

Special Notes

Insurance: The Indian Experience

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As a part of the financial sector reforms, the insurance sector has been liberalised recently. With this, the stage has been set for major changes in the insurance market in India with regard to innovations in product, pricing and distribution. This will also necessitate effective regulation to meet the new challenges this sector is likely to encounter in the liberalised environment. In this context, the paper attempts to make an overview of the insurance system in India. The paper also attempts to evaluate the insurance penetration achieved in the country as compared to world standards and traces future scope for this sector as a facilitator for economic and financial development of the country.

Introduction

The economic reforms initiated in the country since mid-1991, have been aimed at increasing efficiency by expanding the role of the private sector along with inflow of investment and technology, while allowing a greater role of market forces. Insurance being one of the key components of the financial sector, reforms in the financial sector would encompass insurance sector reforms also. In the liberalised environment, with increased sophistication and innovation, insurance is seen as a key segment of the financial market. Insurance is therefore an area, which holds immense potential, especially for an emerging economy like India. A Committee on Reforms of the Insurance Sector (Chairman: R.N. Malhotra) was appointed by the Government of India in April 1993 to examine the regulation and structure of the insurance industry. Based on the Report submitted by the Committee in January 1994, concrete steps have been taken by the Government in 1999, after much deliberation, towards liberalisation of the insurance sector.

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The paper traces the evolution of the insurance market in India. Section I of the paper deals with the theoretical aspects of insurance. Section II traces the historical perspectives of insurance in India. Sections III and IV deal with the business and investments of life and non-life insurance in India, respectively. In Section V, an assessment of insurance penetration in India is made in comparison with world standards. Section VI discusses the role of insurance in financial savings of the household sector. Section VII covers regulation of insurance in India and Section VIII gives concluding observations.

Section 1

Theoretical Aspects of Insurance

From the definitional angle, the term insurance can be best understood by referring to the two important schools of thought on the subject viz., (i) transfer school and (ii) pooling school. According to the transfer school, "Insurance is a device for the reduction of uncertainty of one party, called the insured, through the transfer of particular risks to another party, called the insurer, who offers a restoration, at least in part, of economic losses suffered by the insured" (Pfeffer Irving, 1956). On the other hand, according to the 'pooling' school, "..... the essence of insurance lies in the elimination of the uncertain risk of loss for the individual through the combination of a large number of similarly exposed individuals" (Manes Alfred, 1935). Thus, in the case of an individual, insurance is a transfer mechanism through which he passes on risk to the insurer. Whereas, for the insurer, insurance is a pooling mechanism by which he reduces risk in the context of his business.

Insurance markets are generally characterised by asymmetric or imperfect information. In such markets, there is uncertainty about the actual behaviour of the insured. The insured possesses better information about himself or his risk type than the insurer. The high-risk insurees have incentives to hide their true state and present themselves as low risk types. The difficult problem faced by the insurance companies is the exact evaluation of risk and to

adjust the premium accordingly at the time of signing of the insurance contract. In other words, the insurer will have to fix up the price and the amount of insurance the customer can buy at that price. Higher premium will attract a pool of more risky insurance applicants and will lead to the problem of 'adverse selection', while the applicants with small risks will drop out. Higher insured values may lead to 'moral hazard' problems, as it will create an incentive for the insuree to take increased risks than he would otherwise take. The problem of moral hazard, though unimportant in the case of life insurance (as no one would try to take his own life in normal circumstances), can be severe in the area of non-life insurance. It is therefore necessary for the insurance companies to strike a correct balance between the premium and the extent of risk covered.

Section II

An Historical Perspective

One of the main features of the pre-nationalised insurance sector was the utilisation of the insurance sector as a backup or extension by the well known industrial houses of India. There are mainly two forms of insurance in India viz., life and non-life. Life insurance provides protection to a household against the risk of premature death of its income-earning member. Non-life insurance can be grouped under three heads viz., fire, marine and miscellaneous insurance. Life Insurance Corporation of India carries on life insurance business and the General Insurance Corporation and its four subsidiaries deal with non-life insurance. After liberalisation of the insurance sector in 1999, private players have entered both life and non-life business in India. The Insurance Regulatory and Development Authority (IRDA) was constituted in April 2000 as an autonomous body to regulate and develop the business of insurance and re-insurance in the country in terms of the Insurance Regulatory and Development Authority Act, 1999.

