tracking of the historical paths of these variables. The poorest tracking occurs in the case of budget deficits (BD) with the RMSE to mean ratio as high as 82 per cent . However, since BD does not enter any equation in our model the effects of poor tracking of this variable would be isolated and would not affect the performance of the model.

Subsequent to the dynamic simulation of the model we carried out two policy experiments dealing with two of the control variables, administered energy prices (APEN) and administered non-energy prices (APNE). In the first policy experiment we examined the effect of a 5 per cent increase in energy prices on certain important endogenous variables; in the second we compared the effects of a 5 per cent increase in energy prices versus a 5 per cent increase in non-energy prices on budget deficits.

In Fig. 6.1 we have shown the effect of a 5 per cent increase in energy prices (APEN) on real NDP at factor cost (YNFR). It should be pointed out that for this figure as well as for the others in this section the symbol for the endogenous variable has two kinds of tags associated with it, "S" and "P". For instance, YNFRS denotes the base run simulation of YNFR while YNFRP denotes the path taken on by YNFR consequent to the policy experiment. It is clear from Fig. 6.1 that a 5 per cent increase in energy prices pushes YNFRP below its base run simulation (YNFRS).

Fig. 6.2 shows the effect of a 5 per cent increase in energy prices on the earnings of government enterprises (PUC). As is to be expected, the experimental path of earnings of government enterprises (PUCP) rises above its base run simulation (PUCS).

The effect of a 5 per cent increase in energy prices on the NDP deflator (P) is also as expected. Once again the experimental path of the NDP deflator (PP) is consistently above its base run simulation (PS). This can be clearly seen from Fig. 6.3.

An unexpected result occurs when we examine the effect of a 5 per cent increase in energy prices on budget deficits (BD). Intuitively one would expect that an increase in administered energy prices (APEN) would reduce BD. With an increase in APEN the earnings of government enterprises would be expected to increase and this would raise the non-tax revenues earned by the government. As a result budget deficits would be expected to decline. However, this line of reasoning leaves out of consideration the effect of an

TABLE 6.1. RESULTS OF HISTORICAL SIMULATION

	Variable	Mean	RMSE	RMSE/Mean
1.	YNFA	19,872	969	0.05
2.	YNFM	11,058	973	0.09
3.	YNFT	3,035	262	0.09
4.	YNFS	15,359	344	0.02
5.	YNFR	49,324	2,335	0.05
6.	YGFR	52,808	2,195	0.04
7.	PDI	48,702	2,746	0.06
8.	CETL	41,618	2,182	0.05
9.	CEEN	1,420	91	0.06
10.	GDCT	1,401	120	0.09
11.	GDCF	14,311	711	0.05
12.	DEPR	3,715	443	0.12
13.	KS	175,457	0	0.00
14.	NDCF	10,596	862	0.08
15.	GS	13,494	488	0.04
16.	S	0.257	0.01	0.04
17.	ECAG	14.73	1.87	0.13
18.	ECM	59.94	5.72	0.10
19.	ECTR	50.98	2.82	0.06
20.	ECHO	30.49	2.42	0.08
21.	ENC	161.56	16.72	0.10
22.	ENP	143.76	3.19	0.02
23.	COAL	109.21	3.53	0.03
24.	ELEC	132.85	4.71	0.04
25.	OILC	30.23	4.19	0.14
26.	OILP	17.16	1.02	0.06
27.	OILI	13.07	3.62	0.28
28.	IMP	5,870	437	0.08
29.	WPI	272	4.78	0.02
30.	APTL	66.78	1.00	0.02
31.	NAP	205.27	4.62	0.02
32.	P	2.43	0.12	0.05
33.	YNFN	120,972	6,762	0.06
34.	BD	1,978	1,623	0.82
35.	NDE	16,964	2,000	0.12
36.	TR	11,326	321	0.11
37.	NTR	4,071	321	0.08
38.	CR	10,329	1,897	0.18
39.	PUC	357	29	0.08
40.	IDEB	3,435	185	0.05
41.	M1	25,909	2,312	0.09
42.	GSA	174,756	3,210	0.02

increase in energy prices on the non-developmental expenditures (NDE) of the government as also on the general functioning of the economy as reflected by the real NDP(YNFR). Increases in energy prices (APEN) raise NDE via equations 30 ,32, 33 and 35 and depress the economy via equations 2 and 5. The slowing down of the economy causes tax revenues (TR) and capital receipts (CR) to either increase only marginally or in fact decline. Thus when a much wider view of the effects of a change in energy prices is taken it is clear that the possibility arises that budget deficits, far from declining, may actually increase. Our policy experiment, shown in Fig. 6.4, demonstrates that this, in fact, is the case.

RESULTS OF SIMULATION GRAPHED AS FIGURES 6.1 TO 6.3

year	ynfrs	ynfrp	PS	PP	PUCS	PUCP
1980	44,587	44,466	1.98	2	287	289
1981	48,207	48,007	2.31	2.33	327	331
1982	50,249	49,982	2.62	2.65	374	380
1983	48,974	48,660	2.76	2.78	412	420
1984	50,071	49,715	2.94	2.97	446	456

FIGURE 6.1

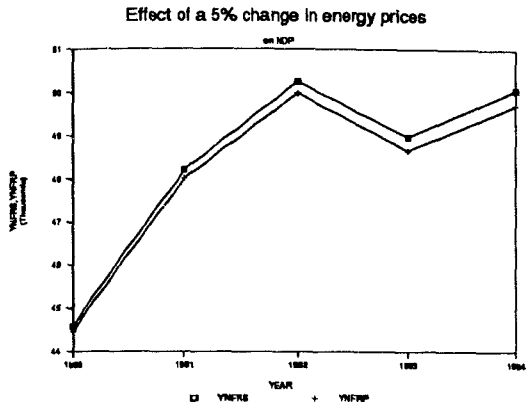


FIGURE 6.2

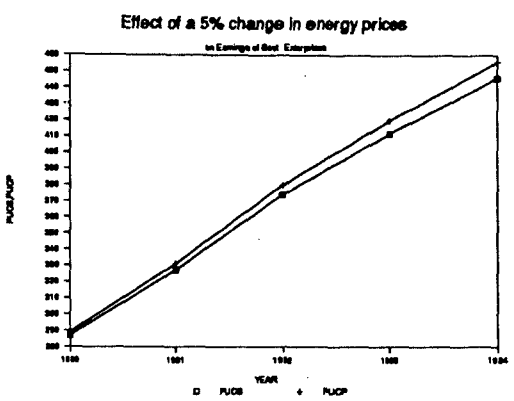


FIGURE 6.3

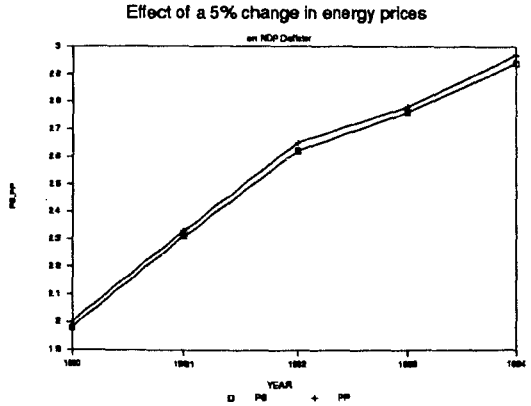


FIGURE 6.4

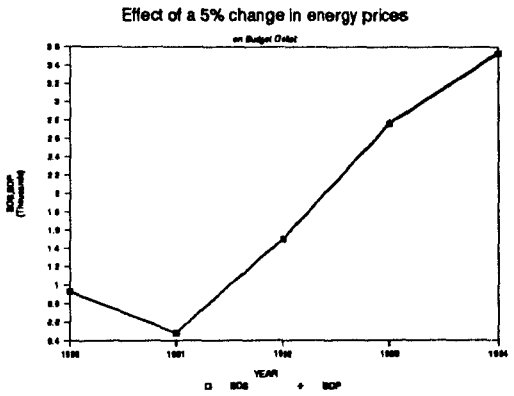
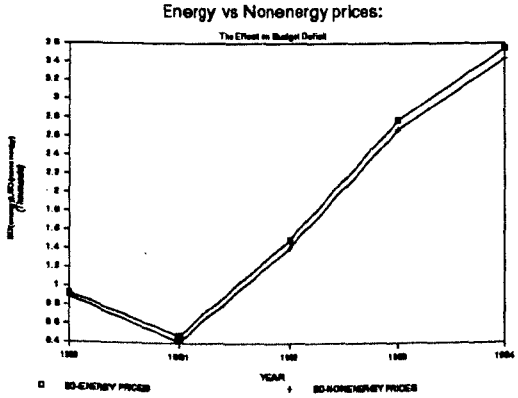


FIGURE 6.5



From Fig. 6.4 it is not immediately apparent that experimental budget deficits (BDP) are higher than the base simulation run (BDS). Table 6.2 has been presented to make the situation clearer.

TABLE 6.2. BUDGET DEFICITS: SIMULATION AND EXPERIMENTAL

(Rs. crores)

Year	BDS	BDP
1979-80	932.73	925.35
1980-81	481.28	481.09
1981-82	1,495.47	1,501.74
1982-83	2,760.97	2,773.67
1983-84	3,526.94	3,545.82

The second experiment compared the effect of a 5 per cent increase in administered energy prices (APEN) vis-a-vis a 5 per cent increase in administered non-energy prices (APNE). In Fig.

6.5 we compare these effects on budget deficits (BD). It is clear from the figure that deficits are lower when APNE increases by 5 per cent as opposed to a similar increase in APEN. This result it will be obvious has very important policy implications. Lowering of BD cannot be achieved by raising administered prices. Certainly this has been seen to be true in our case for the administered prices for energy.

7. EXERCISES IN OPTIMAL CONTROL

In carrying out the exercises in optimal control our main focus of interest was on the three major control variables [administered energy prices (APEN), administered non-energy prices (APNE) and government developmental expenditures (GDE)] and the effect of recommending policy prescriptions for these variable on certain key endogenous variables. To facilitate a clear and cogent analysis of our experiments it was felt that a reduction in the dimension of the model, so that only its essential core was incorporated in the optimal control exercises, would be desirable and would certainly help in keeping the extent of complexity at a manageable level. In pursuit of this aim our original model was pruned of its "inessential" equations and a core model was set up to perform the exercises of this section.

7.1 Core Model

The core model is composed of 18 equations of which 13 are behavioural equations and 5 are identities. There are 18 endogenous variables in the model along with 3 control variables and 8 exogenous variables. Listed below are the endogenous variables (along with the equation numbers corresponding to the original model), the control variables and the exogenous variables of the core model.

Endogenous variables

1. YNFA: Contribution to NDP from agriculture and allied sectors (eqn. 4.1)
2. YNFM: Contribution to NDP from mining, manufacturing, construction and utilities (eqn. 4.2)
3. YNFT: Contribution to NDP from transport and communications (eqn. 4.3)
4. YNFS: Contribution to NDP from services (eqn. 4.4)
5. YNFR: Real NDP at factor cost (eqn. 4.5)
6. ECAG: Energy consumption in agriculture (eqn. 4.17)
7. ECM: Energy consumption in mining and manufacturing (eqn. 4.18)
8. ECTR: Energy consumption in transport (eqn. 4.19)
9. ECHO: Energy consumption in households (eqn. 4.20)
10. ENC: Total energy consumption (eqn. 4.21)
11. APTL: Administered prices (eqn. 4.30)
12. P: NDP deflator (eqn. 4.32)
13. YNFN: Nominal NDP (eqn. 4.33)
14. BD: Budget deficit (eqn. 4.34)
15. NDE: Non-developmental expenditures (eqn. 4.35)
16. TR: Tax revenues (eqn. 4.36)
17. NTR: Non-tax revenues (eqn. 4.37)
18. PUC: Earnings of government enterprises (eqn. 4.38)

RUN1 GRAPHED AS FIGURES 7.1 TO 7.6

HISTORICAL VALUES

year	ynfr	p	bd	gde	apen	apne
1980	44,043	2.01	2,700	7,466	23.95	24.99
1981	47,419	2.23	2,577	9,251	29.97	30.93
1982	49,633	2.43	1,539	10,594	36.17	34.75
1983	50,633	2.63	1,656	12,035	38.89	35.06
1984	54,890	2.85	1,417	14,348	41.86	36.34

OPTIMAL VALUES

year	ynfro	po	bdo	gdeo	apeno	apneo
1980	44,043	2.01	2,700	7,466	23.95	24.99
1981	46,601.79	2.24	3,978.58	9,851.07	28.92	30.82
1982	48,679.99	2.44	4,048.88	11,361.4	34.72	34.6
1983	47,025.86	2.63	2,801.51	13,269.27	36.85	35.17
1984	50,557.12	2.86	3,002.35	15,355.98	39.82	36.08

FIGURE 7.1

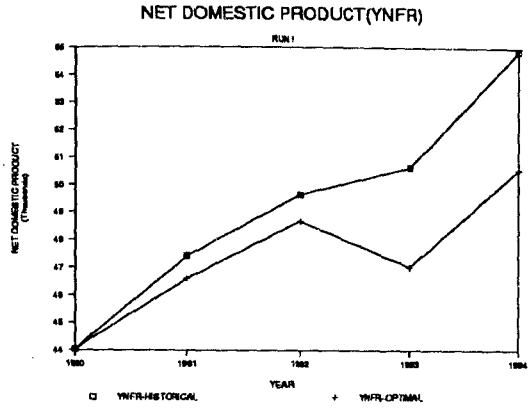


FIGURE 7.2

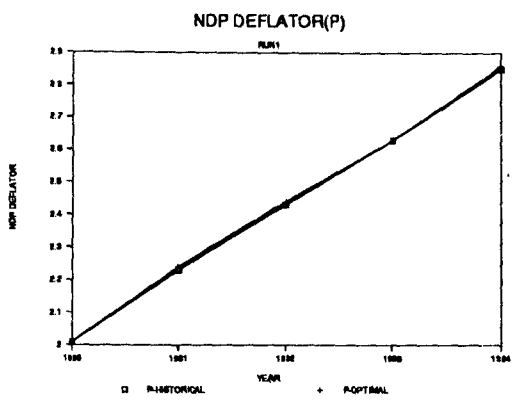


FIGURE 7.3

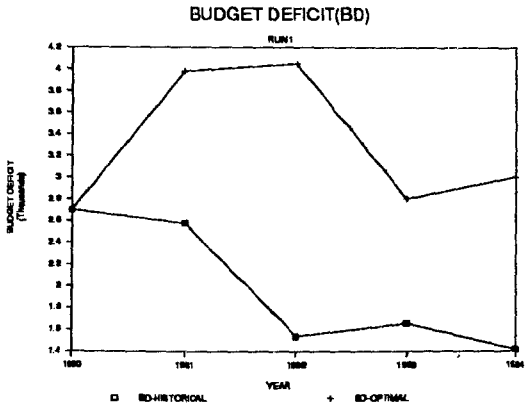


FIGURE 7.4

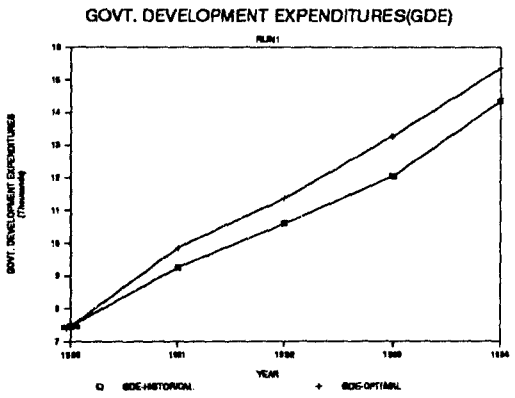


FIGURE 7.5

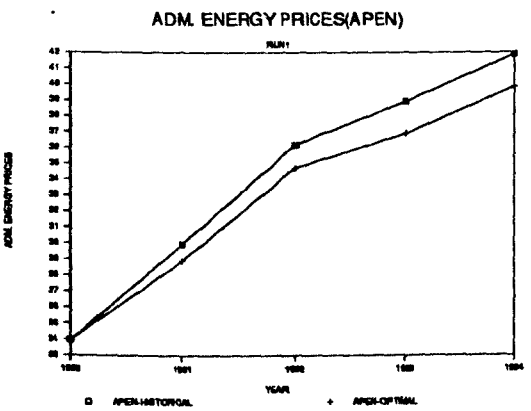
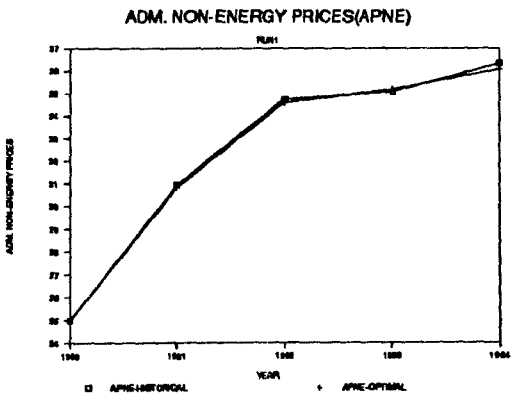


FIGURE 7.6



Control variables

1. APEN: Administered energy prices
2. APNE: Administered non-energy prices
3. GDE: Government developmental expenditures

Exogenous variables

1. CEEN: Private consumption expenditures on energy
2. CR: Capital receipts
3. GDCT: Capital formation in transport
4. GSA: Gross sown area
5. IDEB: Interest payments on internal debt
6. M1: Narrow money
7. RAIN: Rainfall index
8. TIME: Time index

7.2 Optimal Control Runs

Six optimal control runs, wherein a quadratic objective function was minimised subject to the systems equations were carried out using the non-linear programming sub-routine in the GAMS (Generalized Algebraic Modelling Systems) software [see Brooke et al 1988]. We do not discuss the mechanics of the method of optimal control here, but interested readers may look up Pindyck (1973) or Rao (1987) for a lucid exposition. The time span over which the experiments were conducted covered the years 1979-80 to 1984-85. However it has been observed that there is a tendency for the optimal paths of some variables to behave peculiarly over the terminal period because whatever happens beyond the time horizon is overlooked by the cost functional. The way out of this situation is to ignore the time path for the last year and consider, in our case, the years 1979-80 to 1983-84.

7.2.1 Run 1

In the first run we were merely concerned with examining how well the optimal paths of the state and control variables tracked their historical paths which were the nominal paths specified for this run. From the set of state variables our attention was focused on only two variables of interest, that is, only two were given non-zero (positive) weights in the penalty matrix, Q. These variables of interest were real NDP at factor cost (YNFR) and the NDP deflator(P) and equal relative weights (=1) [see Pindyck, 1974 for this procedure] were specified for both. The remaining 16 state variables were assigned zero weights in the Q matrix. However, the behaviour of some of these variables, especially budget deficits, was closely monitored throughout the experiments.

All the three control variables, administered energy prices (APEN), administered non-energy prices (APNE) and government developmental expenditures (GDE) were assigned equal relative weights (=1) in the R matrix, the penalty matrix for the control variables.

The Q and R matrices for this run were:

Q Matrix	Weights
YNFR	1
P	4.12E+08
R Matrix	
APEN	250000
APNE	275000
GDE	1

Selected results of this run are shown graphically in Figs. 7.1 to 7.6. The optimal policy as far as administered non-energy prices are concerned is one of very close tracking of the nominal path (Fig. 7.6). However, considerable divergence is noticeable between the optimal and historical paths of administered energy prices (Fig. 7.5) and government developmental expenditure (Fig. 7.4). In fact, even though the optimal path of GDE lies above its nominal path the optimal rate of growth of real NDP (YNFR) is seen to be only 3.7 per cent p.a. as against the nominal rate of growth of 6.2 per cent p.a. (Fig. 7.1). The nominal path of the NDP deflator (P) is tracked very closely (Fig. 7.2), though the optimal path of budget deficits lies considerably above its nominal path (Fig. 7.3).

7.2.2 Run 2

In this experiment the cost coefficients on each of the three control variables were substantially increased in an effort to increase the congruence between their nominal and optimal paths and also to try and bring about a closer correspondence between nominal and optimal budget deficits.

The Q and R matrices for this run are given below.

Q Matrix	Weights
YNFR	1
P	4.12E+08
R Matrix	
APEN	2.50E+08
APNE	2.75E+08
GDE	1000

Figs. 7.7 to 7.12 depict selected results of this run. The optimal policies for each of the control variables track perfectly their nominal paths. However, since government developmental expenditures (GDE) are much lower for Run 2 as compared to Run 1 , there is a greater divergence between the optimal path of real NDP (YNFR) from its nominal path (Fig. 7.7). The optimal path of the NDP deflator lies consistently above its nominal path (Fig. 7.8) mainly because the optimal path of APEN for this run is higher than the corresponding path for Run 1. The most dramatic change occurs with respect to the optimal path of budget deficits (Fig. 7.9) as compared to its optimal path for Run 1(Fig.7.3). Consequent to the lower optimal rate of growth of government developmental expenditures (23.1 per cent p.a.) for this run as compared to Run 1 (26.4 per cent p.a.) budget deficits experience a steep fall for the years 1983 and 1984.

An alternative weighting pattern was tried out for the Q matrix wherein instead of imposing equal relative weights on YNFR and P, equal relative weights were placed on YNFA, YNFM, YNFT and YNFS (the components of YNFR) and P. Run 2 was repeated with the following Q matrix.

Q Matrix	Weights
YNFA	1
YNFM	3
YNFT	42
YNFS	2
P	6.69E+07

The results of Run 2 with the modified Q matrix were naturally identical to those with the original Q matrix and are not presented here. It may be pointed out that in the formulation of the Q matrix for the subsequent optimal control runs the components of real NDP, namely, YNFA, YNFM, YNFT, and YNFS have been incorporated in place of the composite YNFR.

RUN2 GRAPHED AS FIGURES 7.7 TO 7.12

HISTORICAL VALUES

year	ynfr	p	bd	gde	apen	apne
1980	44,043	2.01	2,700	7,466	23.95	24.99
1981	47,419	2.23	2,577	9,251	29.97	30.93
1982	49,633	2.43	1,539	10,594	36.17	34.75
1983	50,633	2.63	1,656	12,035	38.89	35.06
1984	54,890	2.85	1,417	14,348	41.86	36.34

OPTIMAL VALUES

year	ynfro	po	bdo	gdeo	apeno	apneo
1980	44,043	2.01	2,700	7,466	23.95	24.99
1981	46,355.51	2.25	3,359.72	9,251.75	29.97	30.93
1982	48,257.89	2.46	3,258.12	10,594.96	36.17	34.75
1983	46,354.98	2.65	1,557.97	12,036.46	38.89	35.06
1984	49,826.27	2.9	1,972.89	14,349.18	41.86	36.34

FIGURE 7.7

NET DOMESTIC PRODUCT(YNFR)

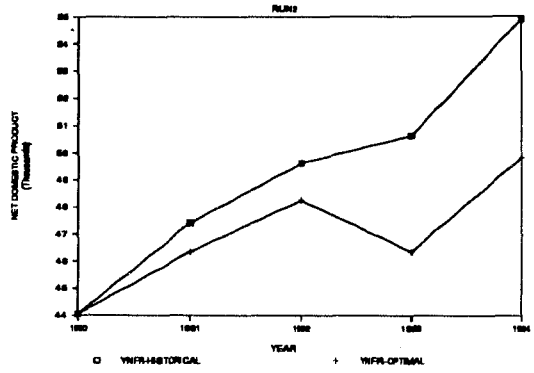


FIGURE 7.8

NDP DEFLATOR(P)

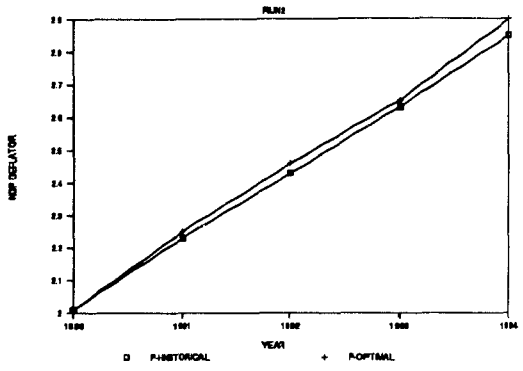


FIGURE 7.9

BUDGET DEFICIT(BD)

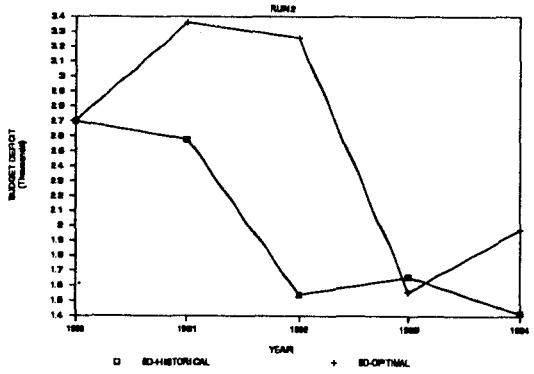


FIGURE 7.10

GOVT. DEVELPOMENT EXPENDITURES(GDE)

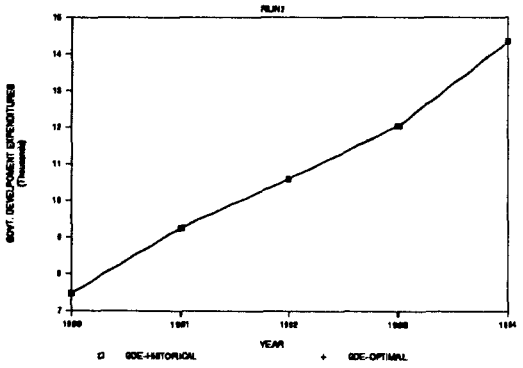


FIGURE 7.11

ADM. ENERGY PRICES(APEN)

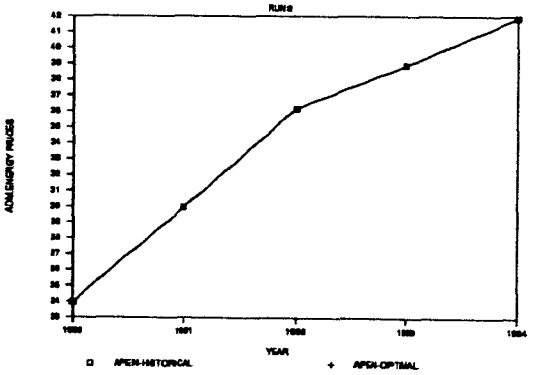
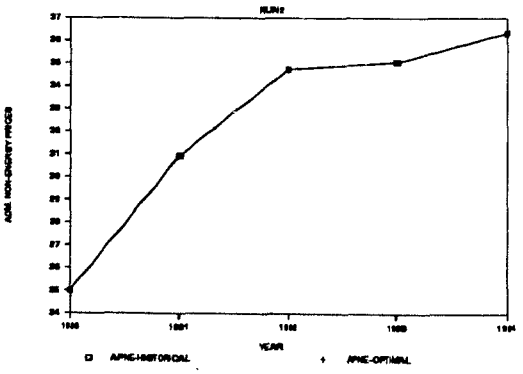


FIGURE 7.12

ADM. NON-ENERGY PRICES(APNE)



7.2.3 Run 3

The third and final run with historical values of state and control variables was run with a considerable reduction in the penalty associated with government development expenditures (GDE). This was done for the express purpose of bringing about a better congruence between the nominal and optimal paths of real NDP (YNFR). The Q and R matrices employed for this run are given below.

Q Matrix	Weights
YNFA	1
YNFM	3
YNFT	42
YNFS	50
P	6.69E+07
R Matrix	
APEN	2.50E+08
APNE	2.75E+08
GDE	1

Reducing the weight on GDE has the effect of pushing its optimal path far above its nominal path (Fig. 7.18). The optimal rate of growth of GDE rises to as high as 45 per cent p.a. as against the nominal rate of growth of 23 per cent p.a.. The higher optimal path of GDE has a salutary effect on real NDP (YNFR) which registers an optimal rate of growth of 5.1 per cent p.a. as compared to 3.3 per cent p.a. for Run 2. Budget deficits expectedly experience a substantial increase (Fig. 7.15). The other results of Run 3 have been presented on the following pages.

7.2.4 Run 4

For this run as well for the next two we experiment with some desired paths for administered prices which are different from their historical paths. The state variables and the control variable, government developmental expenditures (GDE), however continue to assume their historical values. For this particular run we assume that administered energy prices (APEN) increase at the rate of 5 per cent p.a. while administered non-energy prices (APNE) take on historical values.

The Q and R matrices follow a pattern similar to those of the previous runs with only some of the state variables being assigned weights though all the three control variables are weighted. The penalty matrices for this run are given below and it may be pointed out that the state variables have been given equal relative weights as have been the control variables.