Life Insurance

The life insurance business was first introduced in India by a British firm in 1818. Initially, higher premiums were charged for insuring Indian lives as against non-Indian lives. The Bombay Mutual Life Assurance Society, an Indian insurer, set up in 1871 was the first to charge same premium for both Indians and non-Indians. The decades of 1920s and 1930s witnessed rapid growth of life insurance in India. In order to regulate the life insurance business, the Indian Life Assurance Companies Act, 1912 was enacted. The enactment of the Insurance Act, 1938 introduced effective State control over the insurance business in the country. After independence, Indian companies came into their own. In 1956, the Life Insurance Corporation of India was formed when the Government of India brought together the insurance business of 245¹ Indian and foreign insurers and provident societies, under one nationalised monopoly corporation called Life Insurance Corporation (LIC). Since nationalisation, LIC developed a vast network of branches and expanded its business. LIC also extends pension cover to the insured apart from life cover. Acting on the recommendations of the Committee on Reforms in the Insurance Sector (1994), private players were allowed into the Life insurance business in 2000. During 2000-01, there were 6 registered private companies engaged in the business of life insurance.

General Insurance

The first general insurance company viz., Triton Insurance Company Ltd. was established in Calcutta in 1850. Its shareholders were mainly British. The first Indian company for General Insurance business was the Indian Mercantile Insurance Company Ltd., set up in 1907 in Mumbai. The general insurance business in India was nationalised with effect from January 1973 by the General Insurance Act, 1972. As a result, 107 insurers (including both Indian and foreign companies) were amalgamated and grouped into four companies viz., the National Insurance Company Ltd., the New India Assurance Company Ltd., the Oriental Insurance Company Ltd. and the United India Insurance Company Ltd.

General Insurance Corporation (GIC) was incorporated as a company in November 1972 and it commenced business on January 1, 1973. GIC has been acting as the Indian reinsurer² since then. GIC has also been accepting overseas reinsurance business. For regulation of product pricing of general insurance, a Tariff Advisory Committee (TAC) started functioning since 1968 headed by the Controller of Insurance. After the nationalisation of GIC in 1972, the management of TAC was delegated to GIC. Acting on the recommendations of the Committee on Reforms in the Insurance Sector (1994), private players were allowed into the non-Life insurance business also in 2000. During 2000-01, there were 4 registered private companies engaged in the business of non-life insurance.

Section III

Business and Investments of Life Insurance Companies

Since nationalisation of the life insurance business in India in 1956 and non-life business in 1972, rapid strides have been made in the development of the insurance sector. The Life Insurance Corporation has introduced different types of policies to suit different income groups and age groups over the years. These insurance policies include term, whole life, endowment, annuity, individual, group and pension plans. This has afforded reasonable variety of investment schemes to the investors. The number of offices of LIC increased from 889 in 1981-82 to 2048 in 2000-01 (Table 1). The number of policies grew from 3.7 per cent in 1981-82 to 12.0 percent in 2000-01. This growth, which peaked at 12.8 per cent in 1990-91, could not be maintained in the subsequent years. The growth in the sum assured which was 14.7 in 1981-82, peaked to a high of 27.4 per cent in 1989-90, but eventually declined to 20.3 per cent in 2000-01.

The rural new business of LIC as a percentage of its overall new business has grown well during the 1980s and 1990s. The penetration in the rural areas was more pronounced in the 1990s than in the 1980s (Table 1). The share of rural to total new business in terms of number of policies has increased from 32.8