Q Matrix	Weights
YNFA	1
YNFM	3
YNFT	42
YNFS	2
P	6.69E+07
R Matrix	
APEN	250,000
APNE	275,000
GDE	1

RUN3 GRAPHED AS FIGURES 7.13 TO 7.18

HISTORICAL VALUES

year	ynfr	p	bd	gde	apen	apne
1980	440,43	2.01	2,700	7,466	23.95	24.99
1981	474,19	2.23	2,577	9,251	29.97	30.93
1982	496,33	2.43	1,539	10,594	36.17	34.75
1983	506,33	2.63	1,656	12,035	38.89	35.06
1984	548,90	2.85	1,417	14,348	41.86	36.34

OPTIMAL VALUES

year	ynfro	po	bdo	gdeo	apeno	apneo
1980	44,043	2.01	2,700	7,466	23.95	24.99
1981	48,701.34	2.25	13,223.03	19,332.48	29.96	30.93
1982	51,534.51	2.46	13,055.78	20,724.51	36.16	34.75
1983	50,089.14	2.65	11,058.76	21,945.99	38.88	35.06
1984	53,136.38	2.9	8,315.7	21,086.72	41.86	36.34

FIGURE 7.13

NET DOMESTIC PRODUCT(YNFR)

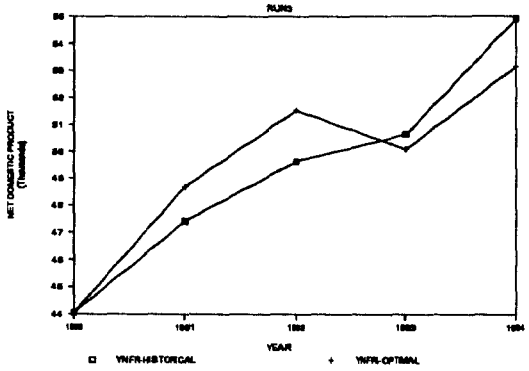


FIGURE 7.14

NDP DEFLATOR(P)

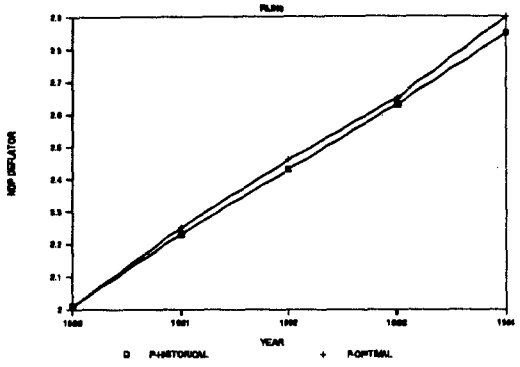


FIGURE 7.15

BUDGET DEFICIT(BD)

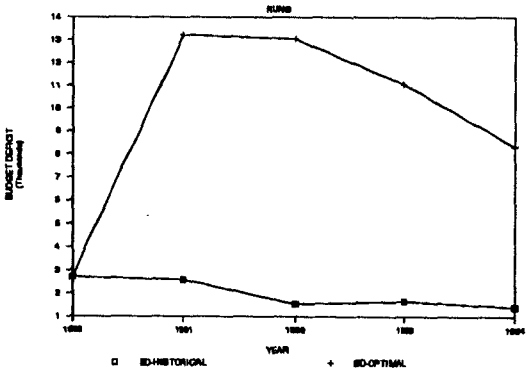


FIGURE 7.16

GOVT. DEVELOPMENT EXPENDITURE(GDE)

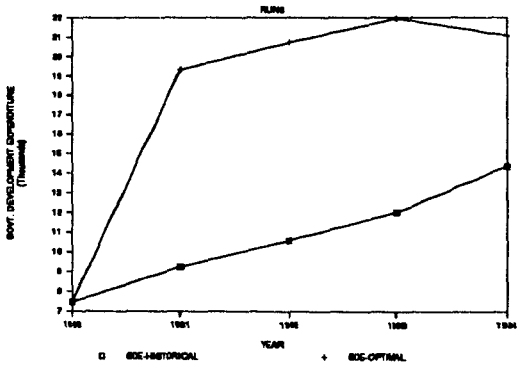


FIGURE 7.17

ADM. ENERGY PRICES(APEN)

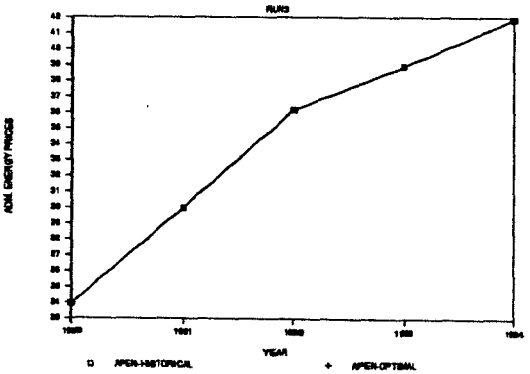
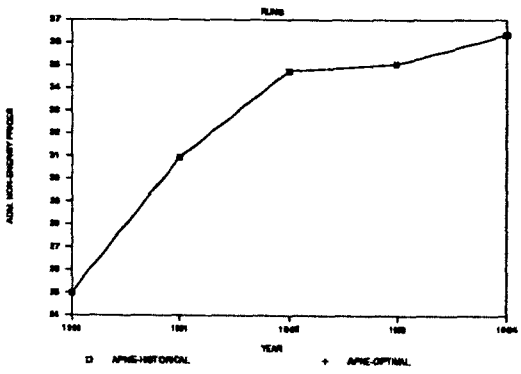


FIGURE 7.18

ADM. NON-ENERGY PRICES(APNE)



Selected results of this run are displayed in Figs. 7.19 to 7.24. and are best appreciated if compared to the results of Run 1. One can see that the gap between the optimal and nominal paths of real NDP (YNFR) is considerably narrowed down for this run (Fig. 7.19) as compared to that of Run 1 (Fig. 7.1). Also the optimal path of budget deficits (BD) is much lower for this run (Fig. 7.21) as compared to Run 1 (Fig. 7.3). The behaviour of budget deficits reinforces the conclusions of the policy experiments that, contrary to what one might expect, a lowering of administered energy prices actually reduces budget deficits. With respect to the NDP deflator (P) it is clear that the tracking is rather poor (Fig. 7.20) as compared to that of Run 1 (Fig. 7.2).

As far as the control variable administered energy prices (APEN) is concerned the optimal policy does not track very well the desired path set for it (Fig. 7.23). However, the tracking is seen to be much better in the case of administered non-energy prices (APNE) and government developmental expenditures (GDE) (Figs. 7.24 and 7.22).

RUN4 GRAPHED AS FIGURES 7.19 TO 7.24

HISTORICAL VALUES

year	ynfr	p	bd	gde	apen	apne
1980	44,043	2.01	2,700	7,466	23.95	24.99
1981	47,419	2.23	2,577	9,251	25.15	30.93
1982	49,633	2.43	1,539	10,594	26.41	34.75
1983	50,633	2.63	1,656	12,035	27.73	35.06
1984	54,890	2.85	1,417	14,348	29.12	36.34

OPTIMAL VALUES

year	ynfro	po	bdo	gdeo	apeno	apneo
1980	44,043	2.01	2,700	7,466	23.95	24.99
1981	46,884.97	2.19	3,803.65	9,587.47	25.52	31.07
1982	49,331.4	2.34	3,435.13	10,538.8	27.52	35.07
1983	48,001.16	2.51	2,368.4	12,582.1	28.25	35.5
1984	51,780.89	2.73	2,495.92	14,543.22	29.83	36.77

RUN5 GRAPHED AS FIGURES 7.25 TO 7.30

HISTORICAL VALUES

year	ynfr	p	bd	gde	apen	apne
1980	44,043	2.01	2,700	7,466	23.95	24.99
1981	47,419	2.23	2,577	9,251	25.15	30.93
1982	49,633	2.43	1,539	10,594	26.41	34.75
1983	50,633	2.63	1,656	12,035	27.73	35.06
1984	54,890	2.85	1,417	14,348	29.12	36.34

OPTIMAL VALUES

year	ynfro	po	bdo	gdeo	apeno	apneo
1980	44,043	2.01	2,700	7,466	23.95	24.99
1981	46,910.51	2.185	3,779.82	9,554.57	25.16	31.08
1982	49,425.63	2.326	3,398.801	10,474.35	26.54	35.12
1983	48,073.49	2.499	2,335.525	12,533.95	27.79	35.52
1984	51,865.62	2.718	2,474.913	14,501.05	29.2	36.8

FIGURE 7.19

NET DOMESTIC PRODUCT(YNFR)

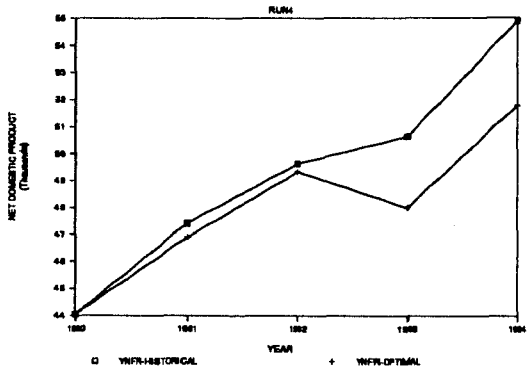


FIGURE 7.20

NDP DEFLATOR(P)

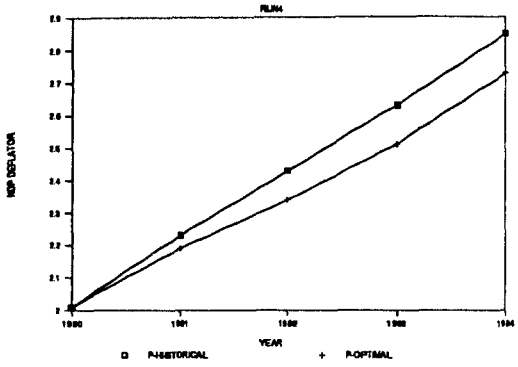


FIGURE 7.21

BUDGET DEFICIT(BD)

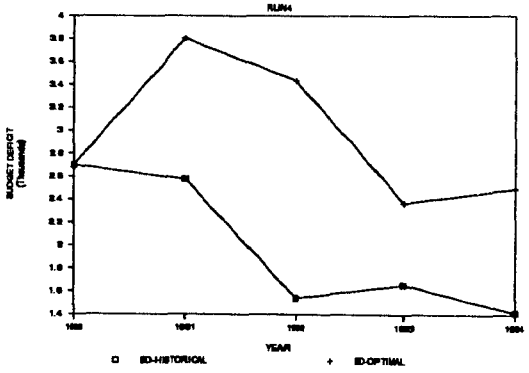


FIGURE 7.22

GOVT. DEVELOPMENT EXPENDITURES(GDE)

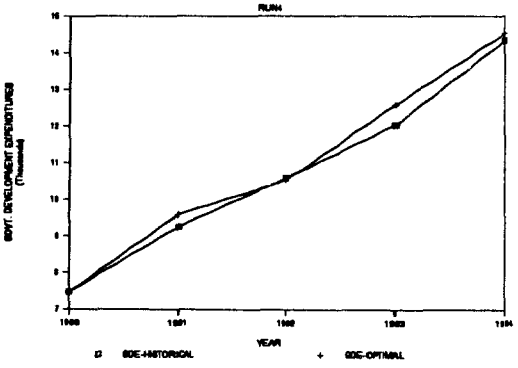


FIGURE 7.23

ADM. ENERGY PRICES(APEN)

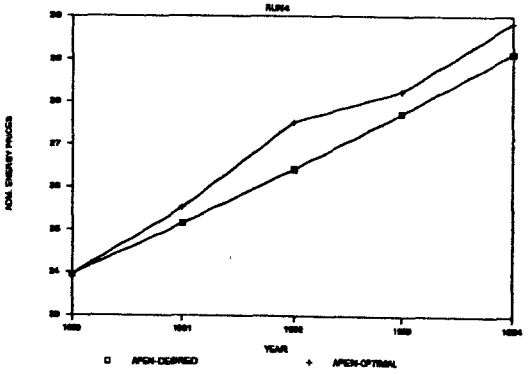


FIGURE 7.24

ADM. NON-ENERGY PRICES(APNE)

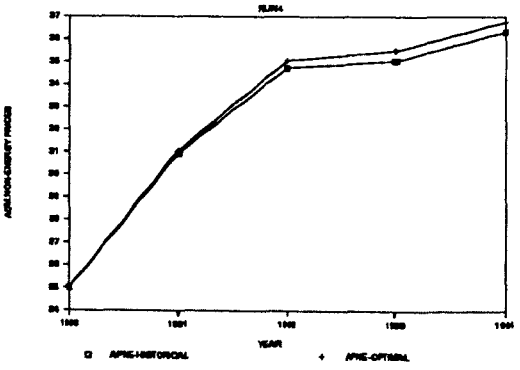


FIGURE 7.25

NET DOMESTIC PRODUCT(YNFR)

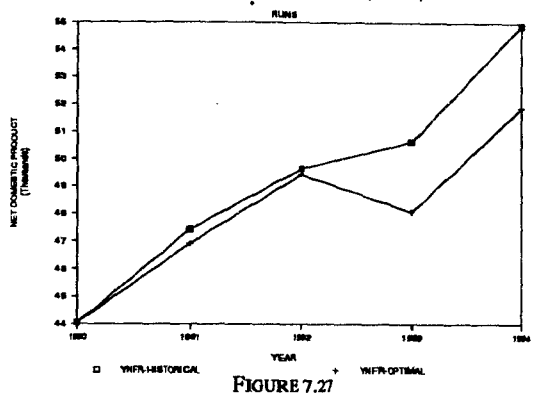


FIGURE 7.26

NDP DEFLATOR(P)

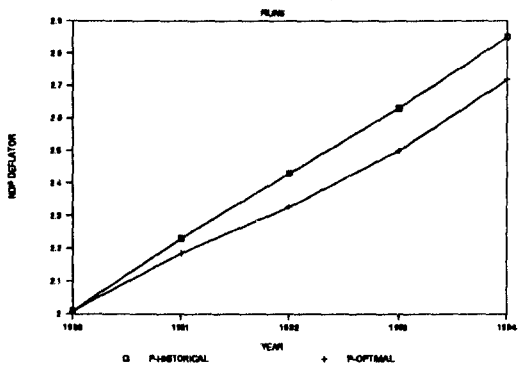


FIGURE 7.27

BUDGET DEFICIT(BD)

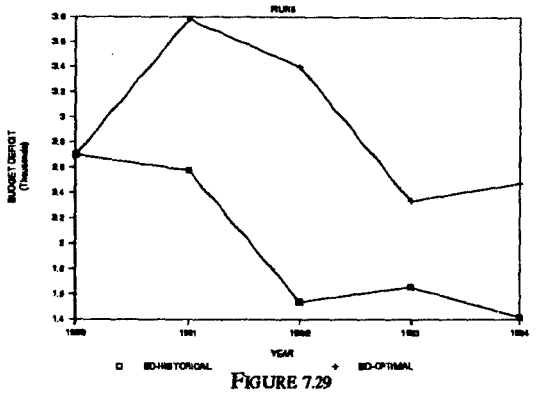


FIGURE 7.28

GOVT. DEVELOPMENT EXPENDITURES(GDE)

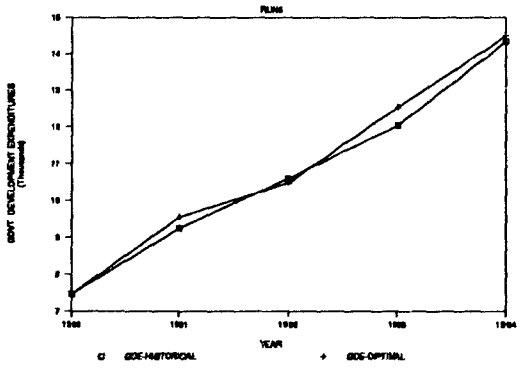


FIGURE 7.29

ADM. ENERGY PRICES(APEN)

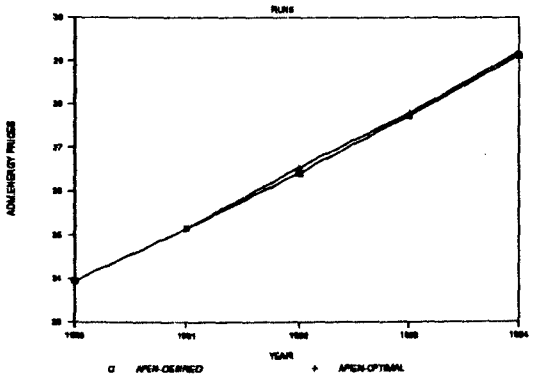
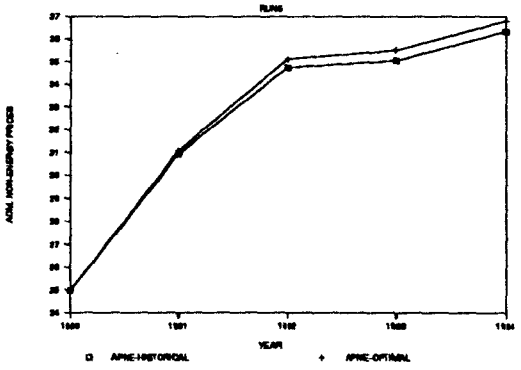


FIGURE 7.30

ADM. NON-ENERGY PRICES(APNE)



7.2.5 Run 5

Since the optimal policy for APEN did not track the desired path very well in Run 4, for this run we increased the weight on this control variable 10 times. The Q and R matrices used are given below.

Q Matrix	Weights
YNFA	1
YNFM	3
YNFT	42
YNFS	2
P	6.69E+07
R Matrix	
APEN	2.50E+0.6
APNE	275,000
GDE	1

The results of this run (Figs. 7.25 to 7.30) are very similar to those of Run 4. The only noticeable difference is that the optimal policy with respect to APEN now tracks its desired path much more closely.

7.2.6 Run 6

For the final run of our control experiments we imposed the following two conditions:
a) the sum of administered energy prices (APEN) and administered non-energy prices (APNE) should equal the historical values of administered prices (APTL).
b) *APEN increases at 5 per cent p.a.*

The effect of these two conditions holding jointly is to ensure a higher desired rate of growth of APNE (24 per cent p.a.) as compared to its historical growth rate of 11.4 per cent p.a.

The Q and R matrices for this run are given below:

Q Matrix	Weights
YNFA	1
YNFM	3
YNFT	42
YNFS	2
P	6.69E+07
R Matrix	
APEN	250,000
APNE	275,000
GDE	1

Once more, as in the case of Run 4, we compare the results of this run (Figs. 7.31 to 7.36) with those of Run 1. Clearly the optimal rate of growth of real NDP (YNFR) is much higher at 4.4 per cent p.a. for Run 7 as compared to 3.7 per cent p.a. for Run 1. The negative side of the picture is that prices as reflected in the NDP deflator (P) also rise at a faster rate of 11.01 per cent p.a. as opposed to 10.57 per cent p.a. in the case of Run 1. The results with respect to budget deficits (BD) are once more very interesting. The optimal BD for Run 6 is much lower than that for Run 1. This means that even if total administered prices (APTL) stay at the same level but the energy component declines budget deficits fall. The significant policy implications of this result can well be appreciated: raising administered non-energy prices lowers budget deficits while raising administered energy prices increases budget deficits.

RUN6 GRAPHED AS FIGURES 7.31 TO 7.36

HISTORICAL VALUES

year	ynfr	p	bd	gde	apen	apne
1980	44,043	2.01	2,700	7,466	23.95	24.99
1981	47,419	2.23	2,577	9,251	25.15	35.75
1982	49,633	2.43	1,539	10,594	26.41	44.51
1983	50,633	2.63	1,656	12,035	27.73	47.22
1984	54,890	2.85	1,417	14,348	29.12	49.08

OPTIMAL VALUES

year	ynfro	po	bdo	gdeo	apeno	apneo
1980	44,043	2.01	2,700	7,466	23.95	24.99
1981	46,901.36	2.25	3,621.997	9,567.829	25.316	35.668
1982	49,373.36	2.468	3,032.858	10,503.96	27.085	44.375
1983	48,062.76	2.666	1,838.238	12,539.60	27.708	47.094
1984	51,856.19	2.895	1,880.091	14,504.95	29.25	48.922

FIGURE 7.31

NET DOMESTIC PRODUCT(YNFR)

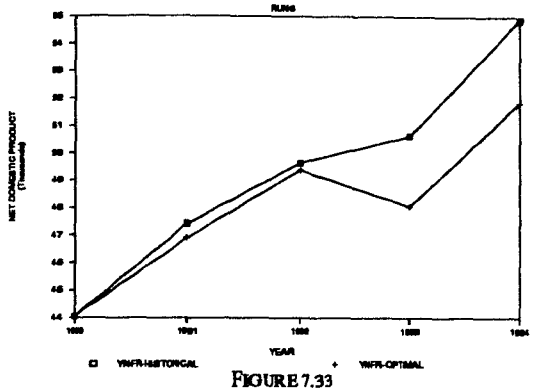


FIGURE 7.32

NDP DEFLATOR(P)

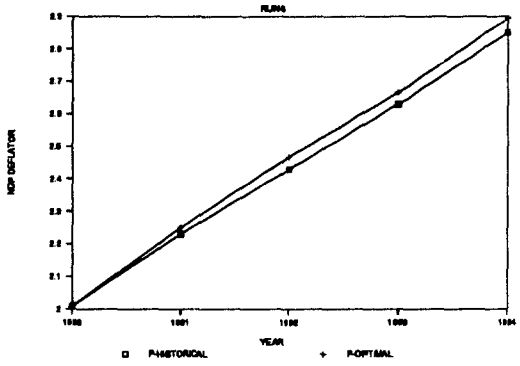


FIGURE 7.33

BUDGET DEFICIT(BD)

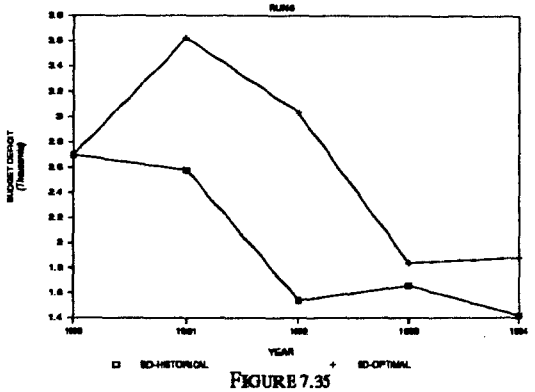


FIGURE 7.34

GOVT. DEVELOPMENT EXPENDITURES(GDE)

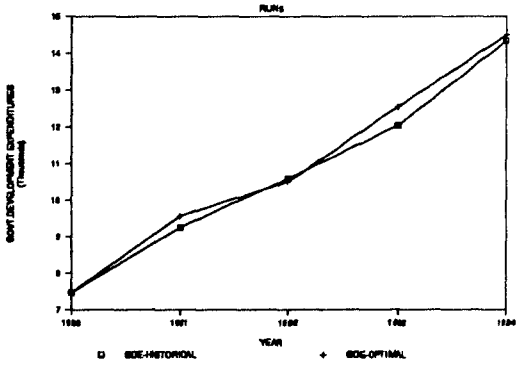


FIGURE 7.35

ADM. ENERGY PRICES(APEN)

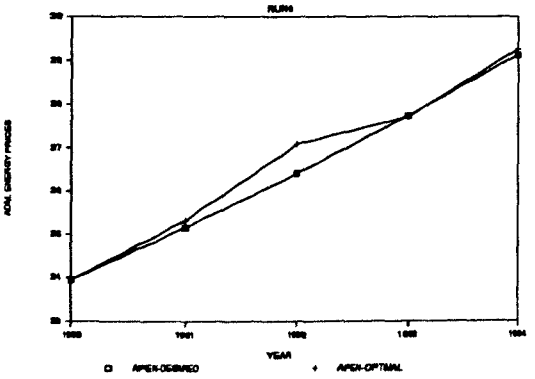
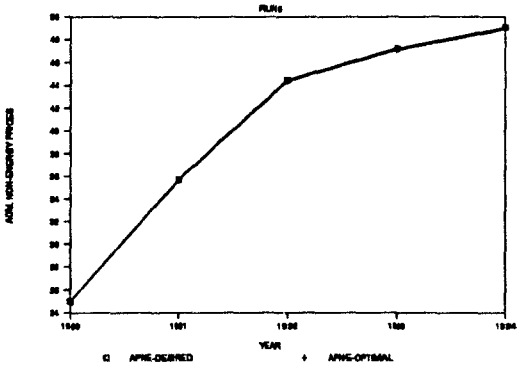


FIGURE 7.36

ADM. NON-ENERGY PRICES(APNE)



8.DISCUSSION OF THE MAIN FINDINGS

In this paper we have been concerned with trying to analyze the effects of changes in administered prices on the macro-economy of India. We have especially been concerned with examining the impact of such changes on budget deficits and the growth of the economy. For this purpose we have divided administered prices into two components, administered energy and administered non- energy prices, and the effects of changes in each component has been studied separately in the context of a macroeconometric model of the Indian economy.

It has often been observed in the past that the government has sought to raise revenues and thus reduce budget deficits through increases in administered prices. Such a strategy is likely to succeed, if at all, only in the case of administered non-energy prices. Increases in administered energy prices far from reducing budget deficits will in fact increase them. The main reason for this is that even though hikes in administered energy prices raise non-tax revenues via increases in the earnings of government enterprises, tax revenues decline as a consequence of the slowing down of the economy. In addition, the non-developmental expenditures of the government also rise at the same time thereby contributing to the pressure on budget deficits. On the other hand, our exercises have shown that increases in administered non-energy prices do not lead to an increase in budget deficits. It is not very difficult to identify the crucial difference between the ways in which the effects of changes in the two components of administered prices are transmitted through the economy. An increase in administered energy prices has an unmistakable adverse impact on the growth of the economy via a slowing down of the mining and the manufacturing sector (see equation 4.2). Since the output of this sector also determines the growth of the transport and communications sector (see equation 4.3) and that of the services sector (see equation 4.4) an increase in administered energy prices has an indirect adverse impact on the growth in these two sectors. Naturally, since three of the four sectors of the economy are adversely affected by increases in energy prices the overall growth of the economy is also adversely affected. The slowing down of the economy consequently has a depressing influence on tax revenues collected by the government, the net result of which is to raise budget deficits in response to a hike in administered energy prices.

In contrast, changes in administered non-energy prices do not, in view of the specification of our model, seem to lead to a slowing down of the economy. An increase in non-energy prices raises nominal NDP at factor cost via equations 4.30, 4.32 and 4.33 which in turn has a beneficial effect on tax revenues and non-tax revenues collected by the government (see equations 4.36 and 4.37). Of course non-developmental expenditures of the government increase but the net effect of a change in administered non-energy prices is to lower budget deficits.

9.CONCLUSIONS

The results of our study have demonstrated clearly the crucial role played by administered prices in the Indian economy. Further the division of administered prices into two components - administered energy and administered non-energy prices - has enabled us to study in detail the dynamics of a change in either component vis-a-vis the macro-economy and permitted us to highlight, especially, one very important policy implication to emanate from our research. This important policy implication is the following: the government should leave well enough alone administered prices if it is to manage better its budget deficits. This has been rather forcefully demonstrated to be true in the case of administered energy prices. For the various reasons discussed in connection with the specification of equation 4.2, we have not been able to forcefully demonstrate the *differential* effects of changes in administered energy and non-energy prices on budget deficits. Surely, that should be an important agenda for future research.

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DOCUMENTATION

Beginning with this issue, we are introducing a new section called Documentation. Its purpose 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 recommendations of official documents or parts thereof for inclusion in this section.

In the present section, parts of the following two documents are published.

1. Task Force on Planning and Urban Development, Planning Commission, Government of India, September, 1983. Chapters VIII-IX. Urban Land Policy

2. Report of the National Commission on Urbanisation, Government of India, August, 1988. Vol. II. Chapter 11. Housing

URBAN LAND POLICY

Planning Commission, Government of India

In order to examine issues related to the Strategy of Urban and Housing Development, the Planning Commission, Government of India, appointed, on January 25, 1983, four Task Forces. The first of these was on Planning and Urban Development. Its report was published in September, 1983. In the following, we reproduce a part of its section on Urban Land Policy comprising Chapters VIII and IX.

8.1. The transition of land use from agricultural to non-agricultural activities is centred on the urbanisation process along with the concentration of population. When the process of urbanisation was slow, the transition in land use was equally slow and public management of land was neither necessary nor desirable. With cities growing at 3-4 per cent per annum on average and the faster growing cities such as Bangalore and Delhi at even higher rates, public participation in the land market becomes inevitable as well as desirable. The question then becomes what the objectives of urban land policy are and, consequently, which types of participation are useful and which are not.

8.2. The objectives outlined by the Urban Land Policy Committee appointed by the Government of India (Ministry of Health) in 1965 still broadly hold true:

(i) To achieve an optimum social use of urban land.

(ii) To make land available in adequate quantity at the right time and for reasonable prices to both public authorities and individuals.

(iii) To encourage cooperative community effort and bonafide individual builders in the field of land development, housing and construction.

(iv) To widen the base of land ownership specially to safeguard the interest of the poor and underprivileged sections of urban society.[1]

8.3. Given the general population pressure on land and the expenses inherent in the conversion of land into urban uses, it is necessary to add additional fifth and sixth objectives (of urban land policy) which will assume greater and greater importance in the context of rapid urban growth in the years to come:

(v) To encourage the socially and economically efficient allocation of urban land such that land development is done in a resource conserving manner and that the magnitude of land used is optimal.

(vi) To promote flexibility in land use in response to changes resulting from a growing city.

8.4. The aim of this Task Force is to review existing urban land policy critically and to suggest measures in urban land policy which make it more likely that the foregoing six objectives are achieved in practice.

8.5. Analysis of the structure of cities shows that a tight relationship exists between the land market and the allocation of economic activities in a city. As a consequence, the formulation of urban land policy must be done on the basis of an understanding of urban processes and particularly how they are affected by growth. Because of the durability of urban structures, what is done now in land policy determines the physical structure of a city for a time considerable into the future. It is argued here that it is because of the uncertainties related to the future that land policy must be formulated with caution but yet should be flexible enough so that exigencies of the future can be coped with without major disruptions.