Table 1 : Life Insurance Business of LIC

Business in Force				New Business			
All India				All India		Rural	
Year	No. of Offices	No. of Policies (in Lakh)	Sum Assured (Rs. Crore)	No. of Policies (in Lakh)	Sum Assured (Rs. Crore)	No. of Policies (in Lakh)	Sum Assured (Rs. Crore)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1981-82	889	236.0	23,998	21.0	3,479	6.9	927
1982-83	958	243.8	26,264	22.3	3,974	7.3	1,038
1983-84	1,023	252.7	30,266	23.7	4,387	8.3	1,260
1984-85	1,107	264.8	33,785	27.0	5,376	9.5	1,570
1985-86	1,197	279.9	40,404	32.9	7,056	12.2	2,177
1986-87	1,280	298.0	47,906	38.7	9,068	14.8	2,916
1987-88	1,353	323.5	58,798	46.9	12,435	18.3	3,997
1988-89	1,427	360.8	74,129	59.8	17,223	24.1	5,818
1989-90	1,528	403.4	94,408	73.9	23,220	30.5	8,086
1990-91	1,651	455.1	1,18,651	86.5	28,139	36.8	10,295
1991-92	1,774	508.6	1,45,929	92.4	32,064	41.3	12,440
1992-93	1,906	566.1	1,77,268	99.6	35,957	44.4	14,085
1993-94	2,008	608.0	2,07,601	107.3	41,814	48.6	16,680
1994-95	2,021	654.5	2,53,333	108.7	55,229	49.0	21,571
1995-96	2,024	708.8	2,94,336	110.2	51,816	52.6	21,264
1996-97	2,023	776.7	3,43,018	122.7	56,741	60.3	24,279
1997-98	2,046	849.2	3,98,959	133.1	63,618	68.4	27,551
1998-99	2,048	916.4	4,57,435	148.4	75,316	81.2	35,373
1999-00	2,048	1,013.0	5,34,589	169.7	91,214	97.0	44,169
2000-01	2,048	1,130.2	6,43,241	196.6	1,24,772	109.1	59,641

Source: Annual Reports of LIC.

per cent in 1981-82 to 55.5 percent in 2000-01. In terms of sum assured, this share increased from 26.6 per cent in 1981-82 to 47.8 per cent in 2000-01. The Committee on Reforms in the Insurance Sector (Malhotra Committee) had recommended that it should be made mandatory for insurance companies to transact a minimum business in rural areas and they should not be allowed to avoid small policies. With improving rural infrastructure, rising incomes and greater awareness among the rural people regarding the importance of life cover, further growth in rural insurance business can be achieved.

Life Insurance Business of Private Companies

The insurance market was opened to the private sector in August 2000 and the initial batch of new registrations was granted on 23rd October, 2000. During 2000-01, there were 6 registered private life insurance companies viz., (i) Birla Sun-Life Insurance Company Ltd. (BSLIC), (ii) HDFC Standard Life Insurance Company Ltd. (HSLIC), (iii) ICICI Prudential Life Insurance Company Ltd. (IPLIC), (iv) Max New York Life Insurance Company Ltd. (MNYLIC), (v) SBI Life Insurance Company Ltd. (SLIC) and (vi) TATA AIG Life Insurance Company Ltd. (TALIC). Out of these, only 4 companies viz., BSLIC, HSLIC, IPLIC and MNYLIC have started doing business by the end of March 2001. The business of these 4 companies during 2000-01 is given below (Table 2).

Table 2 : Life Insurance Business of Private Companies during 2000-01

(Figures in Lakhs)

	BSLIC	HSLIC	IPLIC	MNYLIC
No. of Policies	0.01	0.01	0.06	0.02
Sum Assured (Rs.)	552.50	3,015.06	10,000.00	1,335.31
Annual Premium (Rs.)	31.90	67.19	597.00	15.98

Source : First Annual Report of Insurance Regulatory and Development Authority, 2000-01.

Investments of LIC

The investments of an insurance company are intended to build up reserves and not to book short-term profits. These reserves provide a cushion for long-term contingencies, which can be directed towards investment in socially desirable sectors like infrastructure.

The provisions of Section 27 A of the Insurance Act, 1938 as amended from time to time have prescribed the investment patterns for life insurance. The Malhotra Committee (1994) had recommended that the mandated investment of funds of LIC should be reduced from the then existing level of 75 per cent to 50 per cent. Consequent to the liberalisation of the insurance sector, and as per the notification of IRDA (Investment) Regulations, 2000 dated August 14, 2000, the life insurance companies have to invest a minimum of 50 per cent of their total assets in government and other approved securities. They are also required to invest a minimum of 15 per cent in infrastructure and social sectors, leaving the balance 35 per cent free for investment in the capital market.

The investment pattern of LIC for the period 1980-81 to 2000-01 shows that major share of its investments were in Central and State Government securities followed by loans to State and Central government and their Corporations and Boards (Table 3). The share of investments in Central and State Government securities increased from 55.0 per cent in 1980-81 to 79.8 per cent in 2000-01. On the other hand, the share of investments in the form of loans to State and Central government and their Corporations and Boards declined from 41.7 per cent in 1980-81 to 18.3 per cent in 2000-01.

Table 3 : Investments of Life Insurance Corporation of India

(Rs. Crore)

Year	Loans to State and Central Government and their Corporations and Boards etc.	Stock Exchange Securities (Central Govt. State Govt. Securities and Others)	Special Deposits with Central Government	Other Investments (UTI, LIC, MF etc.)	Investment out of India
(1)	(2)	(3)	(4)	(5)	(6)
1980-81	2,726	3,591	106	72	40
1981-82	3,072	4,041	241	78	41
1982-83	3,427	4,603	341	87	41
1983-84	3,755	5,239	471	102	46
1984-85	4,072	5,948	621	114	49
1985-86	4,474	6,823	771	137	60
1986-87	4,885	7,930	921	143	78
1987-88	5,442	9,231	1,071	130	89
1988-89	6,218	10,932	1,259	190	103
1989-90	7,260	12,919	1,409	262	109
1990-91	8,895	15,671	1,483	297	126
1991-92	1,102	19,059	1,528	414	181
1992-93	13,092	23,082	1,628	410	195
1993-94	14,603	29,538	1,698	496	227
1994-95	16,114	37,278	1,839	628	323
1995-96	18,086	47,088	1,970	802	332
1996-97	20,487	58,851	2,140	772	415
1997-98	22,882	72,537	2,380	758	410
1998-99	26,110	90,824	2,192	920	400
1999-00	28,925	1,14,032	2,042	906	458
2000-01	32,155	1,40,106	1,862	891	476

Source: Life Insurance Corporation of India.

Section IV

Business and Investment of Non-Life Insurance in India

The general insurance companies mainly specialise in insurance business like fire, marine, aviation, theft, crop, accident, health (medi-claim) etc. General insurance policies, unlike life insurance

policies are short duration contracts. Also, general insurance policies, in comparison to life insurance policies do not mobilise savings, but they collect funds from the premiums paid. The number of offices of GIC has more than trebled from 1272 in 1980-81 to 4177 in 2000-01 (Table 4). However, after 1992-93, this growth was either negligible or negative. As regards the growth in the number of policies and net claims payable of GIC and its subsidiaries, no steady pattern is observed. However, the volume of business in terms of number of policies and net claims payable has improved substantially over the years.

Table 4 : Business of GIC and its subsidiaries

Year	No. of Offices	No. of Policies	Net Claims Payable (Rs. Crore)
(1)	(2)	(3)	(4)
1980	1,272	N.A.	296
1981	1,346	N.A.	360
1982	1,550	N.A.	435
1983	1,684	N.A.	512
1984	2,229	1,18,51,020	689
1985	2,731	1,35,24,793	795
1986	3,089	1,44,09,538	904
1987	3,489	1,63,63,931	1,008
1988-89*	3,727	2,12,53,053	1,676
1989-90	4,025	1,79,74,945	1,503
1990-91	4,180	2,03,32,070	1,898
1991-92	4,304	2,21,55,284	2,303
1992-93	4,352	2,10,82,757	2,839
1993-94	4,236	2,11,88,038	3,050
1994-95	4,202	2,19,82,359	4,289
1995-96	4,213	2,45,90,980	4,427
1996-97	4,220	2,76,00,225	5,105
1997-98	4,208	2,97,58,577	5,625
1998-99	4,166	2,92,18,297	6,461
1999-00	4,174	3,39,70,855	7,586
2000-01\$	4,177	3,72,94,002	8,872

*15 Months. \$ Provisional. N.A. : Not available.

Note : Data upto 1987 are as at end December and for the remaining years data are as at end March.

Source : General Insurance Corporation of India.

The rural business of GIC and its subsidiaries form only 5.2 per cent of total domestic general insurance premium in 1998-99 (latest available). The non-life business transacted in the rural areas mainly relates to insurance of livestock. Major portion of this business transacted relates to livestock cover under the Integrated Rural Development Programme (IRDP) with bank credit linkages, where insurance is mandatory. Other rural businesses covered include agricultural pumpsets, Janata Gramin Personal Accident, commercial poultry farms and other businesses including pisciculture and sericulture.

Non-Life Insurance Business of Private Companies

During 2000-01, there were 4 registered private non-life insurance companies viz., (i) IFFCO-Tokio General Insurance Company Ltd., (ITGIC), (ii) Reliance General Insurance Company Ltd. (RGIC), (iii) Royal Sundaram Alliance Insurance Company Ltd. (RSAIC), (iv) TATA AIG General Insurance Company Ltd. (TAGIC). The business of these companies during 2000-01 was very low (Table 5).