8.6. Certain regularities in the structure of cities that are observed around the world can be suggested as guidelines toward understanding the operation of the urban land market and how it is affected by and how it affects city growth. The idea is not that the regularities observed elsewhere must also be true for India. More correctly, the regularities should be regarded as a consequence of the reasons for the existence of cities and the functions that they perform, and ought therefore to apply to India as well. People essentially congregate in a city in order to take advantage of improved employment opportunities provided as

1. This is changed from the original which reads "To prevent concentration of land ownership in a few private hands and specially safeguard....."

a result of the concentration of a variety of activities which have their own multiplier effect. Concentration is therefore of the essence to the functioning of a city: it is the *raison de'tre* of a city's existence. Despite the very high concentration that is observed in our traditional cities, it has been a legacy of colonial rule that deconcentration, dispersal of activities, the planning of garden cities and suburbs, and particularly the concept that the rulers (white city or civil lines) must turn away from the ruled (black city or the bazar area) has received much greater attention in the formulation of urban land policy as well as urban planning in general. It is easy to appreciate why our colonial rulers disliked concentration. First, they were not interested in, on the contrary, were opposed to the generation, of urban economic activity. Second; planning of cities, to the extent it was done, was mainly of civil lines and cantonments and the objective there was maximisation of standards and comfort and environment for themselves and the maximum of distance from the natives. Third, concentration helps organisation of political activity and this was not in their interest either. These notions, still persist in our concepts in profear forms, not always explicit. The ideal of a good city even today is one that is unproductive but yet one that provides a pleasing environment for the ruling class—and that includes us planners, academics, administrators and politicians.

8.7. Such concepts were quite rational from the point of view of colonial rulers, who were careful to shed such fancy notions. It is interesting that similar norms were not followed in their home country. Manchester, Birmingham, Glasgow and London were anything but garden cities. They were crowded and grimy but were incredible. We must understand that crowding, face to face transactions, even congestion, are essential to the process of income generation from commerce, services and industry. Urban land policy must be so framed that people are aided in augmenting the economic activities that make a city and in finding appropriate shelter in locations close to their place of livelihood.

8.8. The accent in urban land policy, to the extent it has been articulated, has been on objective (4) and to some extent spelt out in the second paragraph of this section. There has been continuing concern over "unwarranted", "undesirable" and unprecedented increases in urban land values over almost the whole planning period. Each planning document regards the control of urban land values as a major objective in urban policy. There has been a percept in that urban land prices have been rising very rapidly and that this has somehow been the result of excessive concentration in the ownership of urban land. As a result the last quarter century has seen a series of attempts at achieving objectives 2 & 4 but which, in balance, have probably accentuated the problems that were sought to be solved. Despite the concern over urban land values and its pattern of ownership and concentration it is strange that no organised attempt has been made at data collection in order to find out what has actually happened to either urban land values or its pattern of ownership. Hence most pronouncements in the trend of land values are based on conjectures or casual observations.

In pre-colonial India, Delhi, Hyderabad, Lucknow, Lahore, etc. were growing too but active producers of wealth. We may blame the structure of parts of our cities to our colonial heritage but we are responsible for our continuance of these modes of thinking. It is in the new towns, new state capitals and the national capital where the strongest evidence of such urban land policy is most visible. To the extent that they reflect our aspirations, expanding old towns are also avidly copying them. Let us count how. First, the land policy has been such as to discourage high densities of residence as well as of employment. Second, employment has been sought to be dispersed. Third, except unavoidably in the steel cities, industry is discouraged except in designated industrial estates. Fourth, the allocation of land has assumed that the poor do not exist. This is particularly ironic since much of the rationale behind public acquisition of land at low prices from the original farmers has been to arrest the rise in land prices so that the poor are not deprived of access to land for shelter as they are in a speculative private market. Fifth, in many places, even commerce has been discouraged in the sense that land allocation for traditional type

markets is looked down upon. In short, much of urban land policy where it has been formulated has been 'anti-people and prorich'.

8.9. Most attention is naturally focussed on the newly developing areas where new land development and construction is typically going on. Rapid land value increases would be expected in such areas—and should take place—leading to massive windfall gains in certain geographical areas to the neglect of others. In an evolving land value pattern in which different degrees of land price appreciation take place it is quite reasonable to expect that an uninformed perception would be heavily biased towards areas of high appreciation. This problem is not peculiar to India alone. It is therefore necessary to understand the role of the price of land in the allocation and distribution of urban activities.

8.10. While it is commonplace to hear that the price of land has risen in an "unwarranted" manner in urban areas it is not always clear what such a statement means. The observed price of any commodity is essentially a distribution around some mean and it is usually not too difficult to find this mean. The variance in the observed prices of other commodities is small. The problem with urban land is that it possesses a value because of its particular location rather than its intrinsic characteristics. Wide fluctuations in prices within the same area are unlikely but prices in different areas can vary widely. It is difficult to talk about the mean price of land since it has a very high variance within a town.

8.11. Conceptually, we can think of the price of land as being affected by three sets of characteristics:

(i) site specific characteristics (intrinsic quality of land).
(ii) neighbourhood qualities (amenities); and
(iii) access characteristics.

8.12. The influence of (i) is relatively minor as compared with that of (ii) and (iii). The main determinant of urban land value is the attractiveness of location—or the intensity of its access characteristics. Thus, typically, land in the central city which has close access to centres of employment and commerce has very high value and that at the periphery, relatively low value. In a monocentric city, the distance from the city centre is the key determinant of land price; distance being a proxy for the access characteristics of a particular plot of land.

8.13. At the very edge of the city, land values approach the existing value of land in alternative uses. At the very edge of the city then, the value of undeveloped land would approach the value of agricultural land. As the city grows and the boundary shifts, the value of land increases at the old boundary so that there is a gradual decline toward the new boundary. If the profile of cities and if land values increase everywhere, the *proportional* increase at the periphery is likely to be phenomenal as compared with the values nearer the city centre. *It is often these increases that are most perceived and regarded as unwarranted when it should be understood that such increases in value are intrinsic to the process of urban growth.*

8.14. Once a pattern of land price surface changes, how does one decide whether these changes are warranted or unwarranted? If land value measures some kind of accessibility value then the increase in the size of a city's population can be said to increase the accessibility (or opportunity set) for everyone in the city. The increase in value of land in that case really measures the increase in its "productivity" and is, in that sense, justified. But when does speculation or unwarranted rise exist?

Speculation

8.15. Speculation can exist both in a competitive market and in a monopoly situation. *Speculation can be defined as the buying and selling of land by an agent purchasing for purposes of capital gain and not for development. In even a competitive situation, expectations of price increases can feed on themselves and lead to an unwarranted price rise.* In such a situation, eventually, the prices will have to come down but (a) 'eventually' might be a long time and (b) meanwhile there would be a misallocation of resources according to these erroneous price signals. Furthermore, there will be a transfer of income to speculators. Thus, we need to worry about speculation in even a competitive situation.

8.16. In a *monopoly* situation, the owner of land can affect the price of land by holding it off the market in order to raise prices. His power to do this depends on (a) his concentration of ownership (what proportion of land is subject to concentration of ownership), (b) the elasticity of demand for land (c) the conditions in other cities. Even if there is a relatively low degree of concentration of ownership of land on a city-wide basis (the typical case), there can be extreme concentration of ownership in particular parts of the city. In situation of competitive ownerships and concentrations, a land-owner cannot hold the land off the market indefinitely because in order to realise his gain he has to sell it sometime. If he holds it off too long, competitive parcels of land could be developed by others and he might loose his accessibility value. In the monopoly case, the owner is essentially competing against himself and holding all others to ransom. Although the land may eventually come on the market, we need to be concerned because of the misallocation of resources in the meantime and a possible sub-optimal configuration of the city resulting from arbitrary pricing by the monopoly owner. The durability of buildings and structures adds to this problem.

8.17. With the promulgation of the Urban Land Ceiling Act, the urban land market ironically enough is now the monopoly of the public authorities. The public authorities also hold the key to the release of those areas that have been frozen as being in excess of the ceilings into the market. In addition the advent of Housing Boards and Urban Development Authorities which hold large tracts of land and release them in driblets has also probably led to an increase in speculative transactions: the speculators here, perhaps unwittingly, being these public authorities again. It is partly the inability - both financial and physical - of these public authorities to develop and rapidly enough commensurate with the rising demands of expanding population, that effectively restricts the supply of developed urban land and turn the public authorities into monopolist speculators. In this new situation, it is important that methods should be found to accelerate the supply of developed land.

8.18. The thrust of land policy has generally ignored some of these objectives of efficiency in allocation but has concentrated instead exclusively on land price control through different degrees of socialisation of land. This has usually been justified ostensibly in the interests of the poor to facilitate their access to land. In practice things have largely worked out contrary to expressed intentions.

EXISTING APPROACHES TO LAND POLICY

Large-scale Acquisition of Land:

8.19. Delhi is the best example of this policy and, being the capital, is being increasingly used as a model for urban development measures in other growing cities. The principle has been that all the land on the yet undeveloped periphery of a growing city should be notified at an early stage and acquired by a public authority, at the prevailing agricultural prices. This would then prevent the undesirable speculation that would otherwise occur in the event of lands changing from agricultural to non-agricultural uses. The corollary that follows is that all increases in land values would accrue to the public benefit. A second corollary is that such a procedure is also necessary for the orderly planning and development of the city since the public authority has control over all the peripheral lands and can prevent haphazard growth, urban sprawl, etc. A third corollary is that the poor will not be left to the "mercies" of the private market where they would stand no chance. Appropriate controls can be exercised in the land distribution policy so that the aims for equitable income and wealth distribution can be achieved. A fourth corollary is that the development of land is largely left to the public sector.

8.20. In the case of Delhi, the "Scheme for Large Scale Acquisition, Development and Disposal of Land" was initiated in 1961, according to which the Delhi Development Authority was to be the major developer, along with other agencies like the Municipal Corporation of Delhi, the Central Public Works Department and Cooperative House Building Societies which also had to carry out development of land, in accordance with the Master Plan and its zoning regulations. The main object of this scheme was "to lay down a clear

and rational land policy consistent with the socio-economic and physical needs of the city and to prevent speculation and other unhealthy transactions in land, to provide developed and undeveloped land for bonafide residential, industrial commercial and institutional use and to ensure a systematic distribution of land through the prescribed land use pattern": For this purpose land was to be acquired by the Delhi Administration under the Land Acquisition Act, 1894 and then transferred to the Delhi Development Authority under Section 22 (I) of the Delhi Development Act, 1957. The cost of acquisition was to be met out of the revolving fund created by the Government for this purpose and expenditure incurred by the Authority was to be met out of the sale proceeds of industrial, commercial and residential plots, with the surplus sale proceeds credited to the revolving fund.

8.21. The Scheme laid down that as a general policy, disposal of serviced land should be by auction to the highest bid except in the following cases where land could be allotted at predetermined rates:

(i) to individuals whose lands have been acquired,
(ii) to industrial units functioning in non-conforming areas which have to be shifted,
(iii) to individuals in the low and middle income groups,
(iv) to cooperative house building societies and cooperatives societies of industrialists

Land was to be held on 99 year lease - this being the nearest to freehold and an adequate incentive for the lessee to invest in housing.

8.22. This was the first effort for the socialisation of urban land through a comprehensive package of planned land use measures and public intervention aimed at creating a land bank and for holding land on lease. It envisaged coordinated growth through an apex planning, land development and controlling authority and the revolving fund implied the use of land as a resource for the common good. The ingredients for planned growth through legislation and public interventions were thereby established in a process which had little or no role for the private land developer. It called for action to achieve the stipulated goals and objectives through a vigorous implementation programme through official agencies and housing cooperatives.

It is necessary to ponder over the implications of the scheme as was envisaged and carried into practice in Delhi, because it has been copied as a model for many subsequent schemes in other cities in the country.

Disposal of Land on Leasehold

8.23. Associated with the policy of land acquisition have also been the policies of disposal of land so acquired. For residential uses the general policy has been to provide the land on leasehold rather than freehold. The justification for this is partly to exercise a greater degree of control over its use, partly to collect ground rent on a continuing basis and partly to be able to collect major portions of land value increments to public account at the time of transfer. Leases, even if they are of long duration, are in practice quite restrictive (though they do not need to be so). The transfer of land is regulated: no transfer is lawfully allowed for an initial period of 10 years.

The leases can also restrict the uses to which land can be put to. It may be noted that most of these restrictions are again ostensibly to achieve the objectives of control of land values and the equitable distribution of income and wealth.

Restrictions on Land Use

8.24. Even in unplanned cities the standard instruments of land use regulation are zoning and building byelaws. Different areas of the city are zoned for different purposes: residential, commercial or industrial. Density norms are also often used. Associated with these are building bye-laws which regulate the land use in terms of minimum and maximum utilisation of the land. Such building bye-laws usually prescribe floor area ratios (FAR OR FSI), permissible heights of buildings, permissible qualities of buildings, etc. The objectives of zoning regulations and building bye-laws are ostensibly those of safety, building a proper urban environment, etc. The effects on the efficient allocation of land are usually quite severe in that they act as impediments against

changes in the intensity of land use that might be expected in a growing city. For instance, in the context of land value increases, building bye-laws which restrict the height of buildings to 2 to 3 storeys result in the proportion of structure declining in relation to land value. Substitution of capital for land being restricted in such a situation, the supply of housing gets effectively restricted. The return on speculation in land grows much higher than the return on construction. In a poor country another effect of minimum building standards as enshrined in building bye-laws is equally damaging. With legal construction limited to relatively high quality and expensive housing, the poor are driven to unauthorised and illegal structures by definition. The poor dare not have recourse to extra-legal options consequent penalisation as a result.

Urban Land Ceiling

8.25. The fourth main instrument that has been used in recent times is the imposition of the urban land ceiling. Conceptually, this is essentially an extension of the large scale public acquisition of land from the periphery to the rest of the city. Once again, the idea is ostensible redistribution of wealth and improvement for the access of the poor to the land for shelter purposes. The reason d'etre is that there is an undesirable concentration in land ownerships, which encourages speculation, shooting up of prices and decrease in the supply of land. The owners of vacant land beyond the ceilings will be compensated in nominal terms and the public authority can use the land so gained for public purposes and for housing of the poor.

8.26. The Urban Land (Ceiling and Regulations) Act was enacted in 1976. Initially, this Act was envisaged for a ceiling on both land and buildings, but was transacted to consider urban land alone. The Act has been made applicable to all cities with a population of 0.3 million and above and in a few other cities which have had high growth rates. The ceiling on vacant land as prescribe is 500 M^2 in Delhi, Bombay, Calcutta, and Madras; 1000 M^2 in Bangalore, Hyderabad, Ahmedabad, Kanpur, and Pune, 1500 M^2 for eight other cities with a population between 0.5 to 1.0 million and 2000 M^2 for 35 smaller cities. The number of cities can be increased and added to the schedule of the Act. Significantly, the Act applied not just to the city but the city agglomeration, generally identified by a 5 k.m. belt around the city and within which the conflict between prime agricultural land and future urbanisation is most prominent.

WHAT HAS GONE WRONG?

8.27. It should be clear from this description of existing approaches to urban land policy that any thoughtful observer with socially progressive ideas can scarcely question these approaches. What may have gone wrong then?

The Case of Delhi

8.28. In order to gauge what may have gone wrong, it will be useful to give some details on the operation of the "Scale Acquisition, Development and Disposal of Land" as it has operated in Delhi. By December, 1961, about 74,000 acres of land were notified under Section 4 of the Land Acquisition Act, 1894 up to January 1982 of which, about 49,000 acres were acquired land out of which again the Delhi Administration transferred about 45,000 acres to the Delhi Development Authority (D.D.A). About 4,000 acres of acquired land have yet to be taken possession of on account of unauthorised structures on the land or litigation. About 21,500 acres are still under Section 6 Notification of the Land Acquisition Act, 1894. The process from notification and freezing of land to actual possession for planned growth has not been as rapid as desired and this has resulted in a demand for streamlining procedures of the Land Acquisition Act, 1894, to reduce delays and also to ensure adequate compensation and other incentives for compulsory acquisition. A major offshoot of these delays is unauthorised use of land, which in Delhi today is to the extent of 1.92 lakh households (i.e. about a million people or 15 per cent of the population of the city). This is proof that the major aim of providing serviced land in adequate quantity, at the right locations, at the right time and at the right price has not been quite achieved as a prerequisite of coordinated growth. It may also be noted that the compensation to which the original owner is entitled under the Land Acquisition Act,

1894, is the market value of the land on the date of notification of Section 4, along with 15 per cent atium. In the case of Delhi, approximately one third of the land notified in 1961 is still under Section 6. Farmers are, therefore, receiving 1961 compensation levels twenty years hence. About 6,000 acres are still under Section 4. The gain has been, among others, of the approximately 2 lakh urban households occupying land unauthorisedly.

8.29. Of the approximately 45,000 acres given to D.D.A. for development, only about 14,000 acres have been devoted to residential development. Of this (in 20 years about a third went for about 30,000 plots in cooperative housing societies, another third for auctioned (about 9,500 plots) and L.I.G. and M.I.G. Plots (about 21,000 plots at pre-determined prices), and the remaining third for about 2 lakh plots for the poor dislocated from central city slums and resettled in 44 resettlement colonies.[1] The way slums are demolished without any warning whatever and the dwellers are harassed and chased from one area to another is much worse than meted out to unwanted animals. This is what land to the poor has meant in practice. And yet the latter provide the vital public and private goods and services so essential for any city. The target according to the Master Plan was development of about 30,000 acres for residential development during these 20 years. In addition to this, D.D.A. has, in the past 5 years or so, constructed about 65,000 housing units for different category of people. The net result of all this is that of about 11.5 lakh dwelling units at present in Delhi, 2 lakhs are in resettlement colonies, 2 lakhs in unauthorised colonies (which are being regularised slowly), about 3.7 lakhs in traditional areas, about 1 lakh in squatter settlements, about 1.5 lakhs in regular plotted areas and about 1.5 lakhs in flats.

8.30. In summary then, apart from the 2 lakh resettlement plots the majority of which were developed between 1975 and 1977, the D.D.A. has developed only about 60,000 plots and about 60,000 flats in 20 years while it has had a monopoly on land development during that time and the population of Delhi has grown from about 2.3 million in 1961 to about 5.7 million in 1971. There has been a learning process so that, while it started from ideals that implied 'petty' peripheral neighbourhoods, large scale core area decongestion and renewal and well defined segregated activity. With land becoming increasingly scarce a more compact policy is now being pursued. The policy of auctioning residential (only 95,000 in 20 years) commercial as well as industrial plots in irregular driblets has led to very high rises in land prices. With all land under the control of the D.D.A., the bids for the small amounts that are auctioned have been astronomical, since there is no alternative (apart from unauthorised occupation). Moreover, the D.D.A. has regarded these scarcity auction prices as market signals and increased its predetermined prices by similar proportions. The result is that even predetermined land prices are now well over Rs. 400 per square metre - which is higher than the average land prices of developed areas in cities such as Boston and Washington DC in the United States.

Effects of Large Scale Public Acquisition of Land

8.31. The effect of public acquisition of land has been that the public authority is able to offer the land an at very low, essentially agricultural prices prevailing many years earlier. *The resulting intensity of land use, born of the fact that land has been bought cheap, is highly wasteful, uneconomic and inefficient.*

8.32. As argued earlier despite very common and general pattern that are observed internationally, deficiencies in knowledge and appreciation about the specifics of city growth, its appropriate and legitimate functions, and uncertainty about the future render planning exercises nearly futile. The first impediment to appropriate utilisation of publicly acquired land is therefore lack of knowledge and appreciation of what a city should look like, how it should grow, who shall inhabit it and the requirements of the future. Added to the problem is the attitude of omniscience of the planning authority and disregard of consultation with legitimate interests. "Papa knows best" becomes the *mantra.*

1. The large majority of this resettlement was done during 1975 to 1977.

8.33. The second problem in the inefficient allocation of publicly acquired cheap land relates to the operation of the politico-economic-administrative structure as it operates in the country today. This, incidentally, is not very different from the operation of most bureaucracies. The perception of what is regarded as a public purpose is heavily dominated by the preferences and even private interests and perceptions of the few planners and decision makers in the public authorities. Then there are also the temptations for self-aggrandisement as reflected in gigantism in public projects. The preferences of upper and middle class planners and administrators are heavily biased toward order, cleanliness, deconcentration, the flowering front garden and the useful back-garden both serving to help the "undesirable" populace at arms length and away from sight. Then again, land for public institutions like universities, government undertakings, Government offices, etc., is allocated in usually highly wasteful quantities. If land were acquired by these institutions at prices which reflected its true opportunity cost, it would be difficult budgetarily for them to be so spendthrift.

8.34. The density and development norms typically promulgated by a public authority as has already been noted are unconsciously lavish. The result is that the city gets landed with unmanageable areas, higher service and transport costs. Lastly, the public authority can soon run out of the land in the first place. All this follows logically from the acquisition of cheap land.

8.35. The third problem in the inefficient allocation of publicly acquired lands is linked with the determination of their prices. The usual policy is to provide the land at cost plus rates to the users who are regarded as deserving in some sense - whether they are public institutions, housing cooperatives or the poor - and to auction the rest for the remaining users. Once again the problem arises partly from procedures. Once very large tracts of land are acquired there is no rational way of determining prices at different locations. The usual governmental response to this is to decide prices on a no-profit no-loss basis. Differentiation between locations is administratively difficult - specially in the case where the allottee has little choice in the location he is allocated. For the rest of the plots, it is difficult for the public authority to decide the correct volume of land that should be auctioned at any given time. The public authority predictably can act as a classical monopolist: supply is restricted in the interest of raising current prices for budgetary reasons that most public authorities are subject to. Note that none of these arguments has focussed on the effects of corruption that can reasonably by expected to exist in such authorities. The focus here is on intrinsic problems even if we assume that the public authorities are composed of intelligent, well motivated and honest people.

8.36. How does a public authority define who the deserving users are who should get land at predetermined and essentially low prices? Here, once again, it is important to understand the politico-economic-administrative framework we operate in. The existence of competing elements of bureaucratic political and other public groups who all regard themselves as deserving is large in a society in which everyone regards himself as poor except, perhaps, the hypothetical top one per cent of the population who these are is difficult to see. The allocation of land from a public authority can then be expected to reflect the differing degrees of access that each group enjoys. In a free market, the distribution of land can be expected to reflect the distribution of income and wealth. In an allocated "market", the distribution of land can be expected to reflect the distribution of access to the allocating authorities. *The key insight here is that the distribution of access to a public authority is likely to be even more skewed than the distribution of income and wealth.* There might well be redistribution within the top decile of the income distribution as various organised groups of white collar and other bureaucratic groups are quite likely to corner a disproportionate share of the land. To give an example: cooperatives are usually defined as deserving groups in our socialist culture. But who are likely to form housing cooperatives? The more educated, better off members of the bureaucratic and professional elite - not the poor who have difficulty organizing themselves. The first cooperative societies in Delhi which were able to get vast tracts of land at cost plus prices were

composed of elite groups such as I.A.S. administrators, lawyers, judges, engineers, journalists, etc. Opposition to or discussion of such allocative practices is also difficult to mount because most members of the articulate public get bought out in this way. Such processes, first observed in Delhi, are now seen in one city after another where urban development authorities have gone into operation and modelled themselves on Delhi. Once again, the corruption aspects of these allocations are not being here discussed. It is the distribution of power, of access to power and of self perception that determines this lopsided land allocation even if the allocators are a band of incorruptible dedicated planners and administrators. The poor, with little means to organise themselves, then get left in the cold of the unauthorised illegal sector of the market and might even be worse off than in a free market situation.

8.37. The key spatial problem that arises from public land acquisition and disposal is that it is difficult to devise allocation procedures within which people can also exercise locational choices. The usual procedure is for allocation by priority or by lottery: the consumer is then happy to receive the plot wherever it may be located. Again, because of the organised pressure from various elite groups there is a continuing demand upon the local authority to do slum and squatter clearance from the centre of cities so that more well located land is made available for the better off. The typical response of public authorities is then to relocate the poor, if that is done at all, to the periphery of the city and often outside the urbanisable limits since that is seen as the most expendable and cheapest land. As the city expands and the Periphery shifts further out this merry go round is repeated at the expense again of the poor.

8.38. Another important inequitous effect of public aquisition of land is that it is often poor farmers who happen to be at the edge of the city who lose their land to the public authority. They not only lose their land at a price lower than they otherwise would have but also lose their livelihood at an earlier stage as well. The looser is then the poor farmer and the beneficiary the usually better off urban dweller.

Effects of Restrictive Leases

8.39. The restrictive practices in leases are designed with the noble intention of preventing allotment from being subverted with immediate sales. Here again the problem really arises from the fact that land is given at concessional prices and there are high incentives for making capital gains. This restricts spatial mobility of people who are tempted to indulge in illegal or extra-legal practices. The restriction on mobility has serious effects on efficiency in residential location as well as efficiency in the labour market.

8.40. The restrictions in leases, which are usually for 99 years relate mainly to the transfer of the property. They usually prohibit the transfer of the property in the first 10 years except with special permission. Further, even after the 10 years, the public authority claims a significant share of the unearned increase in value in Delhi. This is pegged at 50 per cent. The result is that most transactions are effected illegally or extra-legally and are not registered at all. The public exchequer therefore loses revenue which it would otherwise have gained through capital gains tax, stamps duty, etc. The local public authority does not get the 50 per cent of the increment in value either. As a result of the decrease in open transactions, the plots that are so transacted gain a scarcity value and land prices are bid up unnaturally high.

In practice there is little difference between a long term lease and freehold. Even freehold properties are subject to all zoning and building regulation. They can also be subject to a transfer tax which recoups some of the unearned benefit. Since the restrictions on leases have to be administered, they lead to more avoidable corruption as well as inordinate delays than freehold lands.

Effects of Urban Land Ceiling

8.41. The inefficiencies resulting from the operation of the urban land ceilings are quite similar to those described above. It was envisaged that through the Act large portions of vacant urban land would vest with the public authority at non-market value prices. In reality, exemption clauses in the Act do not have the required clarity

and their interpretation by local competent authorities vary considerably to the extent that exemptions in many agglomerations have been freely given to industries, education, health and other public facilities - often in conflict with development plan provisions. Accordingly, the Act in operation has not made a dent in achieving its prime objective.

8.42. Here again the assumption is that the public authority knows best. The aim of equity is not served well by such an assumption. Unlike rural land where it is relatively easy to designate "standard acres" i.e., the imposition of land ceilings in relation with the productivity of land, it is difficult to do the same in respect of urban land. In the case of rural land, the land ceiling imposed on fertile and irrigated areas is less than that on dry and barren areas. This is feasible administratively since these qualities are well known and do not change very quickly. The difference in value between the best and worst agricultural land is in the range of 1 to 5 or 1 to 10. In the case of urban land, however, the difference in value between the edge of the city and the centre is typically 1 to 100 or more. Furthermore, in the context of rapid urban growth these ratios keep on changing. Hence the imposition of a physical urban land ceiling means that different individuals are subject to ceilings which are quite different in value. As was documented in the last section, different ceilings have been imposed in cities according to their size. A logical question that arises is will these ceilings be altered as cities grow? The ceiling in Bangalore is currently 1000 M^2. As Bangalore's population increases to 5 million (from about 3 million) will it be brought into line with the 4 largest cities and the urban land ceiling reduced to 500 M^2? If so, how will the surpluses be squeezed out?

8.43. In terms of the efficient allocation of land, the imposition of urban land ceilings is essentially a short sighted measure. If implemented efficiently what it means is that all excess vacant land would come to the government at one point in time. *Nothing will be left for the future.* The government itself then has to decide when to release which parcels of land. As outlined earlier, the pressures on the government for allotment of the more desirable locations will be such that short term objectives will dominate those of longer term urban land husbandry. In addition, since the land is acquired at low prices once again, all the preferences are for efficient uses as suggested before. The objective of providing shelter for the poor gets relegated to a very low priority in the way that such a regulation actually gets implemented. Land use for government purposes like the location of government offices and other public sector uses usually receives the top priority. Shelter for the poor often comes as the fifth or sixth priority in these guidelines.

8.44. Apart from some cities where extremely large holdings were held by the erstwhile princes, the amount of land even potentially available from the operation of the urban land ceiling acts is small in comparison with the needs of cities and with the amount of land which can be acquired publicly through normal measures. In Madras[1], for example, only 1700 hectares are potentially available, of which only 700 hectares are with individuals while about 1000 hectares are with industry. This points to yet another problem that has emerged as a result of the urban land ceiling act. Projects - whether for industry or for residential development - which need temporary or permanent land ownerships in excess of the ceiling need to get exemptions in each case. This has had the effect of slowing down development as cases are stuck interminally with the competent authorities. This becomes the happy hunting ground of corruption.

8.45. These are problems inherent in large scale real estate management vested in public authorities. When land is acquired and given in different kinds of leases with differing conditions, the administrative problem of management gets quite immense. Inevitably, transfers of land, changes in land use, etc., have all to be dealt with administratively. This obviously leads to a whole host of avenues of corruption. Even in the absence of corruption, delays in changes in land use are built into the system and the "flexibility" in urban

1. It should be noted, however, that in Madras the imposition of the ceiling has been much more liberal allowing 500 M^2 per head in a family subject to a maximum of 2000 M^2.

structure essential for a growing city gets retarded. To the extent that decisions are subject to discretion and there is uncertainty in rules, procedures and regulations, overall procedures in the land market is increased and this impedes the flexibility that is necessary in a growing city.