Table 5 : Non-Life Insurance Business of Private Companies during 2000-01

(Rs. Crore)

	ITGIC	RGIC	RSAIC	TAGIC
Net Claims Payable	0.00	0.00	0.02	0.00
Net Premium	0.25	0.00	0.19	0.00

Source : First Annual Report of Insurance Regulatory and Development Authority, 2000-01.

Investments of General Insurance Companies

The provisions of Section 27 B of the Insurance Act 1938 as amended from time to time has prescribed the investment patterns for non-life insurance. The Malhotra Committee (1994) had recommended that the mandated investment of funds of the general insurance companies should be reduced from the then existing level of 70 per cent to 35 per cent. In April 1995, the Government relaxed the investment policies of GIC and its subsidiaries and they were allowed to invest upto 55 per cent of the annual accretion of their funds in

market oriented schemes as against 30 per cent earlier. Consequent to the liberalisation of the insurance sector, and as per the notification of IRDA (Investment) Regulations, 2000 dated August 14, 2000, the investments of non-life insurance companies cannot be less than 30 per cent in government and other approved securities. They are also required to invest a minimum of 10 per cent in infrastructure and social sectors and a minimum of 5 per cent in the area of housing and fire fighting. Of the balance 55 per cent, 30 per cent will be governed by prudential norms, while 25 per cent can be invested in unapproved securities including investment in equities.

Table 6 : Investments of GIC and its Subsidiaries

(Rs. Crore)

Year	Central Govt. Securities	State Govt. & Public Sector	Soft Loans for Housing & Fire Fighting	Market Investment	Other Investment
(1)	(2)	(3)	(4)	(5)	(6)
1980	189	83	74	299	243
1981	232	106	117	326	303
1982	327	136	200	388	268
1983	387	166	323	491	280
1984	453	204	423	660	147
1985	522	222	548	741	142
1986	599	247	707	869	144
1987	657	302	813	989	154
1988-89*	729	376	1,002	1,149	257
1989-90	794	450	1,181	1,394	315
1990-91	952	549	1,438	1,617	606
1991-92	1,066	648	1,654	2,111	856
1992-93	1,270	796	1,957	2,761	856
1993-94	1,567	875	2,481	3,128	979
1994-95	1,793	1,022	3,048	3,727	986
1995-96	2,214	582	2,941	5,380	1,716
1996-97	2,647	861	2,954	6,226	2,205
1997-98	3,166	1,166	3,113	6,945	2,886
1998-99	3,649	1,497	3,175	8,224	3,194
1999-00	4,391	2,139	3,198	9,691	3,240
2000-01\$	5,125	2,550	3,404	10,637	2,293

* 15 months. \$ Provisional.

Note : Data upto 1987 are as at end-December and for the remaining years data are as at end-March.

Source : General Insurance Corporation of India.

The investment pattern of GIC and its subsidiaries for the period 1980-81 to 2000-01 shows that the important avenues for its investments were in market investment followed by Central Government securities (Table 6). Market investments of GIC and its subsidiaries increased from 33.7 per cent in 1980-81 to 44.0 per cent in 2000-01. Whereas the investments in Central Government securities decreased marginally from 21.3 per cent in 1980-81 to 21.0 per cent in 2000-01. The investment pattern of GIC is thus different from that of LIC, whose major investments are in Central and State Government securities.

Section V

Insurance Penetration in India as Compared to Global Standards

Insurance density, measured in terms of premium per capita, was much lower in emerging markets in 2000 as compared with the industrialised countries of the world (Table 7). Similarly, insurance premium as percentage of GDP *i.e.*, insurance penetration, was lower in the emerging markets as compared to the industrialised countries in 2000. However, South Africa and South Korea, which figure among the emerging markets are exceptions and are among the forerunners in insurance penetration. Of the total world insurance business in terms of insurance premiums, nine-tenths were contributed by industrialised countries, whereas, the emerging markets accounted for 10 per cent of total world business in insurance. However, the growth rate of premium in 2000 in the emerging markets was higher as compared with the industrialised countries, indicating the growing importance of the insurance sector in the former. India's insurance penetration was only 2.3 per cent, as against the world average of 7.8 per cent in 2000 (Table 8). The low insurance penetration reflects on the vast potential for the development of insurance market in India.