The Need for a New Approach

8.46. We need an urban land policy to promote efficiency in the allocation of land, to help the poor in their access to land for shelter; to aid in the process of adjustment that cities have to go through in the process of rapid urban growth. The issue are now too complex to be merely seen in the context of public vs. private participation in the land market. The accumulated experience, as analysed above, in India as well as other parts of the world is now extensive enough to question the way things have worked out in practice. Yet, it is also clear, that an unregulated private land market would be as bad or worse for orderly and equitable urban growth. In a situation where incomes are likely to lag behind land price growth, as seems to be the case the public authorities must intervene in order to protect the interests of the poor and to promote orderly growth. This must be done in the interest of social welfare but also because the city belongs to the poor as much as to the rich. It is still the poor who physically produce the goods and services for economic growth and well-being. They are as integral a part of the city as any other groups. But the tendency is to regard them as marginal groups and hence to put them in marginal locations. Further, under conditions of rapid urban growth the provision of roads, of open spaces, of urban transport, of water, sewerage and sanitation, all have to be planned for; long term investments have to be coordinated. The market does not do these things well enough. We, therefore, need a dynamic symbiotic relationship between urban planning and the urban land and housing market. Public planning and policy enunciation should also use private energies and not usurp their functions. Moreover, these private energies must be directed in a desirable manner.

8.47. The problem is further complicated as the market responds to an enunciated plan. Services like roads, drainage, sewerage, water supply, and electricity are supplied by a public authority. Their planned provision has a crucial effect on the expected values of land. Speculators, developers, and others quickly alter their activities in response to a declared plan, sometimes constructively and sometimes perversely. These decisions cannot be predicted with any precision. So an exercise in urban planning can easily have unintended results inimical to its objectives.

8.48. We need land policy to establish conditions conductive to land-use cooperation and controlled competition. Unless the whole economy is planned and prices, in general, are not seen as important information signals about relative scarcity, urban planning must take into account the land market and people's preferences. Planning must, of necessity, be done by a small group of individuals, whose attempts to predict the future contain a large element of their own sets of preferences which are not shared by everyone else. New political systems are unable to transmit the wants of people very successfully to planners. Planning methods themselves are not adequate for the needs of cities. We should distinguish those measures which are specifically aimed at curbing undesirable speculation, since this is an issue that receives prominence in land policy. In addition to efficient allocation of land we can regard the objective of land policy as the curbing of price rise because of the concerns outlined in the earlier section. Mere control of price is really a control of productivity if we assume that price reflects productivity.

8.49. The basic problem of urban land policy is the supply of serviced land:

(i) in adequate quantity
(ii) at the right locations
(iii) at the right time
(iv) at the right place

These four considerations are obviously interrelated. It is difficult to predict where new developments will take place and when and the price of land is highly determined by its location. The price is very important for it determines the intensity of housing development that then takes place. Much concern is expressed to restrain the price rise of urban land in order to make it accessible for lower income groups. If, however, the price of land is pegged too low, extensive

rather than intensive development is likely to take place and hence demand for land gets intensified. If by public participation these prices are kept low and not allowed to rise in response to higher demand, the only logical consequence is that the public authority is forced to provide larger and larger quantities of land with all the attendant costs. Urban land policy should therefore be aimed at inducing the right prices to prevail in the market so that they can act as appropriate signals in the development of the land. Public authorities need to use both indirect as well as direct methods of intervening in the market. Indirect methods should essentially aim at curbing speculation as well as encouraging the private supply of developed land while direct methods should be mainly concerned with making available increased volumes of developed land for the poor. This calls for the building up of a new information system which is not there at all.

IX URBAN LAND POLICY: SOME NEW DIRECTIONS

Introduction

9.1. Urban land assembly, development and distribution, of necessity, constitute the foundations on which urban planning is based. The roots of rural urban problems can be traced to the management of urban land. Yet, given the complexities of the urban land market and the dual use of land for its "use value" and "exchange value", it is difficult to work out a faultless system of urban land management so that the problem of equity growth as well as changing urban structure are taken care of simultaneously. Moreover, as has been noted urban land is not a homogeneous mass but a heterogeneous structure comprising lands of various descriptions. A proper classification of urban land is necessary, as the nature of problems and their solutions in each distinct category of urban land are bound to be different. We endorse the classification of urban land into the following five broad categories as was recommended by the Committee on Urban Land Policy in 1965:-

(a) Developed Urban Land i.e., land within the city limits which is developed and largely built upon. There may be some vacant plots within it which would also fall in this category.

(b) Undeveloped Urban Land i.e., land within the city limits at any point of time which is not yet developed and built upon.

(c) Land within the Urbanisable Limits i.e., land presently agricultural or un-urbanised but likely to get urbanised within the next 10 or 15 years.

(d) Land beyond the Urbanised Limits. This would naturally be purely rural land and the greater its distance from the city limits the lesser would it be subject to the forces of rural-urban interaction.

(e) Land the use of which is frozen as green belt or for agricultural purposes and also land which is reserved for community use.

9.2. This Task Force has concentrated its attention on (a), (b) and (c) in terms of urban land policy specifically. (d) and (e) are essentially covered by its recommendations on urban planning in general. The problems of urban land assembly and development are relevant mainly for (b) and (c) while policies on redevelopment are relevant for (a).

A REVIEW OF LEGISLATION AFFECTING URBAN LAND

9.3. A major difficulty in the articulation of urban land policy is the plethora of existing legislation and regulation which govern the land market. These include laws governing land tenure, land use regulations, land taxation laws enabling direct public intervention in the land market for the purpose of social control of land. Specific pieces of legislation like the urban land ceiling and the working of the land acquisition act have already been discussed. The other relevant pieces of legislation are briefly described here.

9.4. The main constitutional provisions concerning land are listed in Appendix 9.1. The key provision is, of course, Article 19 (1) (f) which confers on individuals the right to property. This is , however, qualified by Article 19 (5) which allows the State to restrict the operation of article 19(1) (f) by allowing reasonable restrictions on property rights in the public interests. All the other local and state laws and regulations become valid and operational on account of this provision. These may be classified as follows:-

(i) Land Acquisition Act for the purpose of acquiring lands for a public purpose.
(ii) The Town Planning and Improvement Trust Acts to control the use of land to regulate its development with a view to promote organised urban growth. These include Master Plan and Town Planning Schemes, Urban Development Authority Acts, etc.
(iii) Multiple enactments for controlling the development of land and building activity. These include Building Bye-laws, Zoning Rules and Sub-Divisional Rules, Fire Safety Regulations, Periphery Control Acts, Restriction of Ribbon Development Act, Housing Code etc..
(iv) The Slum Areas (Improvement and Clearance) Act. (This is being dealt with in some detail by the Task Force on "Shelter for the Urban Poor and Slum Improvement".)
(v) The Urban Land Ceiling Act.
(vi) The Urban Art Commission Act.
(vii) Other Acts like the Tree Preservation Act, Public Health Act, Place of Public Act, etc.

9.5. The development plans available in the country today have been prepared under the State Town and country Planning Acts, which vary in scope and contents from State to State. Most of these plans have not been effective tools for implementation as by and large they have not provided for programming and budgeting and implementation on a phased basis linked up with availability of resources as discussed in Chapter IV. They have at best served as negative instruments of control and with little or no relationship to the hinterland. Also, multifarious and variegated legal tools listed above and dealing with development control have precipitated over-lapping and, at times, inconsistent provisions in urban areas. Comprehensive legislation that integrates economic development with settlement planning should be promoted and the Model Urban and Regional Planning and Development Act, which has been recommended by the Union Government to all States to enact should be pursued with renewed vigour, preferably in lieu of existing legislation but at least supplementary to such legislation where existing state and local government situations necessitate adjustments.

9.6. Zoning Regulations have found widespread acceptance as a means for providing public control over land development. Similarly, sub-division regulations which prescribe the minimum requirements to be met primarily by developments on the fringe of urban areas have been implemented as a means of ensuring that new developments will meet certain acceptable design standards. They are valid only if they substantially help in protecting health, safety, welfare and amenities. The Model Act referred to earlier, caters for zoning and sub-division regulations as part of statutory comprehensive development plans. Some State planning legislation however, cater for such regulations but as of today only Delhi and Bombay have clear cut zoning and sub-division regulations as part of the statutory planning process. To encourage such regulations, the Central Government through the Town & Country Planning Organisation brought out a Model State Zoning Act in 1970 as a guide for States to enforce where the comprehensive Model Regional and Town Planning and Development Law is not enacted. This Model Zoning Act was supplemented by the Model Land Use Zoning Regulation - 1975 so as to include mixed land uses as an integral component of the urban land development process.

9.7. Efforts need to be made to integrate zoning and sub-division regulations in Development Plans so as to conform to overall land use patterns and within prescribed densities. Thus, though ceiling on maximum urban holdings are indicated under the Urban Land (Ceiling and Regulations) Act 1976, sub-division rules prescribe plot sizes not permissible below a certain minimum. These rules are supported by Building Bye-laws applied at the city level as a municipal function. Latterly some conflicts have surfaced in the application of building bye-laws with local authorities who look after this aspect in areas declared as development areas. In Delhi, attempts at unified building bye-laws have been finalised and even zoning and sub-division regulations controlled by the Development Authority but applied by the Municipal Corporation under delegated powers in their areas have been refined to enable a uniform interpretation. The objective in all major

urban areas in India should be to tighten up and speed up the approval process for land development through clear rules and regulations so as to reduce uncertainty and speculation. In this regard difficulties arise as the number of Urban Development Authorities increase and take over some city functions from Municipal bodies of long standing. (The Task Force on "Management of Urban Development" is making recommendations concerning the relationship of urban development authorities with Municipal bodies).

9.8. Controls like zoning regulations, subdivision rules, building bye-laws and authority to approve layouts are means of directing urban growth. These techniques which are negative restrictions on the use and development of land have been borrowed from advanced countries especially U.S.A. where itself their adequacy is currently being questioned. Many of the standards set in these regulations are very high and which are more suited for affluent societies and not for settlement patterns of low income families. Such standards make illegal by definition, any shelter affordable by low income families. There is urgent need for the modifications of such standards. In this context, it may be difficult to have one unified set of building bye-laws covering the entire city due to varying life styles prevailing in the old core, newly developing areas and the urban and rural villages.

Assembly and Development of Urban Land: What can be done

9.9. The last Chapter focussed on the problems that have arisen in the timely supply of serviced and developed urban land in quantities which are adequate to match the demands arising as a result of rapid urbanisation. It is clear that the approach towards the development of urban land will have to be changed in order to accelerate the process of development of the land.

9.10. Land policy instruments can be classified according to their operation through the market or as direct measures allocating land to different groups. Public authorities need to use both indirect as well as direct methods of intervening in the market. Indirect methods should essentially aim at curbing speculation as well as encouraging the private supply of developed land while direct methods should be mainly concerned with making available increased volumes of developed land.

Indirect Methods

9.11. The existence of uncertainty is the main cause of speculative activities which result in the decreased supply of urban land, it is therefore necessary to take various measures which reduce the degree of uncertainty in the land market by increasing the amount of information available.

Planning Notification

9.12. The Task Force has recommended systematic planning procedures at the city level. If this is done it is important that adequate information be available in the plans that are articulated. Since a public authority must provide various services, of which roads, transportation, electricity, and water are the most important, uncertainty about the future is decreased if plans for these services are announced considerably in advance. Both buyers and sellers can then have better information on which to base their actions. Efficiency of land use is likely to increase assuming that the planning decisions are good.

Approval Process

9.13. A tightening up of the approval process for land development can reduce uncertainty and speculation. A reduction in time required for such approvals, clarification of rules and regulations and predictability of approval would have the effect of reducing uncertainty. In the current circumstances, this applies particularly to all the land frozen under the urban land ceiling act.

Property Tax

9.14. A well administered property tax can do much to regulate the land market. If properties are valued frequently, undesirable speculation will be dampened considerably since taxes would have to be paid on unrealised gains. There is little reason why vacant lots should be taxed at lower

or higher rates as long as they are revalued frequently. The holders of vacant lots should be given signals - through rising assessments with rising values - indicating the opportunity costs of their holding the vacant land. There is a genuine administrative problem of frequent land valuation but this can be systematised as well for it to be feasible. The Task Force on "Financing of Urban Development" has made recommendations to this effect. The main issue to note here is that a well administered property tax helps in bringing surplus land into the supply for development at the right time when it becomes uneconomic to carry it as a non-revenue yielding asset purely for the purpose of making capital gains.

Information Exchange

9.15. *Land Price Publication System:* The last Chapter documented the serious concern being expressed at the perceived high increases in urban land values in the metropolitan areas. There are, in fact, no systematic data which can make it possible to document the actual movements in land prices in any of our cities. It is therefore difficult to reach precise conclusions on the actual pattern of land value increases and hence to identify the casual factors underlying land value increases. It is therefore important that systematic data be collected so that the facts are clear. In addition, good data on land values would help in the assessment of property taxes, capital gains taxes and the wealth tax. The Task Force views the issue to be of sufficient importance that a separate chapter (Chapter XI) is devoted to a proposal for the establishment of a *Land Price Publication System*

9.16. *Register of Owners*: The existing system of land records is quite inadequate in most cities. There are no authoritative records of existing owners of the different plots in cities. It is therefore necessary to initiate a system of land ownership records. Since this would be a very large and expensive exercise, a beginning may be made with systematic registration of all new transactions. Schemes may also be begun in selected cities for preparing a comprehensive register of all land owners, particularly those on the urban fringe.

9.17. *Standard Price System*: It is important to regulate the agricultural land prices prevailing on the fringe so that orderly development of land takes place as cities expand. Area on the fringe of urban areas can be designated in rings and zones and a "standard price" announced (based on actual value) for each area in a base year. Subsequent to that, inflation adjustments can be announced every year along with other real price rises that are observed to occur around the notified areas. It should be feasible for such a system to be initiated in the existing 12 metropolitan cities and, as experience improves, extended to other class I cities and further. This would be useful for curbing speculation in the fringe areas and bringing land into development at the right prices and at the right time.

9.18. The various measures suggested above will essentially increase the amount of information available to both those holding vacant land which can be developed as well as those who need land for development and habitation. These measures would therefore promote the supply of serviceable land at the right time as well as at the right locations.

Direct Methods

9.19. Considerable space was devoted in the last Chapter to a discussion of problems that have arisen in the large scale acquisition of land and its subsequent development and disposal. The modalities for achieving public control of land can involve several elements and a continuation of approaches to the assembly, development and disposal of urban land will have to be followed in order to accelerate the supply of serviced land.

9.20. *Land Acquisition:* The problems that are being encountered in land acquisition do not mean that this method should be entirely abandoned to bring raw land in urban use. Some of the measures suggested above - the implementation of a standard price system along with the maintenance of registers of land owners - should help in encountering the problems that have arisen. The approach should be to find ways to avoid the legal and other impediments that occur in the acquisition of land and which are essentially related to the magnitude and style of compensation offered.

Large tracts of land should not be notified at a certain time and actual acquisition conducted years later at the grave expense of agriculturists. Any land acquisition activity must make adequate provision for reasonable compensation of the farmers whose land is acquired and, more important, for programmes for their rehabilitation through training and employment, and share in developed land. But land notified at any given time should be acquired within a time frame of 2-3 years. If a standard price system is introduced in urban fringes, the compensation issue would be much easier to handle as well being much fairer than the existing system. It should now be recognised that ways other than land acquisition will have to be found for land assembly and development to meet the emerging needs of the future.

Land Readjustment

9.21. Land development through public control can also be done through a process of "land readjustment" schemes or other methods based on similar principles. The core of the idea is to compensate original owners of acquired land in kind by returning portions of the serviced developed land. In brief, land readjustment is a process whereby a public authority assembles numerous small parcels of raw land without paying monetary compensation to the owners, services and sub-divides the land for urban use, returns a portion of the resulting building sites to the organised owners in proportion to the value of their land contributions and sell the remaining sites to cover all public costs. Hence land readjustment is a temporary form of public ownerships to achieve unified control over large areas and means of financing public service installation during the crucial land development stage of urban growth. Such schemes, with variations, have been used very efficiently in Korea, Taiwan, Japan, Australia and West Germany. A number of variations are possible: owners can be given equity participation in the serviced land as opposed to actual land; the proportions of land returned can be varied according to social policy; some plots can be auctioned for recovery of development costs, etc.

9.22. The wide spread adoption of such a system could solve many of the problems encountered in large scale acquisition development and disposal of land. The Task Force felt that this can be a major initiative in land policy in the country hence the next chapter (Chapter X) is exclusively devoted to examining the feasibility of such an approach in India along a suggestion for its practicable adoption.

9.23. *Right of Pre-Emptive Purchase*: As a measure against speculation and for the future registration of land transaction at the fringe, the public authority should have the right of "pre-emptive purchase" whereby it would have the right to purchase any transacted plot at the stated price plus a designated per cent, say 15 to 20 per cent.

9.24. The main feature of most of the land policy measures suggested above is that the approach towards land development should be a positive one including the participation and cooperation of people rather than one of legalistic adversity and compensation.

Urban Renewal and Redensification

9.25. Most Indian cites and towns have outgrown the functions and purposes for which they were built. The last century and a half have seen few notable attempts - except in the work of two or three metropolitan Improvement Trusts with the application of what Patrick Geddes called conservative surgery - to remodel the functions and relationships of their several parts, except the construction of what are known as Civil Lines on their peripheries which still further pulled their configurations out of shape.

9.26. Most cities down to medium and even sub-divisional towns are now survivors of past city concepts, functions and distributions. Most of them are now relics abounding in horizontal single or double storey sprawl, containing liberal expanses of ill-kept garbage space or jungle of what once was well-tended private or public gardens, large festering ponds and tanks which once were guarded reservoirs of safe, potable water, abandoned derelict factories or rather artisanal manufactories, and above all, large plot inefficiently used government structures and

vacant lots. The traffic circulation network was originally laid out for hand or animal driven carts and pedestrian traffic unsuitable for economising on current transport costs.

9.27. To take the classic example of Bombay, Calcutta and Madras, if one flies low over these cities, one will be amazed over the abundance of (1) green, sliming expanses of ponds that are no better than noxious cesspools, (2) derelict factories, yards and manufactories and warehouses; (3) anarchronistic relics like old type textile, spinning and ginning factories, (4) vast areas of semi-derelict low-height horizontal houses, more correctly tenements; (5) spacious backyards, gardens and courts unkept and full of garbage; (6) vast areas of government owned land interspersed with inefficient structures. The sight of so much unused and inefficiently used, yet most valuable lands, suddenly comes home as a startling discovery. What is even more baffling is that ownership of most of these derelict but invaluable spaces is disputed or under prolonged litigation bringing returns to nobody.

9.28. Let us take another example: the famed Calcutta Municipal Market in front of the Calcutta Corporation Offices. It is a single storey sprawl over many acres of some of the most expensive land anywhere in the world where everything under the sun "from soap to nuts", as the phrase goes in Hong Kong, can be had under one roof in orderly rows and blocks. Yet the same amenity could be secured many times over, along with extra amenities of under-ground garages, private housing, hotels, office spaces, open air and closed door recreational facilities, eating places, even flatted factories and what not if this vast space were intelligently designed and built upon up to say, 16 or 20 storeys.

9.29. Most Indian cities, paradoxically enough, are not built densely enough, do not make use of modern construction technologies enough to augment their economic, manufacturing, servicing, wealth producing and residential viability.

9.30. A very economical and practical way of rejuvenating such towns and cities and strengthening their economic, social and cultural status is to renew and redensify their inefficiently used space and derelict structures. Some fresh all-Union legislation or modification of the Land Acquisition Act of 1894, or changes in the existing charters of City Improvement Trusts may be necessary.

9.31. To start with, all vacant and derelict lands of the types described earlier along with other derelict but currently used properties around each should be enumerated, surveyed and brought under schedule as a first step. Second, they should be notified for public acquisition or the mechanism of the Land Readjustment System elaborated elsewhere in this Report. Third, steps should be taken to fill them up and reshape them with small or large city blocks for development and construction. Fourth, development, construction and ownership may be free-hold or 'preferably long-term leasehold which for all practical time horizons will amount to free-hold. Fifth, development, construction and ownership should be made competitive between government, Municipal bodies, cooperative and registered societies, and private corporate bodies.

9.32. Nobody needs to be displaced or forcibly ousted from his property. There need be no compulsion anywhere. Even choice will be voluntary and rational for the chooser's own benefit and perception. Once a block is selected and notified more vertical (up to 5 storeys), development and its detailed lay-outs and plans published, the first charge on the developed property will be the choice of the original owners of the land and those displaced from peripheral lived on properties, who should be entitled to residential or commercial space equivalent in value to that of the land surrendered or acquired. The second charge will be on public utilities, amenities, access roads and recreational spaces within the block. The third will be on those applicants who will be willing to buy residential or commercial or factory space in the developed property by surrendering their existing property to the developer for redevelopment. This will facilitate block transfer of land for fresh redevelopment and renewal.

9.33. This process may go in cycles for which the initial funds will have to be organised either by setting up a financing body or legislation for raising of loans.

9.34. Several improvement trusts have in the past worked their principles in practice and yet they

have not been allowed to be extensively practised no doubt by monopoly and vested interests.

The matter has, however, acquired an urgency that can no longer be ignored.

Appendix 9.1

Some constitutional Provisions Concerning Land

Article 19(1) (f): All citizens shall have the right to acquire hold and dispose of property.
Article 19(5): Nothing in [Article 19(1) (f)] shall affect the operation of any existing law in so far as it imposes, or prevent the state from making any law imposing, reasonable restrictions on the exercise of any of the rights conferred by the said clause either in the interests of the general public or for the protection of the interests of any Scheduled Tribe.
Article 31(2) *25th Amendment*: No property shall be compulsorily acquired or requisitioned save for a public purpose and save by authority or law which provides for acquisition or requisitioning of the property for an amount which may be fixed by such law or which may be determined in accordance with such principles and given in such manner as may be specified in such law; and no such law shall be called in questioning any court on the ground that the amount so fixed or determined is not adequate for that the whole or any part of such amount is to be given otherwise than in cash..".
Article 31 A (1): Notwithstanding anything contained in Article 13, no law providing for
(a) the acquisition by the State of any estate or of any rights therein or the extinguishment or modification of any such rights, or.....shall be deemed to be void on the ground that it is inconsistent with or takes away or abridges any of the rights conferred by article 14, article 19 or article 31: ..... Provided further that where any law makes any provision for the acquisition by the State of any estate and where any land comprised therein is held by a person under his personal cultivation, it shall not be lawful for the State to acquire any portion of such land as is within the ceiling limit applicable to him under any law for the time being in force or any building or structure standing thereon or appurtenant thereto, unless the law relating to acquisition of such land, building or structure, provides for payment of compensation at a rate which shall not be less than the market value thereof.

URBAN HOUSING

Ministry of Urban Development, Government of India, appointed in October 4, 1985, an Expert Commission known as "The National Commission on Urbanisation" to examine the problems of urban development. The report was published in August 1988. We reproduce below its chapter on Housing (Vol. II, Chapter 11).

11.1 *Introduction*

11.1.1 The most visible and dehumanising manifestation of India's urbanisation is the large number of squatters and shanty dwellers so ubiquitous in all our major cities. The causes of this distressing situation are deep rooted in wide-ranging factors, from building regulations to economic growth policies. The Commission, in this chapter, explores the nature of housing problems, identifies the areas of critical policy focus and recommends an appropriate policy package.

11.2 *Analysis*

11.2.1 The stark reality of the urban housing scene in India is that more than two lakh urban households are without any shelter and as many as 45 per cent are living in just single-room houses, nearly 5 persons to a room, in a state of extreme over-crowding. Adding to their agony is the absence or inadequacy of the basic services. In 1981, nearly 37 per cent were without electricity, and about 66 per cent were without a latrine.

11.2.2 The Seventh Five Year Plan document begins its chapter on Housing with this statement:

In fulfilling the basic needs of the population, housing ranks next only to food and clothing in importance. A certain minimum standard of housing is essential for healthy and civilised existence. The development of housing, therefore, must enjoy high priority in a poor society such as ours where housing amenities are far below the minimum standards that have been internationally accepted. Housing activity serves to fulfil many of the fundamental objectives of the plan: providing shelter, raising the quality of life, particularly of the poorer sections of the populations; creating conditions which are conducive to the achievement of crucial objectives in terms of health, sanitation and education; creating substantial additional employment and dispersed economic activity; improving urban renewal and inter-personal equity through the narrowing down of differences in standards of living and, last but not least, generating additional voluntary savings.

11.2.3 The urban housing stock which was 14.1 million in 1961 had increased to 18.5 million in 1971 and to 28 million in 1981 (18 million pucca, 6.8 million semi-pucca and 3.1 million kutcha). The increase was about 4.4 million units during 1961-71 and about 9.5 million during 1971-81. The stock in 1971 consisted of 64 per cent pucca units, 23 per cent semi-pucca units and 13 per cent kutcha units. These percentages have remained unchanged over the period 1971-81. Not only this, but the stock has not kept pace with requirement. Furthermore, the estimated age-composition of the 1981 housing stock indicates that about 21 per cent of the stock is more than 60 years old. Most of these units are dilapidated and warrant attention.

11.2.4 Policy statements in successive Plan Documents have continued to emphasise the importance of the housing sector but, in reality, investments in housing as a percentage of total investments has declined. As may be seen from Table 1, within the total investment, the share of the private sector has been dominant, even though private informal investment is not included.

TABLE 1. INVESTMENT IN HOUSING IN INDIA, PRIVATE AND PUBLIC SECTOR

(Rs Crore)

Plan period	Investment in Housing		
	Public	Private	Total
First Plan	250	900	1,150
Second Plan	300	1,000	1,300
Third Plan	425	1,125	1,550
Fourth Plan	625	2,175	2,800
Fifth Plan	1,044	3,636	4,680
Sixth Plan	1,491	11,500	12,991
Seventh Plan	2,858	29,000	31,858

INVESTMENT IN HOUSING IN INDIA
PRIVATE AND PUBLIC SECTOR

11.2.5 The housing sector occupies an important place in the national economy as seen by its contribution to national income, capital formation and development generation. Table 2 shows the income from housing and its share in national income. Housing accounted for 16.72 per cent of the gross capital formation in the country in 1984/85.

TABLE 2. CONTRIBUTION OF URBAN HOUSING TO NATIONAL INCOME (at current prices)

(Rs Crore)

Year	Income from Urban Resi. Housing	National Income (GDP at factor cost)	Col. 2 as % of Col. 3
1977/78	445	36,452	1.22
1978/79	1,260	87,058	1.45
1979/80	1,339	95,511	1.40
1980/81	1,364	113,846	1.20
1981/82	1,447	130,763	1.11
1982/83	1,489	145,280	1.02
1983/84	1,649	171,713	0.96
1984/85	2,059	189,417	1.09

Source: *National Accounts Statistics* 1987, Central Statistical Organisation.

11.3 *Urban Housing Needs*

11.3.1 According to the estimates made by the National Buildings Organisation, the urban housing deficit in 1981 was of the order of 5.9 million units.

TABLE 3. URBAN HOUSING DEFICIT

Components	Number (million)
1. Shelterless households	0.2
2. Overcrowding and Congestion	
(a) Excess of households over available housing units	1.1
(b) Number of married couples requiring separate room/house	0.3
3. Replacement of Kutcha units	3.1
4. Obsolescence/replacement of old housing units (over 80 years old)	1.2
Total	5.9

11.3.2 This is, however, in a way, an understatement of the problem. In 1981, out of a total urban population of nearly 160 million, 32 to 40 million (or 6 to 8 million households) were estimated to be in slums alone. Thus 20 to 25 per cent of the urban population live with multiple deprivation: (a) illegal land tenure, (b) deficient environment, and (c) kutcha shelter. This is a result of the gap between the demand and the legal, formal supply. Only around 80 per cent of the annual incremental demand is satisfied through the legal and formal supply. (However, this proportion varies considerably over various cities.) In the absence of deliberate policy interventions, the proportion of slum dwellers may continue to be 25 per cent of the total urban population in 2001. This would imply a near doubling of the 1981 slum population to 60 to 75 million by 2001. The shelter demand, supply and resultant backlog are shown in Table 4.

11.3.3 The term slum has been defined in legislation to include buildings and areas that are environmentally and structurally deficient. However, this has not been consistently applied in practice. The entire walled city of Delhi has been declared a slum, but Bombay's chawls are not considered to be slums. The term slum is, by and large, confined to illegal squatter settlements. Besides slums, therefore, there exists a problem of old, decaying inner-city areas. The national dimension of this problem is not accurately known. Nevertheless, the problem is very real.

11.3.4 The failure to provide adequate (in size and scale), proper (in location and design) and affordable (in the form of rent or hire purchase instalment or capital investment) housing manifests itself in many forms: overcrowding, congestion, high prices, formation of slums and squatter settlements, high incidence of unaccounted money, and other distortions in the housing market, and a sharp decline in the quality of the overall living environment. Rapid population growth, inadequate investment, widespread poverty, low income and savings levels of the majority, the sluggish supply rate of new, formal housing on account of legal, institutional and administrative constraints, rapid deterioration in existing housing stock due to poor maintenance and active hostility to the housing stock informally generated by the poor, are some of the principal causes of housing crises.

11.3.5 The shelter problem thus comprises,
(a) how to increase shelter supply,
(b) how to improve and upgrade slums, and
(c) how to conserve existing housing stock.

The solution, however, need not follow a welfare approach. As already demonstrated, housing and infrastructure investments are productive, they are investments in the asset that yields a flow of services over time and they should be evaluated like any other productive investment.

11.3.6 Before proceeding to seek solutions, it is necessary to emphasise that a house must include, at the least, the following attributes:
(a) it must provide shelter from the elements,

(b) it must provide living space along with services like water, sewerage, roads and electricity, and
(c) its location must afford reasonable access to work-places.