Table 7 : Continent-wise Market Share of World Insurance Business and Growth in Premium in 2000

Continent	Share of World Market (%)	Real Premium Growth (%)	Premium as % of GDP	Premium per capita (USD)
(1)	(2)	(3)	(4)	(5)
America	39.0	4.9	7.6	1,165
North America	37.3	4.8	8.6	2,988
Latin America	1.7	6.6	2.1	80
Europe	31.9	11.9	8.2	945
Western Europe	31.2	11.8	8.7	1,607
Central/East Europe	0.7	15.8	2.5	52
Asia	26.5	2.8	7.7	180
Japan	20.6	0.6	10.9	3,973
S&E Asia	5.4	11.7	4.2	42
Middle East	0.4	5.3	1.6	36
Africa	1.0	7.5	4.1	32
Oceania	1.6	1.7	8.9	1,316
World	100.0	6.6	7.8	405
<i>Industrialised Countries*</i>	<i>90.7</i>	<i>6.2</i>	<i>9.1</i>	<i>2,384</i>
<i>Emerging Markets#</i>	<i>9.3</i>	<i>10.3</i>	<i>3.2</i>	<i>44</i>

* North America, Western Europe, Japan and Oceania.

Latin America and Caribbean, Central and Eastern Europe, South and East Asia, Middle East and Africa.

Source: Swiss Re, Sigma No. 6/2001.

Opening up of the insurance sector has been a key component of economic reforms put in place in South and East Asian economies in the 1980s and 1990s. The major insurance markets in South and East Asia are generally open indicating the impact of the reform measures. Since liberalisation of the Korean and Taiwanese insurance markets in 1987, these markets grew at a much faster pace than before, suggesting that liberalisation of the insurance sector facilitated growth of insurance in these countries.

Table 8 : International Comparison of Insurance Penetration in 2000 : Premiums as share of Gross Domestic Product (%)

Continent	Select Countries	Total Business	Life	Non-Life
North America	United States	8.8	4.5	4.3
	Canada	6.6	3.3	3.3
Latin America	Panama	5.0	1.6	3.5
	Chile	4.1	2.9	1.2
	Colombia	2.3	0.6	1.6
	Brazil	2.1	0.4	1.8
	Argentina	2.5	0.9	1.6
	Venezuela	1.9	0.1	1.8
	Uruguay	1.9	0.3	1.6
	Mexico	1.7	0.9	0.9
Europe	Switzerland	12.4	7.7	4.7
	United Kingdom	15.8	12.7	3.1
	France	9.4	6.6	2.8
	Germany	6.5	3.0	3.6
	Italy	5.8	2.4	2.5
	Sweden	4.5	2.0	2.5
	Russia	1.6	3.4	2.4
Asia	South Korea	13.1	9.9	3.2
	Japan	10.9	8.7	2.2
	Taiwan	7.4	5.1	2.3
	Singapore	4.2	3.2	1.0
	Malaysia	3.7	2.1	1.6
	India	2.3	1.8	0.6
	Thailand	2.5	1.5	1.0
	Philippines	1.4	0.8	0.6
	China	1.8	1.1	0.7
Africa	South Africa	16.9	14.0	2.8
	Zimbabwe	4.0	2.0	2.1
	Kenya	2.6	0.7	1.9
	Morocco	2.8	0.8	2.0
	Tunisia	1.7	0.1	1.6
Oceania	Australia	9.4	6.0	3.4
	New Zealand	6.0	1.6	4.3

Note : The components may not add up to the total due to rounding off.

Source: Swiss Re, Sigma No. 6/2001.

In India, the share of life insurance premium as a percentage of GDP, *i.e.*, insurance penetration, has increased steadily from 0.6 per cent in 1980-81 to 1.6 per cent in 2000-01 (Table 9). However, this is much lower as compared to that of the industrialised countries. The life fund³ as percentage of GDP increased from 4.6 per cent in 1980-81 to 8.9 per cent in 2000-01 reflecting an impressive performance of LIC in terms of generating premium and investment income in excess of its expenditures and claims. The life insurance density, *i.e.*, life insurance premiums per capita has steadily increased from Rs. 13.1 in 1980-81 to Rs. 334.8 in 2000-01. However, this is much lower in comparison with world standards. This again reveals the vast scope for life insurance penetration in India. The life fund per capita which was Rs. 97.4 in 1980-81 has increased more than eighteen fold to Rs. 1819.5 in 2000-01 reflecting the attractiveness of life insurance business.