11.4 *Nature of Housing Demand*

11.4.1 Given the growth of urban population, the annual household formation is likely to increase from 1 million in 1981 to 1.7 million in 1991 and 2.2 million in 2001. (This is assuming a constant household size of 5 persons; if this drops the number of households would correspondingly increase). These are indicative of the new housing units required every year, though some may find place in existing subdivided houses. The nature of housing demand, however, varies considerably, depending upon ability to pay for shelter and access to housing finance (for owner-occupied houses).

TABLE 4. DEMAND AND SUPPLY OF SHELTER, 1981-2001

	1981	1986	1991	2001
Urban Population (million)*	160	192	230	326
Urban Households (million)	32	38	46	65
Incremental Households (million)		6	8	19
Formal Incremental Shelter Supply				
High (million)		4.8	6.6	15.6
Low (million)		4.6	6.2	14.6
Slum HH (incremental)**				
High (million)		1.4	1.8	4.4
Low (million)		1.2	1.4	3.4
Total Slum HH (million)				
High	8.0	9.4	11.2	15.6
Low	6.4	7.2	8.6	12.0

* Seventh Five Year Plan, Vol. I.
** Report of the 'Task Forces on Housing and Urban Development', Planning Commission, 1983 (Report 4)

11.4.2 The distribution of households according to monthly expenditure and their expenditure on consumer rents in 1983 was as shown in Table 5. Consumer rents per households are derived in this table by dividing the total rent by total number of households, without accounting for the imputed rents of home-owners. The rents shown are, therefore, underestimates in terms of ability to pay for shelter.

TABLE 5. DISTRIBUTION OF HOUSEHOLDS BY EXPENDITURE AND CONSUMER RENT

Sl. No.	Monthly Expenditure (Rs)	% of Households	Consumer Rent
1.	Less than 400	7.79	4.90
2.	400 to 600	31.34	12.17
3.	600 to 800	28.96	24.23
4.	800 to 1,000	17.14	43.08
5.	above 1,000	14.77	68.85

Source: Derived and rounded from Sarvekshna, Vol. IX, No. 4, april 1986.

11.4.3 Distribution of household income, wealth and saving from 1975/76 is given in Annexure 1. It may be observed from this table that 10 to 90 percentiles of households have income between Rs 200 and Rs 1,250 per month. The distribution of wealth and saving is, however, significantly more skewed than that of income as may be seen from Table 6. This fact of skewed wealth and savings distribution is particularly important in considering housing demand. A house is a long-term asset and for its acquisition wealth and savings have to be applied on a large scale, particularly when the rental market is not active and mortgage finance is not well developed.

TABLE 6. DISTRIBUTION OF WEALTH AND SAVINGS

Percentile	Share of Income	Wealth	Savings
10-50	19.7	13.10	4.95
50-90	48.8	32.37	38.24
90-100	31.5	54.53	56.81

11.4.4 For the convenience of further discussion the 1976/77 income distribution has been translated into 1986/87 prices, assuming that no structural changes have taken place in income distribution though a comparison of 1967/68 and 1976/77 incomes show that the share of the bottom 50 per cent of households has increased from 14 per cent to 22 per cent. The distribution of households according to monthly income classes is shown in Table 7.

TABLE 7. DISTRIBUTION OF HOUSEHOLDS BY MONTHLY INCOME

	Household Rs/month	% of house-holds	Cumulative % age
1.	Upto 400	12.33	12.33
2.	401 to 600	17.32	29.65
3.	601 to 800	16.02	45.65
4.	801 to 1,000	13.68	59.35
5.	1,001 to 1,250	10.47	69.82
6.	1,251 to 1,500	7.07	76.89
7.	1,501 to 2,000	8.43	85.32
8.	2,001 to 3,000	7.84	93.16
9.	3,001 to 4,000	3.47	96.63
10.	4,001 and above	3.37	100.00

11.4.5 As noted earlier, the rents as percentage of household expenditure shown in Table 5 are under-estimates. Further, they also reflect old rents (perhaps controlled) in old buildings. Assuming that, given the right opportunity, new households will be prepared to pay more for new houses, the ability to pay for shelter could be taken as ranging from 10 to 30 per cent of the monthly income. (A recent study in Ahmedabad indicates that owners spend 12 per cent of their income on housing.) Affordable capital for households of different income groups is shown in Table 8.

TABLE 8. AFFORDABLE CAPITAL FOR HOUSING BY INCOME GROUPS

	Income Group (Rs)	% of Income for Shelter	Affordable Capital (Rs)	% of Households	Cumulative % of Household
1.	Upto 400	10	2,724	12.33	12.33
2.	401 to 600	11	4,995	17.32	29.65
3.	601 to 800	12	7,628	16.02	45.67
4.	801 to 1,000	15	12,981	13.68	59.35
5.	1,001 to 1,250	18	19,471	10.47	69.82
6.	1,251 to 1,500	20	26,442	7.07	76.89
7.	1,501 to 2,000	22	39,333	8.43	85.82
8.	2,001 to 3,000	25	63,852	7.84	93.16
9.	3,001 to 4,000	30	1,07,271	3.47	96.63
10.	4,001 and above	30	1,75,137	3.37	100.00

11.4.6 The affordable capital is based on the assumption that housing finance will be available at 12 per cent per annum, with a repayment period of 15 years. These affordability levels are largely based on income and saving abilities. Only 10 to 30 per cent of the total capital is assumed to come from wealth (or already accumulated savings) as down payment.

11.4.7 Table 8 helps us answer two questions. One: whether at the macro-level the national economy can afford to allocate that order of resources to housing; two, at micro-level, what kind of shelter can an individual get.

11.4.8 The present incremental shelter requirement could be placed at around 1.6 million per year. At a mean affordable capital of Rs 32,000 per unit, the total annual resource requirement could be placed at Rs 5,120 crore. It has been estimated that about 3 per cent GDP is being invested in housing (both urban and rural). At current GDP level, such investment could be estimated to be around Rs 6,000 crore. The investment, therefore, calls for a significant step-up in the investment by a marginal increase in its share of GDP. It may, however, be noted that the public sector outlay for the total Seventh Five Year Plan is a little over Rs 2,400 crore and HUDCO's annual lending has been around Rs 324 crore. The question, therefore, is also of equitable distribution of resources.

11.4.9 The cost of construction of a one-room (15 sq m in area) that conforms to all codes is around at least Rs 15,000. The NBO puts the minimum area for a house at 14.4 sq. m., costing Rs 18,000 for construction. This would imply that about 60 per cent of the households cannot afford such shelter. Although the level of urban poverty in terms of minimum nutrition requirement has fallen to 28 per cent, in terms of shelter it continues to be high. This is, however, based on construction cost alone. If cost of land servicing (which may be around Rs 150 to 200 per sq m of net area at conventional standards) is added, the cost of minimum shelter would further go up to Rs 20,000. This is still without the land cost. The land price represents locational advantages mainly in the form of access to jobs. Urban land values are known to be at least Rs 60 - 100 per

sq. m. depending upon city-size and location. The lowest 10 per cent of the households cannot, therefore, afford a piece of land of their own and would prefer to squat. The net 40 per cent of the households may afford a serviced plot but not any superstructure. This analysis is indicative of the broad policy direction that must be followed. This also unequivocally determines the emerging urban form.

11.5 *Framework for Response*

Adequate Housing: Obligation of a Civilized Society

11.5.1 As already recognised by the Seventh Five Year Plan, it is obligatory for any just society to provide the means of meeting the basic, minimum needs of its members. These needs include food, clothing, education, gainful employment and also shelter. They are essential preconditions both for preserving the dignity of humans and for providing a basis for their development. In this context, subsidies for at least the lowest 15 percentile of population appear inevitable. However, on account of the resource constraint, such subsidies:

(a) have to be kept to the minimum,

(b) must reach all the target beneficiaries (the number could be about 2.5 lakh households per year), and

(c) as far as possible, such subsidies should be generated internally in each project or programme.

In any subsidised programme-particularly for a private good like shelter-scale of operation is of crucial significance. It is not only necessary to cater to all the target beneficiaries but also to see that higher income groups are adequately catered to. If this is not achieved, subsidies begin to move in the wrong direction, furthering the inequities. This precisely has been the problem of public housing so far. (As would be seen later sites and services approach can take care of these issues)

Housing : A People's Activity

11.5.2 Most planners of housing programmes and housing agencies overlook the fact that, historically and actually, most houses have been designed and built by the people who presently live in them or by their ancestors. For generations people have been building on their own, inexpensive, durable, functional, properly designed and aesthetically pleasing houses, using local skills and materials. In the present-day context it needs to be emphasised that people have the skills to build, or get built, and improve. What they need is removal of constraints, and addition of supports, facilities and incentives.

Housing Crises : Result of Inappropriate Interventions

11.5.3 The present crisis in the housing sector is largely a crisis of inappropriate interventions. Broadly speaking, the legal, administrative and institutional constraints militate against the housing initiatives of the people. Therefore, the framework within which all housing action is presently confined needs to undergo drastic revision, reorientation and restructuring. Releasing people's creative energy, eliminating/reducing constraints on people's housing action and encouraging investments (in the form of time, energy and resources) should form the central theme of the restructuring exercise. A shift in emphasis from controlling to enabling, and from delivering finished products to facilitating people's action in building and improving houses, would enhance the coverage capacity of the existing agencies and problems would begin to look solvable.

An Approach to a Solution : Access to Housing Inputs

11.5.4 The key to success in increasing housing supply, both quantitatively and qualitatively, i.e. in sheltering the millions and providing need-based, appropriate houses lies in ensuring access to housing inputs : land, building materials, finance and services. The state facilitating land supply : all city dwellers being served equally in the matter of provision of basic environmental and social services, and strengthening the resource base of the local bodies to ensure this; creating properly designed, structured and staffed

housing finance agencies which may effectively reach out to and service the poor; and making arrangements that would accelerate production of low-cost building materials and increase supply and usability of reusable, recyclible materials are the steps that must be taken.

Failure to Supply Land : Root Cause of the Problem

11.5.5 Slums as a housing type are the outcome of a major failure on the part of the state, the society and its market mechanism, to supply, in appropriate form and affordable cost, a basic need to its people. Those who live in 'ugly slums' and 'unauthorised settlements' are there not out of choice but out of compulsion. The slums are a product, not always devious designs of the lazy and the criminal as is sometimes believed, but of societal injustice and inequalities on the one hand, and poor planning and inept management of urban resources, on the other. The State's inability to provide the housing inputs listed above, especially land, to the weaker sections at an affordable price is the root cause of the problem, which leaves no option to the poor but to squat. The illegal occupation of land is a direct consequence of the State's failure to provide legal access to buildable land. High prices push low-income people to squatting.

Effective State Intervention in Land Supply : The Key Factor

11.5.6 The State has effectively intervened in the provision of the other two basic necessities of daily life; food and clothing. Rationing, dual pricing of foodgrains, and food subsidies have helped the poor to exercise the spectre of hunger. The state has also introduced the janta cloth and other such schemes to help the poor get at least a minimum of clothing. But State interventions in the production of serviced land and its distribution have failed miserably. The housing crisis is mainly the consequence of this failure.

11.5.7 The State's effective intervention in increasing land supply at prices affordable to the weaker sections and in quantities commensurate with their numbers is the key to solution of the housing problem. To generate proper housing the State must ensure an adequate and affordable land supply.

A Comprehensive Approach : Curative and Preventive Strategies

11.5.8 To ensure adequate housing for the urban poor in a reasonable time-span and at a cost affordable both the to the poor and the State, which would reduce compulsions to squat, a combination of preventive and curative strategies are needed. Restructuring the city in respect of the job-home relationship and rationalising the use of its land resources through policy and planning interventions, should be the key elements of the strategy. Improving living conditions in the existing slums and other forms of degraded, dilapidated and poorly serviced settlements (like chawls) through provision of civic facilities and assistance to upgrade shelter conditions should be the main thrust of the curative strategy. And making available a large number of small, serviced land-plots at proper locations with adequate transport and communication linkages should be the central focus of the preventive strategy. Being symbiotic in nature, to be effective, these must go hand-in-hand. The growth policies, slum improvement, and sites and services projects are important initiatives in these strategies. To get results, a greater thrust, refinement, additions and an enlarged operational scale are needed.

11.5.9 To shelter the millions living in sub-standard housing and environmental conditions in urban slums and on city pavements within the limited resources at our disposal and in a reasonable time-span, it is necessary to depart significantly from existing practices, bring about a notable change in perspective and adopt a new set of values, both for the housing client and those who make decisions on their behalf. These changes include:

(1) a new understanding of the problem as not an insurmountable obstacle but a manageable challenge;

(2) a major shift in attitudes towards people (not an idle burden, but a productive resource);

(3) a new interpretation of and approach to peoples' self-initiated housing actions and self-generated housing stock (even if deficient, it is an approach to a solution, not a problem; not to be demolished but to be conserved and improved);
(4) a new definition of a house (not necessarily a pucca or permanent status symbol but one that shelters adequately);
(5) a new definition of the housing task (not necessarily permanent buildings but liveable, adequate environment);
(6) a new thrust (not a few finished houses but a massive supply of serviced land);
(7) a new role for the traditional housing agencies (not controllers but facilitators, not providers but promoters);
(8) a new relationship between the agencies and the housing clients (not givers and receivers but partners);
(9) a new economics (not charity but investment);
(10)a new definition of scale (not tokenism but total coverage); and
(11)for some, a new vision (not houses alone but overall development).

11.6 *The Policy*

11.6.1 In conventional housing models, residential location choice is explained as a trade-off between transport costs and shelter costs (through decreasing rents). In western societies the relatively rich prefer large suburban houses though this implies higher transport costs, whereas the relatively poor opt for high-density central city housing which reduces their transport costs. In Indian cities, however, the rich occupy central city locations (Cuffe Parade, Marine Drive and Malabar Hill in Bombay), whereas middle-income groups are forced to seek suburban locations (with transport subsidies borne by the society at large). But a large section has to by-pass this trade-off and seek pavements as shelter.
11.6.2.City structure, mainly the job-distribution pattern and presence or otherwise of subsidised mass transport, has an important impact on the shelter situation. The policy prescription in this area, however, has to be city-specific. The general point can, however, be made that a general lack of appropriate pricing policies (properly tax linked to historically controlled rents, free entry and parking in the CBD for vehicles) continue to sustain excessive concentration of jobs which otherwise would have dispersed. A conscious approach to pricing public services may, therefore, be helpful.

Urban Land

11.6.3 Urban land as an input to housing has some unique characteristics. It is location-bound; one plot of land is never identical to another. Increase in supply of urban land is, therefore, basically through conversion of rural land on the periphery and extension of infrastructure services. Conventional relationships of price, supply and demand applies to urban land only in limited manner. Policies about urban land affect the entire spectrum of urban development, not just shelter or housing, it would, therefore, be desirable to deal with this issue independently and comprehensively. This section confines itself to urban land issues to the extent that they have a direct bearing on the shelter situation.

Need for Land Policy

11.6.4 Although to own land is not longer a 'fundamental right', land is still owned and transacted in the market. Unlike other commodities, the supply of urban land can be increased only by extending the infrastructure, for which land itself is a major input. The private land market, however, tends not to provide adequately for infrastructure like roads, parks, schools, hospitals, etc. This leads to 'inefficient' land-use patterns. But this reluctance to provide infrastructure is not due to lack of appreciation of the rise in value of the asset that may accrue due to infrastructure being provided. The main cause of this behaviour where there are a large number of owners, is the expectation of the individual owner that the others would provide the infrastructure. The legal, private land market also tends not to cater to the low-income sections, resulting in 'inequitable' distribution of shelter opportunities. Thus, to serve both the efficiency and the equity goal of urban development, it is imperative to intervene in the land market.
11.6.5 Furthermore, since urban land is inherently scarce, there is a strong speculative tendency in

the market. Such speculation needs to be controlled. Due largely to inappropriate taxation and zoning and land-use controls, there is considerable wasteful use of land-particularly by industries and institutions. Corrective measures are, therefore, also necessary to control such wasteful use.

Objectives of Land Policy

11.6.6 The objectives of urban land policy as outlined by the Urban Land Policy Committee appointed by the Government of India (Ministry of Health) in 1965 still broadly hold good. These are:
(1) To achieve an optimum social use of urban land.
(2) To make land available in adequate quantity at the right time and for reasonable prices to both public authorities and individuals.
(3) To encourage cooperative community effort and bona fide individual builders in the field of land development, housing and construction.
(4) To prevent concentration of land ownership in a few private hands and specially to safeguard the interest of the poor and underprivileged section of the society.
In addition, a commonly held objective is:
(5) To use land as a resource for financing urban development by recouping the unearned income which otherwise accrues to private landowners.
To this list, the Planning Commission Task Force on Planning of Urban Development added the following objectives:
(6) To encourage the socially and economically efficient allocation of urban land such that land development is done in a resource-conserving manner and that the magnitude of land used is optimal.
(7) To promote flexibility in land-use in response to changes resulting from a growing city.

Policy Measures

11.6.7 Although the objectives have been neatly formulated, the policy measures which can achieve these objectives in practice still remain to be sharpened and coordinated. A large number of policy measures can be derived from a repertorie which can be classified as (a) direct governmental development, (b) legal and regulatory, and (c) fiscal.

(a) Direct governmental investment in land development for provision of infrastructure, housing or overall town development.
(b) This is normally strengthened by statutory provisions for compulsory acquisition of land at less than market price. In addition, regulations regarding land-use zoning, development control and building codes also exist which are usually based on axiomatic norms for health and safety but give rise to inequitable shelter development and illegal land markets.
(c) Fiscal measures in the form of appropriate taxation can also help achieve land policy objectives. For example, property tax levied on periodically reassessed properties can mop up part of the unearned income, discourage speculative hoarding of land and promote optimal use of land.
Despite such a variety of policy instruments, the emphasis has, by and large, been on direct governmental investment in conjunction with legal intervention in the land market. For this purpose, over time, increasingly powerful legislation has been enacted to take urban land into government ownership.
11.6.8 The Land Acquisition Act, 1894 and the urban Land (Ceiling & Regulation) Act, 1976, have been the two principal legal instruments to obtain land. The problems of implementing the Urban Land (Ceiling & Regulation) Act, 1976, have already been discussed in the Interim Report of the Commission. Recommendations for more effective implementation of the Act have also been made in the chapter on Land as a Resource. Delhi's experience of large-scale land acquisition (through the Land Acquisition Act) indicates that:
(i) Despite large-scale public ownership of land the distribution of land resources is not equitable, which may manifest in the form of squatter settlements of the poor.
(ii) The lack of price signals and excessive governmental control may tend to wasteful use of land resources in favour of influential sections of the society.
(iii) Monopolistic control on land and the temptation to build a revolving fund may induce the development agency to auction land in small quantities and then use such scarcity prices as the fair market price for further allocation of land. This, instead of controlling land prices and speculation, leads to inflation of prices.
Furthermore, a strategy that relies on large-scale

acquisition of land, due to inadequate possession of land in public ownership, lags in terms of the need for service land. This gap between need and supply of serviced land may itself defeat planning objectives. For example, land acquired and developed for the purpose of low-income housing, if inadequate in quantity, would always go into the hands of middle and high-income groups. Similarly, inadequate development of land and freezing of the balance of land notified for acquisition would increase the scarcity value of developed land (but not notified for acquisition). Thus the principal objective of helping the poor and controlling land prices could be defeated.

11.6.9 The emphasis of policy should, therefore, be on:

(a) increasing the supply of land to both public agencies and private individuals and not to restrict it in any form that may increase prices and affect the poor.

(b) recovering the cost infrastructures to make the process of land development replicable and to deemphasise the recoupment of incremental or so-called unearned, value.

(c) widening the base of land ownership and not necessarily increasing the government ownership of land.

11.6.10 Land readjustment (L R) appears to be a promising way of achieving these objectives. In an typical land readjustment scheme, land assembly and development is guided by a public agency. Land readjustment is based on the fact that land values increase significantly after provision of urban infrastructure. The increase is of such magnitude that, if a small proportion of land is sold, it recovers the cost of infrastructure and the remaining land can command an attractive rate of return over the original land value to the landowners even after foregoing land for infrastructure and for sale by the developing agency. It would also be possible for public agencies to retain some percentage of developed land for low-income shelter. Land readjustment schemes, however, face the following problems:

(a) land assembly has to be done by public agencies, which may be difficult;

(b) valuation of property before and after the implementation of LR schemes can be a complicated matter, often subject to litigation: and

(c) equitable distribution of 'value added' amongst landowners can be a complicated business.

11.6.11 A version of LR scheme which is being included in the proposed Tamil Nadu Urban Development Project tries to bypass these problems by devolving the responsibility for land assembly on private initiative as described below:

In this version the emphasis is on ensuring:

(i) Fair return on investment to the private owner/developer; and at the same time,

(ii) a relatively large proportion of serviced sites for allotment to low-income families.

However, as constraints on free sale and markets are implicit in the objections, the following scheme can best work when lands are notified for acquisition or are subject to the Urban Land (Ceiling and Regulation) Act, 1976. The steps involved may be as follows:

(a) The local planning authority, after studying the land market, prepares guidelines for development which help ensure the objectives mentioned above. The most critical amongst the guidelines would be the minimum number of low-income plots that must be developed per gross hectare of land.

(b) The public authority could then invite draft development proposals that conform to the guidelines. As the economics of the scheme depend on past development land prices, proposals would come from locations most suitable for early development. Others will follow as urban development potential expands incrementally.

(c) The local planning authority can sanction the draft development proposal and agree to exempt the land from the Urban Land (Ceiling and Regulation) Act or the Land Acquisition Act on satisfactory development.

(d) The local authority can have pre-emptive rights to purchase low-income plots and social facility areas at predetermined prices.

11.6.12 In the present legal framework such guided development is feasible only when the 'stick' of compulsory acquisition has been invoked. However, for more general application enabling provisions need to be incorporated in the town planning legislation itself. However, public sector efforts towards land development on the sites and services model should continue rigorously. This would enable:

(a) Using limited public resources for creating maximum shelter opportunities for the entire

cross section of the society with a bias toward lower income groups, and
(b) Achieving full cost recovery at affordable prices through location and amenity pricing (and not so called - arbitrary - cross subsidies).

The second point perhaps needs some elaboration.

(a) We generally consider the average development cost while deciding whether a particular plot is subsidised. However, on large site, development cost varies considerably. Local cost of small plots served by pedestrian pathways and modest services are found to be 30 per cent to 40 per cent of average cost. On the other hand, plots served by wider and stronger roads for vehicular traffic have cost 150 per cent of the average cost.
(b) Similarly, the land price (an index of utility) varies considerably in a large site. Corner plots on wide and strong roads having commercial potential have a very high value whereas small narrow plots fronting pedestrian pathways have low values.
(c) The differential costs and differential prices which are inherent qualities of land as a resource can be judiciously used in the layout design, so that low income groups could be helped with minimal or no subsidies.
(These principles are increasingly being used in the World Bank assisted projects)
Furthermore, the principles of "affordable prices with full cost recovery" prevents a sites and services project from becoming a ghetto. In most sites and services projects, households forming upto 40th percentile in the cross section constitute about 60 per cent to 70 per cent of the project beneficiaries and remaining 30 per cent to 40 per cent of higher income groups.
These principles are implicit in the guided land development described above.

Land Information System

11.6.13 For any land policy to succeed, there has to be an effective information system. The present state of land data is totally inadequate. Continuously updating information about location, ownership, physical characteristics and current land use is of utmost importance (see chapters on Land as a Resource and Information System).

Long-term Planning

11.6.14 Effective land policy for a given city can emerge only in the context of a long-term plan, but this has to be different from a conventional master plan. Apart from the end-state land-use picture, it has to have a sequence of land development linked with an infrastructure investment programme.

Finance

Existing Housing Finance System

11.6.15 The existing housing finance system has two broad segments - formal and informal. The formal sources comprise, (a) budgetary allocations of central and state governments; (b) general financial institutions/organisations like the Life Insurance Corporation of India, General Insurance Corporation of India, commercial banks and provident funds, and (c) specialised housing finance institutions, like the Housing and Urban Development Corporation Ltd (HUDCO), the apex and primary cooperative housing finance societies and a few housing finance companies set up in the private sector. The informal sources include households savings and private sector employers providing housing loans to their employees.
11.6.16 Estimates of the annual investment flows into the housing sector indicate that in 1982/83 formal institutional funding of housing was Rs 1,071.18 crore, forming 25.6 per cent of the total investment of Rs 4,179.23 crore, the balance Rs 3,108.05 crore, or 74.4 per cent, coming from informal sources. If inter-institutional transfers of funds are adjusted, the real contribution of the formal sector would be still lower. Although its investment in housing has been progressively increasing over the years, the various agencies in the formal sector will have to significantly step up their allocations to housing to make a significant impact.
11.6.17 Admittedly, compared to the huge volume of funds needed to tackle the housing problem, the resources available from the formal sector will be small. There is, therefore, need to

adopt measures aimed at a large flow of resources for housing and, at the same time, provide the stimulus and opportunity for households to undertake additional savings. At present, there is no proper institutional framework to encourage savings for the purpose of investment in housing, nor is the assisting system responsive to the characteristics of the housing market. During the past one and half decade, several expert groups have examined housing problem in depth and recommended the creation of well-defined housing finance system through the establishment of appropriate institutions at various levels which will mobilise resources for housing and promote housing activity.

Need for a Specialised Housing Finance System

11.6.18 A Study Group appointed by the Banking Commission (Chairman, Shri R. G.Saraiya) had recommended in 1971 the creation of specialised housing finance institution to enlarge the flow of funds to the housing sector. The R.C. Shah Working Group on Housing Finance set up by the Reserve Bank of India in 1978 also recognised the need for a specialised central housing finance institution.The Seventh Five Year Plan has also proposed the establishment of a specialised financial institution in the form of a National Housing Bank, on the lines of NABARD, in order to fill the present lacuna of non-availability of long-term finance to individual house builders. Such an institution has been conceived to play a wide-ranging role by functioning as a promotional agency for creating a diversified and extensive housing finance structure, besides mobilising and channelising resources for housing, providing facilities such as refinance, guarantee, etc.

Proposed Institutional Framework for Housing Finance

11.6.19 The institutional framework will have to be responsive to the different needs of the various sections of the society. The option of providing price subsidies vs. interest-rate subsidies to the weaker sections will have to be carefully exercised.

Proposed National Housing Bank

11.6.20 The creation of a National Housing Bank at the apex level, and a supporting institutional set-up at appropriate lower levels, is intended to help meet the credit needs of individuals and groups in solving their housing problems and also to facilitate resource mobilisation. The limitation of the existing system is that credit at reasonable rates of interest and terms of repayment is virtually not available to potential home owners. There is need to restructure and mould the system in a way that people are motivated to save more in order to possess a dwelling unit. This would necessarily involve the mobilisation of savings/resources and putting them to proper use. The potential that people have for savings for home ownership has to be tapped. The National Housing Bank has been proposed as the apex level housing finance institution to facilitate, promote, regulate and create at the state, regional and local level, housing-finance institutions and encourage appropriate lower-level organisations to meet the individual credit needs of potential owners and facilitate channelisation of resources into the housing finance intermediary system through a chain of economically viable housing finance intermediaries. The function of the National Housing Bank would be:

- to promote new housing finance institutions at the regional/state level;
- to promote new institutions at base level by identifying viable, reliable groups, providing seed capital to them as also professional expertise and support in the initial years;
- to formulate policies relating to mobilisation of resources and extension of credit for housing, including creation of new instruments of savings linked to housing;
- to regulate the working of the housing finance institutions at the base level (both regional and local) and coordinate their activities, as also those of other agencies in the housing field;
- to identify the impediments - legal, fiscal, physical, environmental and technical - to the active involvement of the household sector in developing its savings in housing and to promote measures by way of changes in the law, enactment of new legislation, simplification of procedures, etc. to remove them;
- to mobilise resources for housing;

- to extend financial support to housing finance intermediaries such as HUDCO, HDFC, state/regional-level housing finance institutions, including apex cooperative housing finance societies and local-level organisations.

11.6.21 The National Housing Bank would have to endeavour to ensure that income targeting, with a view to accommodating different categories of population and maximising the benefits, is kept in view by the housing finance intermediaries while advancing credit for home loans. It will also have to extend financial assistance for repairs and reconstruction of existing stock, urban renewal, local infrastructure improvement and rental housing.

Proposed Second/Third Tier Level Institutions

11.6.22 For the proper working of the institutional set-up, it is necessary to have local and regional-level institutions. This would form the second and/or third tier(s) in the proposed set-up. The second tier institutions will be the bridge between the potential owners and the National Housing Bank at the apex level. The housing finance intermediaries, at the second tier level, will be primary mobilisers of savings/resources and originators of home loans. The state/regional-level institutions could be in the joint, state or private sector. For extending the system of financial intermediation to an increasing number of people, the services of institutions like the LIC, GIC, UTI, and commercial and cooperative banks, can be utilised to optimise the operational/distribution costs.

11.6.23 The National Housing Bank will thus be a statutory body and will operate through the network of decentralised institutions at the second/third tiers catering to the needs of the regional and local levels. These institutions will function as intermediaries linking current house buyers in need of credit facilities with people who would have the money for either owning a house in the near future or for any other contingency.

11.6.24 To mobilise resources from institutions as well as individuals at the grassroots level, the housing-finance intermediaries would have to devise attractive loaning and savings mechanisms. The present credit mechanisms available from housing finance institutions are of the conventional type and do not necessarily serve the interests of the borrowers. Thereby they restrict the loaning capacity of the institution itself and also restrict the number of potential beneficiaries.

11.6.25 In order to maximise the credit facilities, various types of savings instruments/mechanisms will have to be formulated to cover individuals belonging both to the organised and unorganised sectors who have a minimum income base to meet the repayment schedule. At present, many potential home-owners are denied credit facilities simply because of lack of appreciation of their credit-worthiness and inadequacy of lending mechanisms. At the same time, the need for providing risk cover to the lending institutions has been recognised and a separate scheme for mortgage insurance has to be formulated.

11.6.26 The state governments would need to play a catalytic role for promoting the setting up of housing finance intermediaries at the regional, state and local levels. The focus should initially be on 'National Cities', metropolises and Class I cities for setting up housing finance institutions and savings and loan assistance on the model of building societies in the U.K. In the small and medium towns, cooperatives could also be strengthened suitably for this purpose. The central and state governments could also play a useful role by providing seed capital at the initial stages to the housing finance intermediaries.

11.6.27 Studies should be commissioned to devise strategies to accelerate the flow of finance for shelter and services for benefiting the maximum number of households especially those living in the low-income settlements.

11.6.28 A specific institutional mechanism must be instituted to provide poor households with greater access to affordable credit and establish, with the help of voluntary organisations, linkages between the formal and informal sector. Lending mechanisms for the poor should be devised to suit their irregular income and incremental building methods. Keeping in view the fact that a sizeable percentage of workers in organised and unorganised industries are without shelter, the owners of industries must allocate a small percentage of their capital and their annual profits for meeting specific housing needs of their workers.

Building Materials

11.6.29 The following activities have to be pursued in the field of building materials and technology:

- promotion of the use of low-cost, locally available, low-energy consuming building material and use of agricultural, industrial and other wastes;
- promotion of the use of low-costs, alternative and new building materials in housing and thereby contributing to affordability of housing (the schedule of items of work of housing agencies/PWD should include their use);
- promotion of the use of factory-made building materials and components and adoption of innovative technology (the manufacturers of such material/components should be given preferential treatment through lumpsum/turnkey contracts at comparable rates, without going through normal tender procedures); and
- promotion of the setting up of building materials manufacture and distribution centres and industries (captive markets and financial support be provided specially by housing authorities).

11.6.30 The impact of indirect taxes and levies on the prices of building components and materials must be reviewed with a view to lowering their incidence on the cost of construction.

(i) Institutional finance should be made available for manufacturing building materials especially at the district, sub-division and block levels.

(ii) Building materials centres should be promoted by giving incentives in terms of cheap land and other physical and fiscal incentives to private entrepreneurs with a corresponding chain of building retailing centres to effectively distribute these products to the ultimate users.

(iii) In order to set an example and promote the use of these building materials, they should be included in the Schedule of Items of Works of Housing Agencies and PWDs who should use them. A percentage of these materials should be used by public sector agencies in their construction activities, keeping in view the fact that public agencies should be active users of low-cost building materials.

(iv) When considering alternative materials and technologies, the highest priority should be given to cost-reduction and applications in the informal housing supply, which caters to the majority of low-income households.

(v) While the rational use of building materials is important, it is equally important to consider such design and sociological aspects as the way of life of the users, the distribution of space and the appropriate utilisation of building materials.

(vi) Emphasis should be placed on improving existing methods of production of building materials. Programmes of on-the-job training with regard to specified production, technological and management skills should be implemented.

(vii) Information about minor deposits of raw materials, including agricultural and industrial residues, should be collected and analysed and such information should be made easily accessible to small-scale entrepreneurs.

(viii) It would be appropriate to develop standards to facilitate use of traditional materials and practices. As far as possible, women should be actively involved in the information of standards that are directly concerned with areas which affect their lives and needs.

Legislation

11.6.31 Cohesive legislative support for housing has been lacking. In the Constitution of India, housing does not find specific mention. However, in so far as housing for industrial labour is concerned, item 24 of list III (Concurrent List) may be said to cover it because it deals comprehensively with the welfare of labour. This would place the subject in the Concurrent List, with which both the union and state governments are concerned. The residual powers in relation to the subjects not mentioned in the State or Concurrent Lists, however, vest in the union legislature. As such, the union government may be said to be directly concerned with the subject of housing in general. Legislative action by the central and state governments must address the following issues:

Laws related to mortgages:

(i) These are necessary to enable institutions to give loans on mortgages; thereby increasing the availability and flow of finance to intending home-owners. It will also be necessary to introduce mortgage insurance and provide for speedy fore-closure and develop a secondary mortgage market, thus opening vast possibilities of resources mobilisation for investment in the housing sector.

(ii) Housing must be declared an Industry so that institutional finance and other facilities become available to entrepreneurs in both public and private sectors.

(iii) Laws relating to registration of developers and builders will have to be reviewed and strengthened to attract entrepreneurs to the

housing industry.
(iv) To secure optimum and judicious utilisation of land, keeping in view local conditions and, in particular, the housing needs of the poor, low and middle income groups, urban planning laws and building regulations will have to be formulated to promote low-rise, high-density development.
(v) Local planning and building codes must be simplified and rationalised in order to facilitate imaginative designs, low-cost housing and an acceptable level of environment, keeping in view the requirements of economically weaker sections and low-income groups.
(vi) Emphasis must be laid on corporate development including multiple ownership of plots, apartment buildings and condominiums in congested and high-land-value areas. Appropriate laws will be enacted to facilitate such developments and their proper maintenance.
(vii) Various housing-related controls must be amended to change them into facilitators rather than constraints on housing activity. (An example of such facilitative legislation is the Apartment Ownership Legislation.)
11.6.32 Most of the actions on the legislative front, including amendment of building regulations and standards, have to be taken at the level of the state governments. In fact the position in this regard varies considerably, and in some states, no proper legislative and promotional framework exists for housing Systematic efforts need to be initiated by the state governments, under the guidance of the Ministry of Urban Development. Simultaneously, parallel legislative action should be initiated by the central ministries in charge of finance and agriculture to provide a conducive local environment for investments in housing by the authorities, private sector, cooperatives and individuals.

Rental Housing

11.6.33 In any given time span, there will be individuals and households who are either not interested in owning a house or just cannot afford it. For such groups, rental housing is the answer. In 1981, 56.8 per cent of urban households lived in rented accommodation. Land policy that aims at widespread land-ownership should then lead to landowners renting out one or two rooms. Such investment should also be financed by the National Housing Bank and its subsidiaries. Such rental units would also help income augmentation of low-income households. The Commission has already made detailed recommendations regarding reforms in rent control legislation.

Institutions

11.6.34 The success of housing programmes depends on the strength of the institutions involved. As recommended earlier, government's role should mainly be that of a 'facilitator', not of a 'deliverer' of housing. The change, therefore, calls for reorientation of the existing institutions and proper chartering of the new ones. We would like to quote here, with approval, the following important observations of the Task Force on Housing and Urban Development - Shelter for the Urban Poor and Slum Improvement, constituted by the Planning Commission in 1983:

Task Force noted with concern that in spite of policy commitments to self-help housing by the poor and encouragement of private initiative as well as some striking examples of successful low-cost self-help housing in recent years, Government-sponsored house construction agencies continue to proliferate. These agencies, almost universally, are patterned on the bureaucratic model and adopt a rigid brick and mortar approach to housing. While some amount of urban housing may be built by specialised agencies in the public, private, and cooperative sectors, there is overwhelming evidence to show that efforts to produce affordable housing for the poor by corporate bodies have failed. The evidence points to the fact that the bulk of housing of the poor is produced through their own efforts, legally or illegally. If public intervention in this field is to be effective, it will have to take into account the woeful limitations of Governmental organisations, abilities to cater to the needs of low-income families in terms of costs, quality functional adequacy, location and cumbersome process.

A radical change in the orientation of public housing agencies is called for if they are to serve the need of low-income people better. Housing is considered by many as an entry point to a comprehensive programme for developing people. While it may be too much to expect Housing Boards to become vehicles of social development overnight, a happy via media could be achieved

if housing is regarded by these organisations as a component of an integrated programme of services which must include health, education, recreation and sports, mother and child care and support for income-earning activities. This is well within the realm of possibility and some inspiration can be drawn from the Slum Clearance Board in Madras and the Municipal Corporation in Hyderabad.

11.6.35 This reorientation of public agencies can be assisted by including the participation of non-governmental agencies in the provision of shelter programmes for the poor. In organising the poor for self-help, be it for construction of low-cost houses or delivery of basic environmental or social services, the non-governmental, voluntary agencies, either non-professional organisations or small community groups, should be encouraged to play a specific role. Many such agencies and groups with the required orientation and skills are in existence today and many such groups are coming up rapidly in big cities. They are capable of playing multiple roles, starting from designing and implementing multi-sectoral projects to managing material banks and running a small dispensary in an improved slum locality.

11.6.36 The staff-structure of existing housing authorities is also designed to support the bricks and mortar approach. Consequently, these organisations are dominated by civil engineers drawn on deputation from the PWD. The organisational structure will have to be balanced to effectively pursue the thrust of the policy outlined above. In that context, every housing authority should have a Director, Land and Planning, a Director, Community Development, a Director, Finance, and a Director, Engineering - all of equal status - to advise the Chief Executive or the Managing Director.

Housing Through The Cooperative Sector

11.6.37 The cooperative movement in the housing sector has played a leading role in providing housing to many families which would not otherwise have become home owners. This is especially true of many countries in Europe, especially those in the Scandinavian group. In our own country, there are several examples of successful cooperative housing for the middle, low-income and economically weaker sections of the population. With the need to optimise the use of scarce resources - land, building materials, and finance - the cooperative housing sector would have to play an increasingly large role in house construction and in organising households into cooperatives for the purpose of house ownership. The following strategies are, therefore, recommended:

- For low and middle-income groups, the cooperative housing sector should be provided developed land and access to credit.
- The role of the cooperative sector in house construction must be enlarged to reach different income categories of population, including poor households.
- Policies should promote cooperative housing constructions and should help supplement public sector individual self-help approaches. It is a distinctive feature of the cooperative housing movement that members of cooperative societies assist each other in building houses.
- In communities belonging to economically weaker sections and where people are too poor to afford the cost of individual housing units and cannot easily obtain credit for acquiring shelter of their own, they can be assisted through setting up mutual-benefit organisations in which they pool their resources to buy building materials and contribute labour to construct each other's dwelling units, thereby leading to substantial cost savings.
- Government can play a role of facilitator by encouraging voluntary bodies to organise poor households into cooperatives, provide improved construction technology and building materials and make soft loans available to such organisations.
- The cooperative housing sector can also play an important role in starting building materials centres which will provide low-cost building materials at reasonable rates.
- Organisations like HUDCO, LIC, GIC can also play a major role in supplementing housing by making positive shifts and promoting flow of credit to the cooperative sector.
- The National Housing Bank would have to endeavour to ensure that income targeting, with a view to accommodating different categories of population and maximising the benefits, is kept in view by the housing finance intermediaries while advancing credit for home loans.

Role of Women and Youth in Housing

11.6.38 It is unfortunate that women's role in housing development has not yet been recognised. They are the ones who not only provide for the care and support of infants and children, but also provide labour and supplement family income as wage-earners. The role of women and youth in evolving shelter strategies is of crucial importance. Women in the informal sector, especially those belonging to the economically weaker sections and the homeless, can be made to play a meaningful role in an effective shelter programme. Women are perhaps most aware of the problems and the potential and innovativeness of women and the children of destitute and homeless families could be harnessed towards this end.

11.6.39 Women's access to shelter, essential services and community facilities should be given greater priority. Priority should be given to housing schemes for single and destitute women and migrant women labour. To supplement this, it is essential that community organisations are encouraged to develop women's cooperatives.

11.6.40 Training programmes for upgrading the skills of women and youth designed to improve shelter and services, and also to impart income and employment generating training in low-cost consumer products of daily use, to increase their affordability, should be considered.

11.6.41 Keeping in view the fact that children and women constitute a very substantial part of the population and a resource and a hope for the future, it is essential that non-formal education and literacy are imparted to them through community-based organisations. This will increase ability to absorb new ideas and also give them a better appreciation of the opportunities that are available and encourage them to adopt such technologies as help reduce the drudgery of women in performing their daily chores.

11.7 *Recommendations for Strengthening Existing Programmes*

11.7.1 Sites and services supply as an approach to improving the supply of affordable land, slum improvement as a way of conserving existing shelter, advocate themselves as the cornerstones of housing policy. Although this is being increasingly accepted, particularly through World Bank aided projects, certain changes are desirable.

Sites and Services Project

11.7.2 Though the potential of such projects for providing affordable shelter to the weaker sections is being recognised, its potential in a wider sense, as an effective way of increasing supply of affordable, serviced land to the entire cross-section of the society needs to be recognised. Many cities are planning such projects. What is even more necessary, however, is, (a) their linking-up with employment opportunities (in terms of locational decisions and job creation activities), (b) arrangements for home improvement loans, (c) an area-development (rather than a site-development) approach, with adequate emphasis on off-site infrastructure, and (d) involvement of voluntary agencies to organise people to sustain the development process. In case of continuing migration and massive backlogs, it is also necessary to step up the size of the projects and the speed of land development and allotment. Sites and services programmes would serve as a preventive strategy only if they produce a large number of serviced plots for potential home-owners. The approach needs to be extended beyond the confines of public schemes by extending the space and engineering standards to privately developed schemes.

11.7.3 Sites and services projects included in Madras Urban Development Projects I & II, the Bombay Urban Development Project, and the proposed Tamil Nadu Urban Development Project (and, perhaps, later projects in M.P., Gujarat and U.P.) have programmed public sites and services components on a scale that would help meet the entire incremental demand by the last year of a 5-6 year project. However, these projects have been delayed mainly on account of non-availability of land, consequently, the original programme objectives have suffered to that extent. The important lessons are:

(a) sites and services programmes implemented on acquired land alone will not be adequate;

(b) a sites and services type of development has to be encouraged in private land assembly and development through appropriate standards of development, and guided land development as mentioned earlier; and

(c) a part of current private sector investment should be directed to sites and services types of development.

Slum Improvement

11.7.4 The highest number of urban houses at this stage are produced in the informal sector in the form of slum dwelling. They are produced mostly by the users themselves-though an intermediary in the form a slumlord or dada is also actively servicing this market. The slums are usually situated on encroached public or private lands (and are therefore illegal), built with discarded industrial waste materials (are therefore low-cost and hence affordable to the poor), and house the poor of the cities who constitute the bulk of the work-force in the informal sector of the economy. As slums are often built on encroached land, the builders of slum housing are seen as a threat to orderly society, and even to its law and order machinery. As the lands are unlawfully acquired and the structures are built on in violation of building regulations and bye-laws, the settlements are termed 'unauthorised' and 'illegal'. Due to its unauthorised status, slum housing is beyond the tax net of the local authorities and therefore remains unserviced or poorly serviced. As they grow organically, without much planning, and as they are built with discarded, re-used materials of poor quality, they look chaotic and shabby. As they come up in violation of the zoning regulations and land-use plan of the planning and development authorities, they are considered as a curse to balanced and orderly growth of cities. The slums in Indian cities, as elsewhere, thus represent both the solution and the problem. The process that produces an affordable shelter represents a potential solution, even a solution to the housing problem (low-cost, recycled materials, self-help, easy and quick construction, fast supply rate, etc.). The illegal encroachment on public and private lands and unhealthy environmental conditions represent the problem.

(a) More projects

11.7.5 Improving living conditions in existing slums is the main thrust of the curative strategy. In situ improvement of slums is now an accepted approach and is being tried out in many cities with a varying degree of success. What is needed, however, are:

- more projects and wider coverage, particularly for slums on central government lands and private lands
- speed
- quality in planning and implementation
- additional resources and
- proper organisational arrangements to ensure resident participation.

Resident participation, besides facilitating the improvement process, would also provide a basis for organising people for post-improvement maintenance of installed services and effective cost-recovery. Lack of participation, poor maintenance of services, and unsatisfactory cost recovery performance are some of the main deficiencies of the on-going improvement programme.

(b) Secure Land Tenure

11.7.6 An important aspect of improving living conditions in slums, besides providing basic environmental services and civic amenities, is to eliminate the fear of eviction. This can be done by providing a secure land tenure (patta) for the residents. This basic security would motivate them to invest their resources and energy in improving their shelter and environment. More and more cities of the developing world are finding that the way to improve conditions is not to keep the poor in a perpetual state of anxiety and insecurity but to ensure them locational stability and secure land tenure is the way of doing it. Cities like Madras, Hyderabad and Jaipur have done it on a reasonable scale and other like Ahmedabad, Kanpur and Bombay are starting the process.

(c) Limitations of Regulation Strategy

11.7.7 Regularising existing slums by providing secure tenure to the occupants, though necessary on humane and political grounds, and especially in the light of the utter failure on the part of the State to provide land in large enough quantities at an affordable cost, and inescapable in the present socio-economic situation, may not be the

real answer to the housing problem of the poor. In the long run, it could prove counter-productive. An unqualified policy of regularisation could be an incentive for more encroachments and may become a convenient tool in the hands of the professional colonisers (slumlords) to exploit the poor. Such a policy could also become a threat to the orderly functioning of the society as it may amount to rewarding law-breakers. The haphazard, uncontrolled growth of cities, in violation of building regulations and land-use plans (however imperfect and inadequate), could become a serious handicap in the efficient functioning of the city and a threat to its health. To allow a problem to develop and assume large proportions through inaction and indifference and to accept its reality and consequences on moral/humanitarian grounds or for reasons of political expediency is to create conditions which would, in a sense, end unauthorised squatting since, in effect, all of it would be authorised. The answer lies in large-scale supply of affordable land as discussed earlier.

(d) Home improvement Loans: A Necessary Additionality

11.7.8 Providing secure land tenure is only the first, though critical, step in initiating the improvement process. Creating access to institutional resources for home improvement loans should become an integral part of slum improvement schemes. It has been found in many cities where such programmes have been taken up that people require and demand such assistance. To provide this effectively proper institutional arrangements are needed which can provide small loans in a less bureaucratic fashion and can organise recovery arrangements at a lower cost than at present. Creating such agencies is an important design-task.

(e) Organisational Support

11.7.9 The Hyderabad Urban Community Development Project has shown that, through the intervention of a properly structured, oriented and manned external agency, people's energies and resources can be mobilised for their own betterment. To ensure participation and mobilise people's resources, it is necessary to involve a UCD-type of organisation, along with engineering departments, in the improvement schemes. Expansion of the UCD scheme to all major cities is important not only for slum improvement schemes but also for dealing with the entire issue of urban poverty. UCD is an important institutional innovation in the context of tackling some of the sensitive issues related to the urban poor. Monitoring its working, studying its performance, improving its design where needed, and extending it to other urban centres is an important step in the direction of evolving an appropriate institutional base.

(f) Voluntary Agencies

11.7.10 The role of the voluntary agencies in these schemes also needs to be stressed. They could provide an important interface between the slum and the agencies responsible for improvement, relocation, sites and services and other such schemes. To encourage them to play an active role and to support, assist and strengthen them in their work is equally important.

(g) Selective Relocation

11.7.11 The slum improvement strategy should not rule out completely a selective relocation approach, either to decongest highly congested localities or even to vacate strategically located encroached lands required for public purposes. This, however, should be done only in selected cases and should be done judiciously. Unfortunately, this selective relocation approach has been occasionally misused for justifying the ruthless bulldozing of settlements. The terms 'strategically located' and 'public purpose', therefore need to be re-examined. The city development plans and their reservations are not necessarily the correct guidelines, as in many cases they are old, based on a thin information base and sometimes removed from the changing economic base and functional rule of different areas and localities. It must also be stressed that a relocation exercise should have the consent of the concerned people,

a visible and acceptable alternative, and the community's active involvement in the planning and transfer process. The cost of relocation should be considered as an integral part of the project cost while judging its economic merits.

Upgrading Inner-City Neighbourhoods

11.7.12 Most inner-city (or walled city) areas of Indian cities suffer from widespread decay of physical housing stock, inadequate infrastructure, inadequate roads, and parking and open spaces. This has been largely the result of rent control and restrictive FSI and density regulations. Out of a total backlog of 5.9 million dwelling units, 1.2 million (over 20 per cent) is in such old buildings. This shows the importance of conservation of existing stock. In its Interim Report, the Commission has already recommended certain rent control reforms which would provide incentives for building repairs and upkeep.

11.7.13 In Bombay, the state has made a major intervention in this area. In 1969, the state accepted responsibility for structural repairs and reconstruction of over 1900 rent-controlled tenanted buildings. This is being actively financed from the proceeds of a cess levied on all buildings and a subvention from state and local government. However, the state's efforts have not proved adequate and legislative changes for transfer of tenure to tenants' cooperatives have been enacted - but this innovation is too new to evaluate.

11.7.14 Despite widespread obsolescence and dilapidation in the housing sector in inner-cities, property prices there continue to be high. This needs to be seen as an opportunity. But it is important to see that this does not lead to poor sections being pushed out. For them, the location of their houses is most important for ensuring access to their jobs. The following appear to be promising ways to ensure that they are able to hold their ground:

(a) Finances for repairs must be specifically provided.
(b) Incentives must be provided in the form of transfer of development rights (TDR) for rehabilitation of existing tenants.
(c) A disincentive against neglecting repairs and maintenance must be provided by stipulating that, on the collapse of a building, the land will vest with the authority and the only compensation will be by way of transferable development rights (not weighted by the prices where they have originated).

11.8 *Recommendations*

11.8.1 The shelter problem comprise,
(a) how to increase shelter supply
(b) how to improve and upgrade slums, and
(c) how to conserve existing housing stock
The solution however need not follow a welfare approach. As already demonstrated, housing and infrastructure investments are productive, they are investments in an asset that yields a flow of services over time and they should be evaluated like any other productive investment.

11.8.2 To deal with shelter of the millions, with the limited resources at our disposal, it is necessary to depart significantly from existing practices, bring about a notable change in perspective and values. These changes include:
(a) a new understanding of the problem (not an insurmountable obstacle but a manageable challenge).
(b) a major shift in attitudes towards people (not an idle burden, but a productive resource);
(c) a new interpretation of an approach to peoples' self-generated housing stock (even if deficient, it is an approach to a solution, not a problem; not to be demolished but to be conserved and improved);
(d) a new definition of a house (not necessarily a pucca or permanent status symbol but one that shelters adequately);
(e) a new definition of the housing task (not necessarily permanent buildings but liveable, adequate environment);
(f) a new thrust (not a few finished houses but a massive supply of serviced land);
(g) a new role for the traditional housing agencies (not controllers but facilitators, not providers but promoters);
(h) a new relationship between the agencies and the housing clients (not givers and receivers but partners);

(i) a new economics (not charity but investment);
(j) a new definition of scale (not tokenism but total coverage); and
(k) for some, a new vision (not houses alone but overall development).

11.8.3 The objectives of urban land policy should be :

(a) To achieve an optimum social use of urban land.
(b) To make land available in adequate quantity at the right time and for reasonable prices to both public authorities and individuals.
(c) To encourage cooperative community effort and bonafide individual builders in the field of land development, housing and construction.
(d) To prevent concentration of land ownership in a few private hands and specially to safeguard the interest of the poor and underprivileged section of the society.
(e) To use land as resource for financing urban development by recouping the unearned income which otherwise accrues to private landowners.
(f) To encourage the socially and economically efficient allocation of urban land such that land development is done in a resource-conserving manner and that the magnitude of land used is optimal.
(g) To promote flexibility in land-use in response to changes resulting from a growing city.

11.8.4 Apart from the effective state intervention which is imperative in urban land market, land readjustment appears to be a promising way of achieving these objectives. In a typical land readjustment scheme land assembly and development is guided by a public agency. Land readjustment is based on the fact that land values increase significantly after provision of urban infrastructure. The increase is of such magnitude that a small proportion of land is sold, the remaining land can command an attractive rate of return over the original land value to the landowners even after foregoing land for infrastructure and for sale by the developing agency. It would also be possible for public agencies to retain some percentage of developed land for low-income shelter.

11.8.5 In order to establish wide based housing finance network it is recommended:

(a) to promote new housing finance institutions at the regional/state level;
(b) to promote new institutions at base level by identifying viable, reliable groups, providing seed capital to them as also professional expertise and support in the initial years;
(c) to formulate policies relating to mobilisation of resources and extension of credit for housing, including creation of new instruments of savings linked to housing;
(d) to regulate the working of the housing finance institutions at the base level (both regional and local) and coordinate their activities, as also those of other agencies in the housing field;
(e) to identify the impediments - legal, fiscal, physical, environmental and technical - to the active involvement of the household sector in deploying its savings in housing and to promote measures by way of changes in the law, enactment of new legislation, simplification of procedures, etc., to remove them;
(f) to mobilise resources for housing;
(g) to extend financial support to housing-finance intermediaries such as HUDCO, HDFC, State/regional level housing finance institutions including apex cooperative housing finance societies and local level organisations.

11.8.6 (a) Institutional finance should be made available for manufacturing building materials especially at the district, sub-division and block level.

(b) Building materials centres should be promoted by giving incentives in terms of cheap land and other physical and fiscal incentives to private entrepreneurs with a corresponding chain of building retailing centres to effectively distribute these products to the ultimate users.
(c) In order to set an example and promote the use of these building materials, they should be included in the Schedule of Items of Work of Housing Agencies and PWDs who should use them. A percentage of these materials should be used by public sector agencies in their construction activities, keeping in view the fact that public agencies should be active users of low-cost building materials.
(d) When considering alternative materials and technologies, the highest priority should be given to cost-reduction and applications in the informal housing supply, which caters to the majority of

low-income households.
(e) While the rational use of building materials is important, it is equally important to consider such design and sociological aspects as the way of life of the users, the distribution of space and the appropriate utilisation of building materials.
(f) Emphasis should be placed on improving existing methods of production of building materials. Programmes of on-the-job training with regard to specified production, technological and management skills should be implemented.
(g) Information about minor deposits of raw materials, including agricultural and industrial residues, should be collected and analysed and such information should be made easily accessible to small-scale entrepreneurs.
(h) It would be appropriate to develop standards to facilitate use of traditional materials and practices. As far as possible, women should be actively involved in the formulation of standards that are directly concerned with areas which effect their lives and needs.
(i) To secure optimum and judicious utilisation of land, keeping in view local conditions and, in particular, the housing needs of the poor, low and middle income groups, planning and building regulations will have to be formulated to promote low-rise, high-density development.
(j) Local planning and building codes must be simplified and rationalised in order to facilitate imaginative designs, low-cost housing and an acceptable level of environment, keeping in view the requirements of economically weaker sections and low-income groups.

11.8.7 In any given time span, there will be individuals and households who are either not interested in owning a house or just cannot afford it. For such groups, rental housing is the answer. In 1981, 56.8 per cent of urban households lived in rental accommodation. Land policy that aims at wide-spread land ownership should then lead to land owners giving one or two rooms on rent. Such investment should also be financed by the National Housing Bank and its subsidiaries. Such rental units would also help income augmentation of low income households. The Commission has already made detailed recommendation regarding rent control reforms in its interim report. These, when adopted, will go a long way in providing impetus to new rental housing.

11.8.8 A radical change in the orientation of public housing agencies is called for if they are to serve the need of low-income people better. Housing is considered by many as an entry point to a comprehensive programme for development of people. While it may be too much to expect housing boards to become vehicles of social development overnight, a happy via media could be achieved if housing is regarded by these organisations as a component of an integrated programme of services which must include health, education, recreation and sports, mother and child care and support for income earning activities.

11.8.9 The staff-structure of existing housing authorities is also designed to support the bricks and mortar approach. Consequently, the organisations are dominated by civil engineers drawn on deputation from the PWDs. The organisation structure will have to be balanced to effectively pursue the thrust of the policy outlined above. In that context, every housing authority may have a Director, Land and Planning, a Director, Community Development, a Director, Finance and a Director, Engineering - all of equal status - to advise the Chief Executive or the Management Director.

11.8.10 With the need to optimise the use of scarce resources, land, building materials, and finance, the cooperative housing sector would have to play an increasingly large role in house construction. The following strategies are therefore recommended:
(a) For low and middle-income groups, the cooperative housing sector should be provided developed land and access to credit.
(b) The role of the cooperative sector in house construction must be enlarged to reach different income categories of population, including poor households.
(c) Policies should promote cooperative housing constructions and should help supplement public sector individual self help approaches.

11.8.11 Women's access to shelter, essential services and community facilities should be given greater priority. Priority should be given to housing schemes for single and destitute women and migrant women labour. To supplement this,

it is essential that community organisations are encouraged to develop women's cooperatives. Training programmes for upgrading the skills of women and youth designed to improve shelter and services, and also to impart income and employment generating training in low-cost consumer products of daily use, to increase their affordability, should be considered.

11.8.12 Though the potential of sites and services projects for providing affordable shelter to the weaker sections is being recognised, its potential in a wider sense, as an effective way of increasing affordable supply of serviced land to the entire cross-section of the society needs to be recognised. Many cities are planning such projects. What is even more important are opportunities (in terms of locational decisions and job creation activities), (b) arrangements for home improvement loans, (c) an area development (rather than a site development) approach, with adequate emphasis on off-site infrastructure, and (d) involvement of voluntary agencies to organise people to sustain the development process. In case of containing migration and massive backlogs, it is also necessary to step-up the size of the projects and the speed of land development and allotment. Sites and services programmes would serve as a preventive strategy only if it produces a large number of serviced plots for potential home-owners. The approach needs to be extended beyond the confines of public scheme by extending the space and engineering standards to privately developed schemes.

11.8.13 Improving living conditions in existing slums is the main thrust of the curative strategy. In situ improvement of slums is now an accepted approach and is being tried out in many cities with a varying degree of success. What is needed, however, are:

- more projects and wider coverage, particularly for slum on central government lands and private lands,
- speed,
- quality in planning and implementation,
- additional resources, and
- proper organisational arrangements to ensure resident participation. Resident participation, besides facilitating the improvement process, would also provide a basis for organising people for post-improvement maintenance of installed services and post recovery. Lack of participation, poor maintenance of services, unsatisfactory cost recovery, performance are some of the main deficiencies of the on-going improvement programme.