Table 9 : Penetration of Life Insurance Business in India

Year	Premium Income (Rs. Crore)	Per cent to GDP	Life Fund (Rs. Crore)	Per cent to GDP	Premium per capita (in Rs.)	Life Fund Per capita (in Rs.)
(1)	(2)	(2.1)	(3)	(3.1)	(4)	(5)
1980-81	888	0.6	6,614	4.6	13	97
1981-82	1,007	0.6	7,563	4.5	15	109
1982-83	1,109	0.6	8,632	4.6	16	122
1983-84	1,229	0.6	9,800	4.5	17	136
1984-85	1,405	0.6	11,191	4.6	19	151
1985-86	1,609	0.6	12,666	4.6	21	168
1986-87	1,885	0.6	14,502	4.7	24	188
1987-88	2,337	0.7	16,632	4.7	30	211
1988-89	2,938	0.7	19,569	4.6	37	243
1989-90	3,812	0.8	23,472	4.8	46	286
1990-91	4,777	0.8	28,401	5.0	57	339
1991-92	5,946	0.9	34,691	5.3	69	405
1992-93	7,146	1.0	40,998	5.5	82	470
1993-94	8,758	1.0	49,666	5.8	98	557
1994-95	10,385	1.0	59,979	5.9	114	659
1995-96	12,094	1.0	72,780	6.1	130	784
1996-97	14,500	1.1	87,760	6.4	153	928
1997-98	17,066	1.1	1,05,833	7.0	177	1,098
1998-99	20,234	1.2	1,27,389	7.3	206	1,296
1999-00	24,540	1.3	1,53,442	8.0	245	1,533
2000-01	34,118	1.6	1,85,407	8.9	335	1,820

Source: Annual Reports of Life Insurance Corporation of India.

In India, the share of gross and net insurance premiums for non-life insurance as a percentage of GDP, *i.e.*, non-life insurance penetration, have increased from 0.4 per cent and 0.3 per cent, respectively in 1980-81 to 0.5 per cent and 0.5 per cent in 2000-01 (Table 10). However, this compares quite unfavourably with that of the industrialised countries and other emerging markets in general. The non-life gross and net premiums per capita (non-life insurance density) have both steadily increased from Rs. 7.4 in 1980-81 to Rs. 105.7 in 2000-01 and from Rs. 7.1 to Rs. 100.8, respectively during the same period. However, this is much lower in comparison with world standards. This reveals the vast scope for non-life insurance penetration in India.

Table 10 : Penetration of General Insurance Business in India

Year	Gross Premium (Rs. Crore)	as % of GDP	Net Premium (Rs. Crore)	as % of GDP	Gross Premium Per capita (in Rs.)	Net Premium Per capita (in Rs.)
(1)	(2)	(2.1)	(3)	(3.1)	(4)	(5)
1980	503	0.4	481	0.3	7	7
1981	624	0.4	600	0.4	9	9
1982	761	0.4	725	0.4	11	10
1983	895	0.4	881	0.4	12	12
1984	1,035	0.4	1,031	0.4	14	14
1985	1,204	0.4	1,191	0.4	16	16
1986	1,423	0.5	1,366	0.4	18	18
1987	1,652	0.5	1,580	0.5	21	20
1988-89*	2,349	0.6	2,255	0.5	29	28
1989-90	2,279	0.5	2,186	0.5	28	27
1990-91	2,912	0.5	2,743	0.5	35	33
1991-92	3,503	0.5	3,450	0.5	41	40
1992-93	4,070	0.5	3,868	0.5	47	44
1993-94	4,766	0.6	4,427	0.5	53	50
1994-95	5,271	0.5	4,879	0.5	58	54
1995-96	6,377	0.5	5,956	0.5	69	64
1996-97	7,348	0.5	6,733	0.5	78	71
1997-98	8,086	0.5	7,357	0.5	84	76
1998-99	9,158	0.5	8,403	0.5	93	85
1999-00	9,982	0.5	9,364	0.5	100	94
2000-01	10,772	0.5	10,272	0.5	106	101

Note : Data upto 1987 are as at end December and
for the remaining years data are as at end March.