An important aspect of improving living conditions in slums, besides providing basic environmental services and civic amenities, is to eliminate the fear of eviction. This can be done by providing a secure land tenure (patta) for the residents. This basic security would motivate them to invest their resources and energy in improving their shelter and environment.

11.8.14 Providing secure land tenure is only the first, though critical, step in initiating the improvement process. Creating access to institutional resources for home improvement loans should become an integral part of the slum improvement schemes. To do this effectively, proper institutional arrangements are needed which can provide small loans in a less bureaucratic fashion and can organise recovery arrangements at a lower cost. Creating such agencies is an important design task.

11.8.15 To ensure participation and mobilise people's resources, it is necessary to involve UCD-type of organisation, along with engineering departments, in the improvement schemes.

Expansion of the UCD scheme to all major cities is important not only for slum improvement schemes but also for dealing with the entire issue of the urban poverty. UCD is an important institutional innovation in the context of tackling some of the senstive issues related to the urban poor. Monitoring its working, studying its performance, improving its design where needed, and extending it to other urban centres is an import step in the direction of evolving an appropriate institutional base.

11.8.16 The slum improvement strategy should not rule out completely a selective relocation approach, either to decongest high congested localities or even to vacate strategically located encroached lands required for public purposes.

This, however, should be done only in selected cases and should be done judiciously.

11.8.17 The following appear to be promising ways to consume existing housing stock in inner city areas:

(a) Finance for repairs must be specifically provided.

(b) Incentives must be provided in the form of transfer of development rights (TDR) for rehabilitation of existing tenants.

(c) A disincentive against neglect must be provided by stipulating that, on the collapse of a building, the land will vest with the authority and the only compensation will be by way of transferable development rights (not weighted by the price where they have originated).

ANNEX 1. DISTRIBUTION OF HOUSEHOLDS, AVERAGE HOUSEHOLD INCOME AND WEALTH BY INCOME CLASS-URBAN INDIA, 1975-76

Average Annual Income of the Household	Percentage Household	Average Income Rupees	Percentage Share in Total	Average Wealth Rupees	Percentage Share in Wealth	Gross Saving Rs Lakh	Percentage Share in Gross Saving
Below 1,200	1.34	874	0.2	4,115	0.44	20	0.06
1,200 - 2,400	11.55	1,864	3.0	1,732	1.60	1,006	0.30
2,401 - 3,600	18.08	2,959	7.0	2,846	4.13	4,605	1.38
3,601 - 4,800	16.28	4,113	9.5	5,301	6.93	10,735	3.21
4,801 - 6,000		5,337	10.4	5,874	6.50	18,017	5.39
6,001 - 7,500		6,752	9.7	11,116	9.04	21,096	6.31
7,501 - 10,000		8,512	13.5	11,416	10.30	36,308	10.87
10,000 - 15,000		12,014	14.6	29,163	20.18	52,499	15.71
15,001 - 20,000		17,232	10.2	32,831	11.08	49,938	14.94
20,001 - 25,000		22,453	6.6	47,197	7.97	38,048	11.39
25,001 - 30,000		27,137	4.7	83,213	8.16	27,947	8.36
30,001 - 40,000	0.91						
40,001 - 60,000	0.37	47,441	10.0	113,461	27.32	73,929	22.12
60,001 and above	0.22						

REVIEW ARTICLE*

DOMINANCE AND STATE POWER IN MODERN INDIA

N.V. Sovani

Would you be surprised if you were told that the recent decision of the V. P. Singh Government about the full implementation of the Mandal Commission Report regarding reservation of seats in legislature and administration for backward communities was not a political gimmick (though it may have been conceived as such!) but the ultimate culmination of the political process that originated with British rule in India and that has continued through the nationalist struggle and beyond independence to the present day? If you are, you can read these volumes with profit and get rid of your surprise. If you are not surprised, however, you can match your reasons against the reasons elaborately argued in these volumes.

Studies of political development in India seem to have embraced two rival models of modernization; one based on Max Weber's sociology emphasizing the importance of ideas and ideals in shaping social relations, the second rooted in Marxist notions of historical materialism. Both these provide incomplete conceptual frameworks for analysing the historical process of change in India. Neither of them incorporates the most important feature of the Indian social setting: the interpenetration of religious-ideological and politico-economic structures. The framework adopted in this study treats caste, class, and ethnicity as process and social formation and examines their linkages with state level power to explain changing patterns of dominance. It tries to move towards an empirical theory of the relationship between introduction of social change *in* society and the transformation *of* that society. Experience suggests that the two processes are not the same. The study concentrates on changes introduced into society by the modern state. The study consists of extensive and detailed studies of most of the regions in India and an overall view of the whole process for India as a whole. A good deal of scholarship has gone into the regional and the overall study and the effort is welcome and commendable. To do it justice a fairly long summary of the thesis developed in these pages and, as much as possible in the words of the editors themselves, is given below, before indicating briefly some criticisms.

Indian society before the British conquest was not a uniform static hierarchical order of Brahmanical religiosity. There were significant regional variations in pattern of social stratification as well as protest movements against Brahmanical orthodoxy such as the Lingayat in South India; the *Varkari* movement in Maharashtra, Vaisnavism in Orissa and Bengal and in conversions to more egalitarian religions of Islam and Sikhism. Their impact was not great and was limited by the caste structure of village society incorporating the duality of ritual status and class positions in the organization of production relations which helped to ensure that the conditions of individuals continued to be determined by their caste group.

Even so there were opportunities for social mobility. The temple honour system in South India was one such in which presiding hereditary Brahman priests accommodated rising Shudra groups with military exploits or commercial success by calibrating the changing donative and redistributive transactions between worshippers and the deity. The Rajput type militaristic ethos facilitated the partnership of princes and wealthy Vaishyas and Jains and opening opportunities for peasant soldiers to claim warrior status. The most striking examples were the absorption of *Kunbis* into the ranks of *Marathas* in Maharashtra, *Chasas* into the category of *Khandayats* in Orissa, and the transformation of the entire Sikh community into a marshall class.

These channels of social mobility narrowed down with the establishment of British rule. Though they encountered regional variations, the British administrators adopted the distorted notion of a Universal Hindu culture which was Brahmanical in content and which reified the *Varna* order as the ideal type of social structure across the regions. This led to Brahmanization of Anglo-Indian law upholding the upper class privileges even in areas like South India. The Rajput type of ethos disappeared with the establishment of British rule.

But inadvertently the British changed the

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internal dynamics of social dominance relations. First by the "land" revenue settlements. In the Zamindaries of Bihar, Oudh, inland Orissa and parts of Madras the dominance of status-oriented upper class landholding families over the cultivating peasantry was greatly enhanced by their acquisition of individual property rights upheld under British law and enforced by state power. By contrast in the Western doab of U.P. many traditional Muslim and some Rajput Zamindars were replaced by Brahmans, Khatries and Banias. The situation was different still in most parts of Bengal, Coastal Orissa and Tribal Middle India where a large share of landed property was settled on Brahmans, Bania and other urban upper castes who became the new class of absentee landlords.

The impact of *Rayatwari* was also mixed. In Tamil and Telugu districts of Madras, mainland Gujarat, and Marathi-speaking regions local chieftains were forced to disband troops and the colonial state made direct settlements with the peasants. In regions as distinct as Tamilnadu, Eastern U.P. and Tribal Middle India, the introduction of private rights in property swept away the remnants of co-parcernary land tenures and in Tamilnadu the allied notions of entitlement to share in mercantile enterprises and artisanal production.

The British Raj was a new political order. The great zamindars and the cultivating ryots who became responsible for payment of land revenue derived their politico-economic status not from the superior ritual status but from legal rights conferred by the secular state. These new linkages between dominance and state power, which coexisted with the traditional relations between dominance and social rank, created an opening for questioning the religious basis of the established social order.

Although the British may have intended to act within the indigenous culture, the very fact that they interjected the power of the state into India's religious society and made it the proximate source of local dominance, helped to undermine the sacred ideology that sustained the legitimacy of religious hierarchy. On top of this the British rulers added all the changes associated with colonial rule - merit - based recruitment to schools, administrative services and modern professions, missionary critique of Hinduism, urbanization, unprecedented opportunities for for trading, etc. These taken together offered possibilities of detaching dominance from caste status in ways that amounted to an entirely new phenomenon in Indian society.

In the South and Western India educated Shudras and Untouchables who rejected the *Varna* system of group identification in favour of secular categories defined by social inequalities and occupation, such as Forward and Backward Classes, perceived the advent of British state as a historical opportunity to break out of the disabilities imposed upon them by the Brahmanical order. The British, who positively responded to the request for reservations in educational institutions and government services by leaders of these groups, did not orchestrate the politicization of caste cleavages as part of their divide and rule policy. Rather they took advantage of the opportunity presented to them for retaining the loyalty of the small educated sections of backward communities the vast majority of whom were hardly politicised.

Separate electorates to the Muslims were conceded because it was feared that otherwise the younger Muslims might join hands with the Hindus in the Indian National Congress. Giving separate electorates to Sikhs in the Montague-Chelmsford Reforms was the most calculated decision of the British government. That and the reorganization of the S.G.P.C. and temple reform. Until 1940 no popular constituencies emerged either in Bengal (Krishak Proja Party) and Punjab (Unionist Party) for territorial divisions on religious lines.

If too much has been made of British policies of divide and rule in explaining the politicization of religion, caste and ethnic identities, too little attention has been paid to the role of the Congress party and its national leadership in manipulating these divisions to undermine an incipient peasant mobilization around social and economic issues which cut across regional, religious, tribal and caste cleavages. Congress leadership, under Gandhi's leadership, actively resisted tendencies of anti-Brhmanism and peasant protest set in motion under the Raj, both of which contained potentialities for cooperation of low status groups in a secular community of the down-trodden. Two such potentialities were the attack on Brahmanism and peasant movements against Zamindars in the 1930s in the form of the *Kisan Sabhas*.

The most radical attacks on Brahmanism were launched in regions outside the Aryan heartland (U.P., Bihar, H.P.) where the *Varna* structure was least fully developed. Phule produced a critique of Brahmanism that had an important pro-British dimension shared by many of his contemporaries. Dr. Ambedkar followed in Phule's tradition, asking for separate electorates for untouchables in 1918-19. He gained this in the Round Table Conference (1932-34). Gandhi's fast forced Ambedkar to yield on the issue of separate electorates. Though the depressed received higher quotas of reservation of seats in legislatures the absence of separate electorates blocked any attempt by (Scheduled Castes) Untouchables to act as a distinct community outside Hinduism. Gandhi's victory showed the way towards a strategy of making minimum concessions necessary for diffusing a direct attack on the privileged castes and classes while depriving the unprivileged of their most militant and effective leaders. This extended beyond Independence.

A somewhat different dynamic was at work in Madras where the Justice Party was formed in 1916 and Naiker's party a little later. Elites among the *Satvic* groups like Vellalas demoted to mere "Shudras" provided the leadership for the non-Brahman movement. The Madras Provincial Backward Class League (1934) made the first distinction between 'forward' non-Brahman communities who had received the lion's share of benefits from reservations, and the strata above the untouchables who needed separate preferential treatment. In 1944 the League presented a list to the Madras Government identifying more than 50 per cent of the Presidency's population as members of the backward communities among the non-Brahmans and in 1947 the Madras Government provided separate reservation for 'Backward Hindus'. This was the first recognition by the state of a new social category spanning congeries of low caste *Shudras* that had no counterpart in the *Varna* order, but had asserted a separate identity for purposes of political action.

The anti-Brahman intellectual ferment in areas outside the northern Aryan heartland found little echo in the rhetoric of the nationalist movement. Gandhi's enduring belief in the 'law of the *Varna*' as divinely ordained became the basis of his alternative vision of civil society on the basis of the purified Hinduism. This formulation was received with enthusiasm in Northern Aryan heartland (U.P., Bihar, Coastal Orissa), Mainland Gujarat and Brahmans in Bombay city, Madras and coastal towns of Andhra. To the non-Brahman leadership in Bombay and Madras this was unacceptable. Bengalis also found it difficult to relate to Gandhi's leadership which they identified with Hindi India.

In Tamilnadu and Marathi speaking regions, the more conservative non-Brahman leadership, whose aspirations were satisfied by an anti-Brahman Brahmanism entered the Congress out of political expediency and with the enlarged suffrage in 1935 by sheer strength of members overwhelmed the Congress Party's *Brahman* leadership. The more radical reformers cut themselves off from the national movement and therefore from one another.

The leaders of the national movement, led by Gandhi, relied on rich peasants as intermediaries in the rural areas and professionals and trading community in the towns and cities to reach down to the poorest classes through the groups into which they were socially divided. They used the formula of loyalty to Gandhi as the representative in his own person of the down-trodden in all communities and the Congress party as their only secular representative of the whole nation. There is a great deal of evidence that the leadership of the Indian National Congress made every effort to ensure that the potentiality favourable to solidify among the disadvantaged would be contained rather than enlarged. This can also been seen in the strategy adopted by Gandhi and the High Command to undercut efforts by the *Kisan Sabhas* to link up the peasantry across divisions of region, religion and caste, and to limit economic conflict by localizing agrarian movements.

The developments after Independence are of the same piece. British Raj as a state was classic-sovereignty over a recognized territory, centralised public institutions and monopoly of power over the use of force. The officials of the all-India services were inculcated with a sense of public domain that transcended particular social groups. Indian bureaucrats were drawn from predominantly Brahman and other small literate elites recruited across regions. After the passing of the British Raj they became the backbone of the national class committed to modernizing India as an industrial nation. The all-India services were

the major institutional legacy of the Raj. Such public institutions laid the foundation for the successor bureaucratic and managerial state whose functions, powers and personnel grew exponentially once India embarked upon its strategy of planned economic development.

But there is a distinction between public institutions of the Indian state and the political institutions of parliamentary democracy and division of powers that were fully elaborated in the new Constitution (1950). The analytical advantage is in answering such questions as the basis of political legitimacy, the dual foci of sovereignty invoked in the separation of powers between the union and the states and the autonomy of the Indian state from the important social groups contending for control over the decision-making process.

After Independence Indian politics became an amalgam of often overlapping struggles. At different times, these included the competition within the state between the bureaucracy and the legislative and party institutions for primacy in the policy making process; the conflict between the educated upper caste bureaucrats of the all India services socialized in the ideal of the state as a public domain and politicians increasingly drawn from aspiring lower castes of rural background who sought access to the offices of the state as a means of social mobility and economic gain; and the clash between central and state elites on the proper balance between the domain of the centre and that of the states.

While the bureaucratic managerial state attempted to diffuse economic conflict by intervening in the market it was not equally successful in dissipating the social dimension of confrontation. On the contrary, aspiring low status groups steadily increased their power over the political institutions, at the same time as they mounted an effort to raise their representation in the administrative services in states and in the I.A.S.

The political institutions of the Indian State were initially a gift to the masses of an elite political class of predominantly Hindu men of the twice-born *Varnas* heavily weighed towards urban, English-educated Brahmans who shared a secular outlook. It provided to the weaker sections of the population in the principle of one man one vote, their single greatest gain from independence.

The new political institutions had to be constituted in a form that presented little immediate danger to the socio-cultural foundations of dominance so that it could be acceptable to the entrenched elites across diverse regions. This was accomplished in two main ways: first legislative institutions were embedded within a division of Union and States subjects that reserved powers for States on most matters affecting the governance of the vast rural population, including agriculture, land tenures and local government; and second, parliamentary government was conjoined to guaranteed fundamental rights, originally including property. The poor were encouraged to look less to an individual but more to the State for improvement of their condition. The Constitution, the Parliament and the Congress Party all made symbolic commitments to provide for the educational, social and economic advance of the poorest sections under the socialist pattern of society.

Politics in the Nehru period as a whole is best understood as a continuum of the Raj. Whatever social configurations the Congress Party confronted at the various states, its leaders, like the British before them, did not attempt to change the social order but to adapt it.

The strategies adopted to divert the emergence of solidarity among the disadvantages were the same old ones. The basic principle of these strategies rested on providing the minimum concessions necessary to avert social polarization, and on co-opting the most militant leaders of the underprivileged, thereby detaching the potentially powerful adversaries from their social base. One of the major instruments of accommodation and co-option were reservation policies used to mobilize support on the basis of political categories having their origin during the Raj. Reservation institutionalized social divisions among the poor, and encouraged competition of disadvantaged groups against one another for privileges from the ruling party thereby establishing a pattern of vertical relationships between the various sections of the underprivileged and dominant social groups.

The second major instrument of accommodation and co-option in undercutting solidarity among cultivating peasantry was the implementation of Zamindari abolition. In U.P.

Charan Singh designed legislation to proliferate the number of rich and middle land owning peasants as a barrier against class-war ideology. This purpose is also discernible in the major provisions of the Zamindari abolition acts in several other States.

The land reforms helped the process of proletarisation between landlords and tenants while establishing across regions a class of rich and middle peasants who accounted for the major part of the cultivated area but were present in large numbers only in a few States. Capitalist development in agriculture did not lead to sharply antagonistic class interests. Rather interests tended to coincide on such issues as subsidies for inputs, higher procurement prices and debt relief.

Growing economic differentiation reinforced caste solidarity by increasing the salience of the materiality of the caste. The emphasis on caste consciousness and cast unity allowed the richer classes to appeal to the actual or fictile caste sentiments of "we-ness" against members of other castes and to reinforce such feelings by providing material and social support to caste men during times of strain. Caste organizations were also used for political action, especially to lobby state governments to include the caste as a backward community eligible for reservations. At the same time, growing emphasis on the identity of the Backward Classes reinforced a sense of separation from the Scheduled Castes.

This helps to explain why despite growing economic differentiation region, religion, caste-cluster or tribal group remained the primary identity through which economic discontent was articulated. Congress chose to utilize these divisions as an in-built brake on the emergence of radical movements as their predecessors did.

But the rise of the backward classes could not be stemmed. The very first amendment of the constitution passed in 1951 allowed the States to 'make special provision for the advancement of any socially and educationally backward classes of citizens'. The potential repercussions of this enabling provision for separating dominance from power in the political and public institutions of the State was recognized in the President's Backward Classes Commission Report in 1955. The report repeatedly asserted the crux of this argument that "our society was not built essentially on an economic structure but on the medieval ideas of Varna, caste and social heirarchy". The report recommended sweeping reservations for other backward classes in all Central and State Government services from 25 to 40 per cent and quotas of 70 per cent for qualified candidates in admissions to all scientific and technological institutes offering training in sciences, engineering and medicine. The dissenting Chairman interpreted the majority demand for caste criteria of backwardness as evidence of the intention of the 'dominants' among the backward to 'wage politics of confrontation with the upper castes and remove them from power'. He accused the leaders of the backwards of wanting to drive a wedge between the upper classes and the lower classes, so that the 'advanced communities are not allowed the right to speak for, or represent the backward communities' [Vol. I, 1955, p. xxv].

Universal suffrage created the opportunity for more educated members of the backward communities to take up the cause of reservations as an ideological rallying point for political mobilization of the large layers of *Shudra* castes (middle or intermediate) that formed the bulk of the *Kisans* and lower middle classes. Their independent entry into politics from the 1967 elections ruptured the Congress system of elite accommodation. There is a broad pattern from then to 1990 across regions of the growing power of Backward Classes relative to the upper castes in elected bodies. This rested on appeals to caste sentiments among cognate groups. The divisiveness of this approach was least serious in the States of South India where the forward castes themselves had emerged from the landowning Shudra peasantry and where backward Hindus demanded a share in the privileges of the dominant groups without seeking to replace them.

On the whole in South India reservations for backward classes combined with high expenditure on social welfare programmes sustained the policies of accommodation by enabling some small proportions of the disadvantaged castes to join in the urban middle classes and find places in the political and public institutions of the State. By contrast in other regions rigidly structured around *Varna* divisions, produced violent confrontations between backward and forward castes that made institutions of State arenas of conflict

and rendered them ineffective in defusing caste and class confrontation. In Bihar and U.P. the struggle was waged between more evenly balanced numbers, across *Varna* lines of *Shudra* and twice-born, and for the purpose of replacing upper castes as political leaders in the State legislatures, and, through reservations, diluting their virtual monopoly over senior posts in the State services.

The Janata Dal victory in 1989 indicated the further disintegration in North India of long established patterns of vertical mobilization and placed in relief the outline for a new basis of horizontal cooperation of the disadvantaged social groups. As India entered the 1990s, a discernible separation between economic power and political power was taking shape.

The decline of the homogeneous elites rooted in status hierarchies erected upon devalued notions of purity and pollution, is likely to place greater importance on access to huge resources of the managerial state as a basis of rank and privilege in society. The battle for ascendence between the city and the country-side, industry and agriculture, bureaucrats and politicians, the urban middle class and peasantry, landowners and agricultural labourers, industrialists and workers, forward castes and backward classes, and even advocates of Hindu State and those of a secular State, are all aspects of the social turmoil accompanying the collapse of the Brahmanical system as a source of legitimacy for the unequal social order.

Am I persuaded by this thesis? I would say "Almost, but not quite!". Many nagging doubts remain unresolved. The thesis is well reasoned, well documented and almost spellbinding in its sweep of argumentation. But once the spell is broken a more sober view of the whole emerges. Historians often succeed in spinning out a beautiful logical sequence of historical happenings by getting hold of a strand from among the many that usually weave the ever unwinding carpet of human history with its intricate and changing designs. This is possible because by following an important strand from among many, as the prime mover that determines the resulting designs, a fairly persuasive historical account can usually be built up. But how accurately does it reflect the inwardness of passing events remains a daunting question. The trouble with prime mover accounts is that the more it is emphasized the more it looks and feels like an underlying dialectical theory of history (like Hegel's Idea) the absence of which is claimed to be one of the chief merits of this study (p. 17, Vol. I). From the sequence spelled out in this study of reservations for the backward castes it can be easily and fairly persuasively argued that the inexorable logic of free British institutions introduced into India with British Rule resulting in the 'one man one vote' system is what makes the moment move and might possibly do so elsewhere. That is, I am sure, far from the minds of scholars that have painstakingly put this study together. Another disturbing question is what does such an inexorable process spell for the future maintenance and functioning of democracy in India in the future?

Once one comes out of the overbearing sweep of the thesis many things fall into their place. It then looks like an important analytical performance, which is instructive and extremely useful in illuminating many a dark area. But that is not the only one. There are several others.

Even so it remains and strikes one as an important study which can be ignored by those in the field at their peril. It is particularly rich in its extensive and exploring regional studies which furnish the base of the overarching theme. In such an extensive study many holes of fact and/or argument can be found. But this is not the place to go into such a detailed exercise here nor is it necessary to do so because, they do not detract significantly from the merits of the study as a whole. Just to give an example from the study of Maharashtra, with which I am more familiar, one is surprised to read that Ranade was "a poor Chitpavan without a place in the traditional jati hierarchy" (p. 143, Vol. II) or that he was 'the son of a poor Brahman' (p. 150 Ibid). He was, from all available evidence, anything but that! But this is nit-picking and not of great moment. The study is a valuable piece of scholarship to be cherished.

REVIEW ARTICLE*

INDIAS MOST REVENUE - YIELDING TAX

Anand S. Nadkarni

As is well-known the union excise taxation is among the major sources of revenue, not merely to the Government of India which levies it but also to the whole government sector in the country. Thus in 1988-89 the excise revenue actually *collected* by the Central Government (in other words revenue gross of states' share) was 33.40 per cent of the total revenue receipts of the Centre (also gross of states' share in the divisible taxes) and 42.42 per cent of the total tax revenue *collected* by the Centre.[1] It is true that there has been a continuous decline in these proportions over the preceding two decades, the respective proportions in 1970-71 being 42. 93 per cent and 54.85 per cent with those in 1980-81 being 39.11 per cent and 49.32 per cent.[2] All the same, even in 1988-89 the union excise remained the most revenue - productive source among the taxes levied and collected by the Government of India. If we take all the commodity taxes collected by the total governmental sector in the country we find that among this group of taxes the union excise yielded the largest revenue to the governmental sector in 1988-89, its proceeds being 34. 41 per cent[3] of the total receipts from the country's commodity taxes.

This important tax has been covered extensively in a number of official reports. It is true that the tax has also been analysed in a few non-official studies, some of them dealing with the whole system of taxation and the others with only commodity taxation in the country [Cutt, 1969; Lakdawala and Nambiar, 1972; Mahler, 1970]. However, the wider focus of enquiry in these studies naturally placed some limitation on their capacity to analyse just one tax such as union excise in an elaborate fashion. What is more, all the studies cited were brought out in the early 1970s. Under there circumstances the book under review, being an "attempt to analyse the excise structure independently and in a book form for the interested reader" bringing also the information uptodate, seeks "to fill (a) vacuum" (p. vi). truly felt.

Excise: A Preliminary Overview

Sury's book is essentially an exercise in exposition. It deals with the subject-matter fairly comprehensively, the authenticity of the treatment being enhanced by copious references to official reports on the subject over the last four decades. Furthermore, there is a certain logical flow in the presentation marked by a degree of lucidity which makes the book eminently readable.

The first chapter, 'Economics of Excise Taxation', provides a veritable backdrop to the exposition that is to follow in the succeeding chapters. The chapter "examines the various theoretical issues involved in designing a suitable excise system" (p. 1). It contrasts excise against other major commodity taxes, viz., customs and sales tax, and in the course of analysis deals briefly in a general way with a few relevant problems such as those of input taxation (followed appropriately by an exposition of the value added taxation or VAT), excise rate-structure, equity and the requirements of a good excise system. An observation on the write-up by the author on the equity aspect of excise is in point here. He refers to the practice of selecting luxuries and comforts for higher rates of excise taxation in the interest of equity, and comments as follows: "However, practical considerations e.g. limited base of luxury items (i.e. limited demand) and their relatively elastic demand, make it necessary to tax commodities of mass consumption which have relatively inelastic demand" (p. 17). This is true, but the author is evidently referring to price elasticity of demand here. In a general, introductory summing up it would be relevant also to point out that these commodities have high income elasticity of demand as well and that this factor would tend to raise revenue from excise on

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* "*Excise Taxation In India - An Economic Analysis* - M.M. Sury, Commonwealth Publishers, New Delhi, 1988, Pp. 215, Price Rs 175/-.

these commodities more than proportionately as the economy develops.

Chapter 2, 'Excise Duties in India: An Introduction', elucidates some disparate aspects of the Indian excise system, these being the following: constitutional provisions; classification of union excise by types; Harmonised System Nomenclature of excise tariff; schemes of excise realisation; excise revenue growth, which, besides noting historical trends, also attempts to explain the increase of excise revenue over a period in terms of certain contributory proximate factors; and finally, the incidence of excise. Over the last forty years there has been a sharp increase in revenue from union excise; its proportion to total tax *collection* of the Government of India which was 16.8 per cent in 1950-51 rose to being 42.8 per cent in 1988-89 (B.E.) (table 2.2, Pp. 38-39). Evidently this increase could be attributed to three proximate factors: (a) the extension of excise taxation to more and more commodities from time to time, (b) the enhancement in excise rates, and (c) the step-up in the production of excisable goods. Table 2.3 in the book (p. 41) provides information on the relative contribution of the three factors in Central excise revenue growth, which is based upon the findings of three Government of India Committees, *viz.*, The Central Excise Reorganisation Committee for the period 1953-54 to 1961-62, the Central Excise (Self-Removal Procedure) Review Committee, the period covered being 1963-64 to 1970-71 and the Indirect Taxation Enquiry Committee, covering the period 1965-66 to 1975-76. The data bring out that the 'rate increase' has been by far the most important factor contributing to increase in excise revenue, though 'the growth in production of excisable commodities' has also made a significant contribution to the result. The author, however, concludes as follows: "With commodity coverage factor having reached the saturation point and tariff hikes becoming difficult, it follows as a corollary that further increases in excise revenue would depend mainly on increases in the production of excisable goods which, in turn, depend on development of the economy in general and industrialisation in particular" (p.42). For all that one knows, he may be right so far as the prospective trend in future is concerned, but it is indeed intriguing that whereas he finds it significant" that between 1965-66 (and) 1975-76, the contribution of increased production of the excisable goods in excise revenue growth was no less than 35.9 per cent" (p. 42) he makes no reference to the fact that the upward revision of excise rates accounted for as much as 52.4 per cent of the excise revenue increase in the same period. Then again, as noted above, there has been a reference to 'commodity coverage factor having reached the saturation point'. In this context it is interesting to note that in 1986-87 just 29 out of the 139 excisable commodities yielded nearly 76 per cent of the revenue from basic excise duties, whereas in the same year 21 commodities were so low-yielding as to bring a measly 0.08 per cent of the revenue from excise (table 2.4, Pp. 43-44 and table 2.5, p. 46). This probably suggests that the narrowing down of commodity coverage by exempting low-yielding items from excise taxation may turn out to be a fruitful policy. "Relieved of the burden to administer low revenue items, the administration can concentrate on controlling commodities of high revenue yield. If leakages are plugged at top levels of excise revenue, it may compensate the loss arising from deleting low revenue items from the excise list" (Pp. 46-47).

There have been some enquiries of the incidence of indirect taxes in India. In these enquiries incidence, computed with the help of N.S.S. data on consumer expenditure, is shown as the percentage of a tax paid to consumer expenditure of a group. The data thrown up by these enquiries uniformly suggest that in the case of union excise the incidence has increased significantly for every expenditure-group from top to bottom over the period covered, that it was greater in urban than in rural areas and, that, what is most significant, the incidence was consistently progressive in both the urban and the rural areas. This alleged progressivity of excise taxation - or, better still, indirect taxation - has been subject to some legitimate criticism. The basic point here is that the underestimation of the consumer expenditure of the higher income groups in NSS data result in an over-estimation of the incidence of the consumption taxes on these groups. Sury makes a mention of this underestimation but attributes it only to "inaccessibility of higher income group

people to the N.S.S. investigators" (p. 51) quoting Dandekar and Rath [Dandekar and Rath, p. 27]. Surprisingly, he misses the more important point made by Dandekar and Rath in this context, namely that the higher income groups are likely to spend proportionately more on consumer durables than the poorer sections and that these expenditures which are not made at a steady rate from month to month are likely to be missed out to some extent in a survey in which a respondent is asked about his expenditure during the previous month [Dandekar and Rath, p. 27]. In fact, there is an additional reason for this underestimation adduced by Toye, which is also relevant in the present context. The perquisites which form a part of the consumption basket of a highly - paid employee in the corporate sector would not be captured in NSS data resulting in underestimation of consumption in the higher income brackets [Toye, p. 473].

The Problem of Input Taxation

The remaining five chapters of the book analyse a number of major aspects of union excise taxation. In the course of this analysis Sury touches upon four important problems relating to union excise. These are: (i) the problem of input taxation (chapter 3); (ii) Differential advantage intended for small industries (chapter 4); (iii) the federal aspects of excise taxation (chapters 5 and 6); and (iv) buoyancy and elasticity of excise (chapter 7). For illustrative purposes, only the exposition under (i) and (iii) above would be examined here.

The drawbacks of input taxation are well-known; so are the difficulties of doing away with taxation of inputs altogether. These drawbacks and difficulties have been brought out concisely in different parts of this book (Pp. 11-13; Pp. 71-73). An important remedy suggested for overcoming the problem posed by input taxation is to adopt a system of value-added taxation in some form. The Long-Term Fiscal Policy statement of the Government of India issued in December 1985 outlined an approach in favour of a modified system of VAT, *viz.* MODVAT. The MODVAT became operational from March, 1986. From the point of view of the interested reader with limited background in the subject, the exposition in the book of MODVAT, its features, probable advantages and perceived limitations should prove useful. The author is right in pointing out, inter alia, that "VAT can be advantageous only if it replaces both the excise duties and sales tax, i.e., there is a single authority for commodity taxation" (p. 74). But this seems difficult to accomplish in view of the constitutional division of taxation powers between the Centre and the states. It is unlikely that the states would surrender their power to levy sales tax in the interest of a uniform system of commodity taxation, given particularly the fact that sales taxation has become the sheet-anchor of the state tax system. We encounter here the federal aspect of the proposal to reform excise taxation as a part of a basic change in the whole system of commodity taxation. There are, however, certain other federal aspects of excise taxation, to which we now turn.

Excise Taxation: Federal Aspects

Under Article 272 of the Constitution of India union excise figures as a tax which is "levied and collected by the Union and (which) may be distributed between the Union and the States". It is within the powers of the Parliament to decide whether the Centre should share the proceeds of this tax with the states. In fact, right since 1952 the states have been given a share in this tax on the basis of recommendations of the Finance Commissions. There are two issues here for consideration of a Finance Commission, one relating to the determination of the respective shares of the Centre, on the one hand and of the states taken as a group, on the other. The second is as regards the principals of division of all states' share among the individual states.

Initially, when the earlier Finance Commission included excise only on a limited number of commodities in the divisible pool, the states made a plea consistently in favour of extending the scope of the divisible pool to cover all excisable commodities. Later the Government of India started following the practice of levying in addition to basic excise, shareable with the states, other types of duties called 'special duties', 'regulatory duties', or 'auxiliary duties' for its own

exclusive use. The states naturally pleaded with the Finance Commissions that all union excises, howsoever designated, should be made a part of the divisible pool. Both these problems were eventually resolved to the satisfaction of the states as a result of the appropriate recommendations of Finance Commissions.

The major question relating to the first issue now is as regards the proportion of the divisible pool that should go to the states. It must be said, however, that by raising the share of the states in excise revenue from 20 per cent of the total under awards of preceding Finance Commissions to 40 per cent, the Seventh Finance Commission ensured that a sizeable amount of yield from this relatively buoyant central tax was made over to the states. The Eighth and the Ninth Finance Commissions raised the share further to 45 per cent. There is therefore hardly any contentious issue left with regard to the division between the centre and the states. The whole of this development has been brought out in adequate detail in the book under review. It is true, as Sury points out, that the pre-eminent position which excise has come to occupy in statutory transfer of resources to states, is not in keeping with what the framers of the Constitution had envisaged. The permissive sharing of excise proceeds provided for in the Constitution highlighted the fact that excise was looked upon only as a supplementary source of revenue to the states. "But the supplementary source has now become by far the largest source of revenue transfer" (p. 113). The author is right in saying that this change was unavoidable given the changes in the tax structure of the country which occurred as the economy developed.

Let us now turn to the principles of distribution of all states' share in excise among the individual states. In this respect a viewpoint which has gained ground over the years is that some degree of progressivity should be provided for in the scheme of transfer of resources to the states, meaning, in the specific case of excise, that economic backwardness criteria should be given sufficient weightage in the distribution scheme. Sury is, no doubt, right in saying that "rectifying regional imbalances must be recognised as a distinct objective of fiscal transfers in any federation". (p. 123). However, we must not lose sight of the fact that correction of vertical imbalance is as much a legitimate goal of federal financial arrangements as promoting regional equalisation. As Chelliah and Associates point out: "Both the objectives need to be stressed since economists in this country tend to consider the problem of resource transfer solely in terms of regional equalisation. There is no theoretical basis for the argument that the richer states, or the states as a whole, do not have a claim on central revenues. But for the economic advantages of centralisation, the states could have been vested with greater tax powers under the constitution and they could have raised more resources on their own. There is, therefore, justification in the argument that some part at least of the transfer of resources should be on the basis of 'what a State could have collected'" [Chelliah and Associates, 1981, Pp. 9-10].

One more observation on Sury's exposition of the subject may be made here. In the course of his exposition of the principles enunciated by Finance Commissions for the distribution of states' share in excise revenue he lists the criteria of backwardness used by the different Commissions, and concludes in the last para of chapter 5 that in the matter of rectifying regional imbalances "the Finance Commission in India, except the Seventh and Eighth have not (fared) well". One, however, misses even a brief *examination* of the backwardness criteria of the Seventh and the Eighth Finance Commissions whose work seems to have impressed him. For example, the poverty percentage criterion of the Seventh Finance Commission, which was obviously intended as a backwardness indicator, has been subjected to some legitimate criticism by several writers, including by Raj Krishna, a member of Commission in his note of dissent. It was pointed out that even some relatively better-off states having high poverty percentage could benefit from this criterion. Gulati and George came to the conclusion that "the inter-State distribution based on poverty ratio is not only not progressive enough but can be even regressive in that it yields a distribution whereby the lower the per capita domestic product of a

State, the lower its allocation can be compared to what it would be entitled to on the basis of its population" [Gulati and George, p. 62]. In view of such criticism it is not too much to expect that an author writing for the benefit of the general reader would analyse the backwardness criteria of the Seventh and the Eighth Finance Commission in somewhat greater depth so as to enable the reader to understand the issues in the proper perspective.

It must, however, be said at the end that the comments made above in different places, do not detract from the essential merit of this book. It remains an extremely useful introductory book on India's most revenue-productive tax.

FOOT NOTES

1. The proportions are estimated on the basis of data on actual receipts drawn from a Reserve Bank of India Bulletin. [R.B.I., 1990 Statement II, Pp. 612-613].

2. These proportions are estimated with the help of data on actual receipts in 1970-71 and 1980-81 taken from a C.M.I.E. publication. [C.M.I.E. 1990, Table 7.3].

3. The percentage was arrived at on the basis of data in the Reserve Bank of India Bulletin mentioned in footnote 1. [R.B.I., 1990 Statement II, Pp. 612-613 and Statement 4, p. 652].

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BOOK REVIEWS

Price Policy In Public Enterprises, by N.D. Mathur, National Publishing House, Jaipur, 1990, Pp. 188, Price Rs 200/-.

Pricing in public sector assumes a special importance because of the substantial investment therein as also because of the nature of its services and products, some of which meet a significant share of the country's requirement of basic industrial inputs.

Primarily, the pricing policy for public sector enterprises has to take into account the interests of various segments of the economy. In the author's words, "A rational pricing policy for the public enterprises is of significance to: (a) the undertaking which has its immediate interest in generating surpluses for its expansion and growth after covering all costs including depreciation, (b) the government, which as the main investor would expect a reasonable return on the paid up capital, (c) the consumer who would not like the monopolistic public enterprises to cover their inefficiency by charging higher prices, (d) the nation which desires the public enterprises to subserve social objectives, particularly in the production of goods and services which are basic to the life of the community" (p. 51).

In short, a rational policy for public enterprises should, on the one hand, generate surpluses for their own growth and towards financing of five year plans; and on the other, meet other objectives which mainly relate to achievement of Efficiency, Welfare, Full Employment, Equity, Growth and Stability. These are also the broad objectives of economic policy as such.

As mentioned by the author, some of these interests are conflicting, and some sort of a compromise has, therefore, to be struck between them by the policy makers who may be guided by considerations which may not all be economic in nature.

After pointing out the complexities involved in evolving a policy which will meet these objectives, the author goes on to review the literature on pricing policy, the principles behind it, and the various theories of pricing prevalent from time to time. Accordingly, the following are described at some length: Marginal cost pricing; Average cost pricing; Discriminatory pricing; Multi-part tariff; No profit, no loss pricing; Cost plus pricing; Below cost pricing; Profit earning pricing; Import parity pricing; Landed cost basis; International parity pricing; Administered pricing; Inter-enterprise pricing; Transfer pricing, Internationally-determined pricing, Dual pricing, etc.

In the theoretical discussion about their merits and demerits, the author points out that each of them has a relevance for a particular sector or unit; but equally, each one of them suffers from some defect which does not allow it to be applied indiscriminately. Also, what is suitable at a particular stage of the development of an industry or an undertaking, may not continue to be so at a later stage. The author then proceeds to consider which of these principles are applied to enterprises in India and how. He notes "that a uniform price policy for all public enterprises is not possible because they are varied in nature and serve different economic, social and political objectives" (p. 32). Accordingly, there is considerable variation in their pricing policies. For example, the selling price and distribution of products like fertilisers, drugs, coal and petroleum products are controlled or regulated by the government. With some variations, the same has been true of steel also. In some cases, such as airlines, the rates are subject to government approval. In the case of products facing competition in foreign markets, pricing is done on the basis of the prevailing international prices, e.g. in the case of Hindustan Shipyard. In all other cases, the price policies are largely formulated to cover the costs and to achieve some surpluses, the amount of surplus to be made being governed by the financial obligations of the respective enterprises (p. 53).

Coming to a discussion of Government policy, he mentions that in 1967, the Administrative Reforms Commission (ARC) suggested certain principles for pricing policies, main among which were the following: (a) Public enterprises in the industrial and manufacturing field should aim at earning surpluses to make a substantial contribution to capital development out of their earnings besides making a contribution to the exchequer. (b) Public enterprises should in any event pay their way and should not run into losses except in pursuance of express directions issued by the government in public interest. (c) In the case of public utilities and services, greater stress should be laid on output than on return on

investment, the former being extended upto a level at which marginal cost is equal to price. (d) While determining the price structure commensurate with the surpluses expected from them, public enterprises should keep the level of output as near the rated capacity as possible subject, of course, to the volume of demand for the product. Based on these recommendations, the Government of India issued suitable guidelines which by and large prescribed that the enterprises should earn a surplus on the basis of their efficiency. Specific guidelines were also issued prescribing a formula for products competing with international goods and for products produced under monopolistic conditions. Further guidelines in 1970 allowed some latitude to the units to operate within given margins. Government also stipulated that a dividend of at least 10 to 15 per cent for trading companies and 6 to 15 per cent for manufacturing concerns should be considered reasonable.

The enterprises are then broadly grouped according to the policy followed by them. These are: 1) Those following Transfer Pricing include Hindustan Aeronautics, Indian Telephone Industries, Hindustan Cables and others selling their entire production to the Government. 2) Those following Administered Pricing - Here both public and private companies operate within the same pricing policy which is based on cost plus principle. This group consists of units making steel, fertilisers, coal, drugs, oil and oil products. 3) Enterprises which follow Internationally Determined Pricing include Shipping Corporation of India, Air India, Hindustan Shipyard Ltd., State Trading Corporation, Minerals and Metals Trading Corporation etc. 4) The companies which, by the nature of their products, are required to follow the Market Determined Prices, comprise Indian Tourism Development Corporation, Modern Bakeries Ltd., Hindustan Machine Tools Ltd. etc. 5) Dual Pricing policy is followed in respect of products like steel, sugar and cement. In this category, there are two sets of prices - one in respect of quantities the distribution of which is controlled by the Government and the other in respect of the remaining quantity which is available for free sale. The author, therefore, feels that the policies are not only not uniform, they are not based on any definite commercial principle. And yet, from the guidelines issued by the government from time to time the expectation seems to be that irrespective of the price formula followed, there should be a surplus generated by the enterprises.

On the basis of his study, the author draws the following conclusions: (a) Diverse pricing practices are prevalent in the public enterprises in India. (b) The pricing policies have been evolved in a casual manner. (c) The policy of some enterprises is biased towards the government departments and bulk customers. (d) The policy of some enterprises is biased in favour of the region or locality where the productive operations are carried on. (e) In a few enterprises, the policy is in favour of their own employees. (f) Some enterprises are consciously following a policy of no profit no loss pricing. (g) Some enterprises have succeeded in enjoying their monopoly power and exploited the consumers. (h) Some enterprises have proved their competence in the competitive conditions and contributed surplus to the exchequer. (i) There has been no systematic effort to evolve and apply an appropriate pricing policy in conformity with socio-economic objectives of public enterprises (Pp. 78-79).

After examining the pricing systems followed by enterprises in general, the author goes on to describe the practices followed in 23 diverse groups of enterprises. He covers Indian Airlines, Air India, the Railways, the Road transport, Fertiliser Corporation of India, Indian Telephone Industries, Hindustan Machine Tools, State Trading Corporation, Modern Bakeries Ltd., Life Insurance Corporation of India, Oil and Natural Gas Commission, Coal India Ltd. and a host of others.

The author finds heavy losses in many of them. But having almost arrived at a conclusion that wrong pricing policies are at the bottom of poor performance of public enterprises, he dilutes it by observing: "In India the lack of an appropriate pricing policy is not the only reason of heavy losses or the low profitability. The other factors which affect the profitability of public enterprises in India are low capacity utilisation, high overhead cost and capital cost, old technology, higher input prices and uneconomical scale of output.

Hence, pricing policy is not the only factor which has to be taken care of but at the same time other causal factors have also to be identified cautiously" (p. 80).

The basic thrust of the argument in the book is that pricing should aim at generating some profits. "In a developing economy where propensity to save is very low, the profits from public enterprises will prove as propellers for industrialisation and speedy economic growth" (p. 82). Further, "Socialist industrialisation rests on the profitability of public enterprises. They provide a less cumbersome source of public finance, (and) at the same time they help making economic development as a self-financing process. Hence, the profit making pricing policy may be adopted as a general rule so that every corporation will have sufficient resources for its further development and expansion ...." (p. 81). The author, therefore, suggests that the public enterprises should be allowed to fix the prices of their products in such a way that they are able to earn adequate funds for their growth and expansion and do not have to depend upon the government. While fixing the prices of the products, the public sector managers should be free to operate on purely commercial lines like their counterparts in the private enterprises. However, the author warns that care should be taken that profit is not the result of exploitation. These points are well taken. Government does not allow public enterprises to fix their own prices and still expects them to earn a profit. In other cases, advantage is often taken of the monopoly position of the units in respect of which prices are administered by the Government. Monopoly, coupled with inelastic demand, makes it possible for managements of certain units to fix prices arbitrarily. This is particularly facilitated in the case of enterprises which are formed as companies, since they do not need to approach the Parliament for approval of price revisions. These, in effect, therefore, result in fixation of exploitative prices.

The specific recommendations which the author would like to make are as follows: (a) In the long run, public enterprises should follow the pricing policies which result in a reasonable surplus. (b) The government should take contribution from public enterprises on the basis of a two-part tariff policy - charging a definite amount at a flat rate from most of the enterprises and then asking them to make varied payments according to the level of their productivity. (c) In the case of State monopolies or public utilities like Railways, State Road Corporations, Post and Telegraph Department and State Electricity Boards, average cost pricing principle, accompanied with suitable cost reduction measures may be followed. (d) Public enterprise pricing should adequately provide for risks, uncertainties, self-financing and inflation. It may be noticed that the recommendation at (c) above is at variance with the recommendation of the ARC on the subject.

These issues have been examined with reference to a detailed case study of steel which has been selected because of its vital role and its forward and backward linkages in the economy. The account of pricing practices in steel industry traces the history of pricing of steel covering Statutory Price Control between 1939 and 1962, Informal Price Control during 1964 and 1973, Dual Pricing Policy between 1973 and 1978, role of Inter-Ministerial Committees on steel retention prices, etc. It also brings out the revisions of steel prices from time to time. The author brings out how because of government control, the profitability of the industry was adversely affected. And when prices were revised, there was often a time-lag in compensating the cost escalations. The author also explains the problems created by uniform prices for all steel producers. The technologies used, the working cultures, the investments, and production facilities are different in different units; and yet they are all treated on par for purposes of pricing. This is patently unfair and has affected their performance. A further weakness of the system is that steel prices have not, on occasions, been even equal to the cost of production. The author makes the point that in such cases the unsatisfactory performance of the steel plants is not the result of inefficiency as alleged. According to him, because of the manner in which prices are fixed, a plant like Bhilai, even with as high as 90 per cent capacity utilisation, would still have made losses. The fall-out of such a practice has been brought out by the author when he points out that in the early seventies, when the prices should have been raised, what was raised

was the excise duty. Further, according to him, to control the product price to an unrealistically low level without a cost study by an independent authority, to finance the current losses by way of loan when the excise duty was raised and other similar practices were undesirable. Simultaneously, and thereafter to designate the interest due on these loans as subsidy was not a sound procedure. The covert nature of the transaction also hides the extent of the real subsidy to the consumers. This shows that the government was consciously following a policy of cheap steel. The author points out that it was only after the informal control was lifted that the industry was able to charge realistic prices. Thus, between 1981 and 1986, prices of most categories of steel increased by more than 50 per cent and in one case, by even as much as 112 per cent. Of course, a part of the rise in prices was because the producers tried to make good the accumulated losses by exorbitant increases in prices, which also covered up their inefficiency. But the fact that higher prices could be charged means that even when the market was in a position to pay more, government kept the prices artificially low thereby depriving the steel enterprises of an opportunity of generating any surplus. "In fact, the present plight of the steel sector is attributable to the pricing policies adopted so far which were primarily designed to recover operational, maintenance and renovation costs, without reference to any norms of efficiency.... The pricing policy of steel at present is such that it does away with any need or consideration for minimising cost of production" (p. 154). Of course, as the author points out elsewhere, it is not just the prices, but other management problems which have also contributed to the continuous losses in the public sector steel plants.

Because of the peculiar structure of fixing prices, certain undesirable features showed themselves. For instance, inefficiency was paid for and bred a sense of complacency. Because of a mismatch between demand and supply, there were periods of scarcity followed by periods of gluts. But, as has been pointed out, even when there was glut, SAIL did not respond by cutting down prices, but by cutting production. The cumulative result of such a practice has been that Indian steel is not competitive in the international market.

The effects of the pricing policies on producers, on consumers, on allocation of resources, on management workers, and on economic evaluation of new projects have been described at some length.

The book, based on the author's dissertation for his Ph.D. degree, contains considerable amount of information. But while editing it for publication as a book, the presentation should have been and could have been more compact. Certain details, which though otherwise important, could have been omitted without disturbing the flow of the argument. For example, the book describes at some length the evolution of public enterprises and their role in successive Five Year Plans. A good part of the book is also devoted to a detailed analysis of the steel industry - its growth, performance and pricing. Even in the Introduction, a major part deals with the steel sector. Or again, the other aspects covered by the author include trends in production, capacity utilisation, labour productivity, labour relations, quality of steel, level of production, etc., which are not directly connected with pricing policy.

Such detailed narration about the importance of the steel industry and its evolution as well as an evaluation of price and purchase preference policy could have been avoided without impairing the flow of the presentation as also its point.

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Indian School of Political Economy

ANNOTATED INDEX OF BOOKS AND ARTICLES IN 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

1986

Singh, J.P., *Patterns of Rural-Urban Migration in India*, Inter-India Publications, New Delhi, 1986.

Based on the data from Indian censuses the study has focussed on the characteristics rural to urban migrants in three States, Bihar, West Bengal and Kerala, in a cross-cultural perspective. The vast size and striking diversity of the country provide a promising context for a comparative analysis of demographic processes. Although contrasts in economic conditions are much greater between West Bengal on the one hand, and Bihar and Kerala on the other, differences in the patterns of migration selectivity are much sharper between Bihar and West Bengal on the one hand and Kerala on the other. Social and cultural variations, particularly with regard to the age at marriage, marriage practices, level of literacy, status of women and family type between North and South India seem to explain the differing patterns of migratory behaviour more than economic variables.

The author has tried to offer a comparative conspectus of patterns and processes of migration differentials in India in an interdisciplinary perspective. On all accounts this work is unusual: in its theme, study design, analysis and style of presentation and can be usefully adopted as a model for further investigations into demographic processes of a pluralistic society like that of India.

1990

Basant, Rakesh and KK. Subrah manian, *Agro-mechanical Diffusion in a Backward Region*, Intermediate Technology Publications, London, 1990, Pp. 94

The study is based on an indepth survey of 130 farm and artisan households located in four villages of a backward district (Panchmahals) of Gujarat. It shows that even in a backward region farmers and artisans continuously modify and adapt new and old agricultural implements to make them suitable to the, often changing, local conditions of production.

Most of the local innovations result from farmer-fabricator interaction. Fabricators modify and improve the implements or design new attachments and tools to solve specific problems. Such innovations and modifications get diffused because they reduce operational problems and raise the cost effectiveness of implements by making them more multipurpose and durable. The improvements often raise the yield from new seed-varieties, chemical fertilisers and irrigation.

Overall, various interacting factors including in the conditions of production and agro-climatic characteristics of the region constrain technology diffusion. The farmer-fabricator interaction, nevertheless, provides scope for adaptive changes and innovations in agricultural implements. The study suggests adequate recognition of local innovations as a first step to inter-link formal and informal R & D systems. A greater interaction among artisans and a synthesis of local experience and scientific knowledge will encourage the growth of local capabilities and the pace of technology diffusion.

Samal, Kishor C, *Urban Informal Sector (An Exploration of the Informal Sector in a Small City of Orissa)* Manak Publication Pvt. Ltd, Delhi, First Edition, 1990. Price Rs 150/-

The economic aspects of all activities of informal sector in a small city of Orissa have been examined in this book. Though the empirical base of the study is Sambalpur (Orissa), the study has drawn heavily on the various other studies in India and abroad to place the findings in a wider perspective. The book brings out some new issues regarding urban informal sector particularly in the specific empirical contexts. The major aspects covered in the book are: structure and operation of the informal sector units, size of the informal sector and changes in it, relationship between informal sector and rural urban migration, selectivity of the informal sector workers in terms of their socio-economic characteristics, productivity and earning differences between the formal and informal sectors and patterns of both forward and backward linkages between the two sectors. It also deals with origin, development and significance of the concept of urban informal sector and policy implications for it.

Empirical identification on the basis of "size" as the first order condition only partially satisfied the concept of informal sector as distinct from the formal sector in all its characteristics identified as second-order conditions. Features that are supposed to characterise the informal sector units are more prominent in these units in smaller towns than in larger cities. The analysis shows that the proportion of informal sector employment in small cities in general is higher than the proportion in big cities in India. The informal sector units do not see any major problem in relation to the demand for their product. Factors external to the units are the major constraints of the expansion of these units. It analyses the factors responsible for rural-to-urban migration and examines the graduation hypothesis. Though backward linkages between the informal and formal sectors are substantial, the forward linkages between the two sectors are negligible.

This is first study of its kind in Orissa.

Sury, M.M., *Government Budgeting in India*, Commonwealth Publishers, New Delhi, 1990, Rs 150/-

This book is designed to explain the mechanics of Central Government budgeting in India. The various inflows and outflows of the Government sector have been explained using data made available in the Union Budget for 1990-91, and the *Economic Survey*, 1989-90. Parliamentary procedures and controls applicable to different phases of the budgetary cycle are explained. Certain technical aspects of the budget, like its economic classification, have been explained using diagrams and flow charts for easy understanding. Recent modifications in the meaning and measurement of budgetary deficit (viz., budget deficit monetised deficit, and overall deficit) have also been analysed. The discussion on budgetary aspects of fiscal federalism includes views and recommendations of the Sarkaria Commission on Centre-State Relations, and the Second Report of the Ninth Finance Commission.

Chapter 1 reviews the economic role of governments and significance of budgeting in modern societies. Chapter 2 deals with constitutional provisions and the various ramifications of Central budget in India. Chapter 3 explains different prices of budgeting like preparation, legalisation, execution, and auditing. It also describes parliamentary procedures and controls applicable to budgetary activities of the Government. Chapter 4 is devoted to a comparative discussion on functional, economic, and cross classification of the budget. Chapter 5 analyses budget in the context of Centre-State financial relations. There are two appendices to the book, one explaining the present structure of Central taxes and the other recording a chronology of Central budgets since Independence.

ARTICLES

1986

Singh, J.P., 1986, 'Marital Status and Migration in Bihar, West Bengal and Kerala: A Comparative Analysis', *Sociological Bulletin*, Vol. 34 (1-2) (March-September), Pp. 69-87.

Following the comparative method of analysis this paper is intended to examine the marital status characteristics of rural to urban migrants in three Indian States - Bihar, West Bengal and Kerala.

The important findings emerging from this study are as follows: singles are more migratory than married where Singles are more likely to be males than females. Similarly married females are greater migrants than married males. However, these differences by sex are much less marked in Kerala than in Bihar and West Bengal. Married migrants tend to migrate alone rather than with their family in Bihar and West Bengal, while in Kerala family migration is more common than individual migration.

Singh, J.P., 1987, 'Educational Differentials in Cityward Migration in India', *Man in India*, Vol. 67(1), Pp. 23-35.

This study reveals that education is positively associated with migration - the level of education, the more likely it is that people will out-migrate from their rural households. Educated people move into cities not merely for jobs but also for furthering their education. The educated persons show a higher proportion than illiterate persons in the migrant population, since they have a greater preference for urban employment, whilst there are not many openings for illiterate and unskilled persons in urban areas. Education makes female migrants greater participants in the work-force in cities of Kerala than those of Bihar and West Bengal.

Singh, J.P., 1988, 'Age and Sex Differentials in Migration in India', *Canadian Studies in Population*, Vol. 15(1), Pp. 87-99.

This paper draws on census data to examine comparatively the patterns of age and sex differentials in rural to urban migration in two Indian States, namely Kerala and West Bengal. It is contended in the paper that migration in India is selective of a very vide range of age groups from 15 to 49 years. Age selectivity in migration tends to differ markedly by sex. In general, female migrants are younger than male migrants, and female migrants in West Bengal are still younger than those in Kerala. This paper has sought to suggest that differing socio-cultural conditions largely account for variations in migration differentials between States.

Das, Victor, 1990, 'Jharkhand Movement: From Realism to Mystification', *Economic and Political Weekly*, July 28, 1990, Pp. 1,624-26.

The movement for a separate state for Jharkhand comprising 22 districts from Bihar, Orissa, West Bengal and Madhya Pradesh is fifty years old now.

Violating the age-old Khunthatti System (rent-free land owning system by clearing the virgin forests) of the tribals, when the outsiders entered this region, expropriated their lands and the government offices became staffed with the non-tribals, the socio-economic condition of the tribals deteriorated. This gave birth to the movement.

Presently, owing to a bourgeois model of leadership, the movement has metamorphosed to mystification.

Samal, Kishore C., 'Linkage between Informal and Formal Manufacturing', *Economic and Political Weekly*, Vol. XXX No. 23, June 9, 1990, Pp. 1,287-88.

This paper is a rejoinder to an article by A. Shaw (*EPW* Feb, 17-24, 1990). This paper brings a distinction between forward and backward linkages as well as between small scale units and informal sector units. It has reviewed the various studies on linkages between informal and formal manufacturing sectors in and outside India. It comes to the conclusion than in some cases linkages between two sectors is complementary. But under integrated conditions, in most of the cases the informal sector is exploited by the formal sector. Despite the exploitative relationship, informal sector will continue to exist. In most activities, it is more likely that the growth of formal and informal sectors get linked together.

Samal, Kishore C., 'Urban Informal Sector and Rural Urban Migration: A Case Study', *Nagarlok*, July-Sept. 1990, Vol. XXII, No. 3, Pp. 30-38.

This paper tests by examining the empirical data from a Class - I town in Orissa, some of the hypothesis including as those envisaged in Todaro model. It examines the cause and motive of migration and mobility of workers from informal to formal sector. Findings suggest that "Push" factors rather than "Pull" factors constitute the main factor in the process of rural-to-urban migration. The life-time expected earnings hypothesis is of little relevance. The "graduation hypothesis" which assigns to informal sector the role of vestibule for rural migrants to enter formal sector, as the ultimate destination also seems doubtful.

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.

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(See rule 8)

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