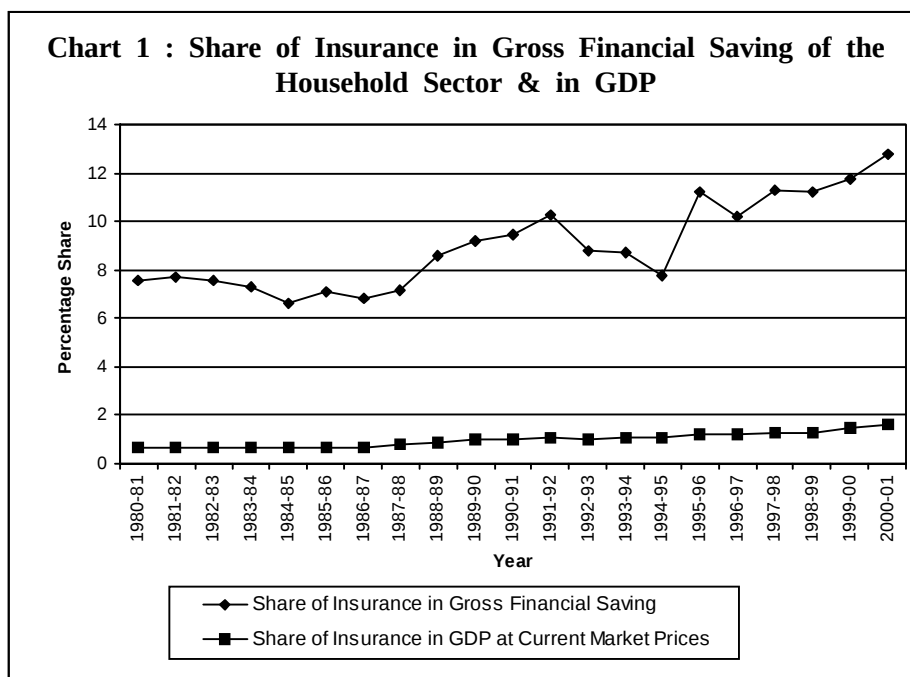
* 15 months

Source: General Insurance Corporation of India.

Section VI

Role of Insurance in Financial Saving and GDP

Insurance is an important financial saving instrument of the households. The saving component of life insurance competes with the savings of the households in other financial instruments such as bank deposits, mutual funds and equities. The total life insurance in India comprises three components *viz.*, life insurance, postal and state insurance. The life insurance business is almost in the hands of the LIC. Its share ranged between 85 per cent and 95 per cent of the total insurance fund during 1980-81 through 2000-01. The share of insurance, which constitutes a significant part of gross financial savings of the household sector, has gone up from 7.6 per cent in 1980-81 to 12.8 per cent in 2000-01 (Chart 1 and Table 11). During the period 1991-92 to 2000-01, this share has remained above 10 per cent, barring the three years from 1992-93 to 1994-95. The average share of insurance in gross financial savings which was 7.6 per cent in the 1980s increased to 10.3 per cent in the 1990s. The share of insurance in GDP has shown a consistently rising trend and more than doubled from 0.7 per cent



in 1980-81 to 1.6 per cent in 2000-01. The average share of insurance as a percentage of GDP increased from 0.8 per cent in the 1980s to 1.2 per cent in the 1990s.

**Table 11 : Financial Assets of the Household Sector :
Insurance Funds**

(Rs. Crore)

Year	Total Insurance Funds	Life	Postal	State	Gross Financial Saving	Share of Insurance in Gross Financial saving (%)	Share of Insurance in GDP (%)
(1)	(2)	(2.1)	(2.2)	(2.3)	(3)	(4)	(5)
1980-81	915	821	24	70	12,118	7.6	0.7
1981-82	1,048	944	28	76	13,618	7.7	0.7
1982-83	1,235	1,092	33	110	16,270	7.6	0.7
1983-84	1,376	1,221	33	122	18,738	7.3	0.7
1984-85	1,557	1,338	37	182	23,610	6.6	0.7
1985-86	1,802	1,522	49	231	25,541	7.1	0.7
1986-87	2,159	1,855	66	238	31,849	6.8	0.7
1987-88	2,589	2,196	74	319	36,106	7.2	0.8
1988-89	3,423	3,005	88	330	39,958	8.6	0.9
1989-90	4,415	3,984	109	322	48,233	9.2	1.0
1990-91	5,599	5,030	133	436	58,967	9.5	1.0
1991-92	7,003	6,388	165	450	68,136	10.3	1.1
1992-93	7,114	6,440	182	492	80,450	8.8	1.0
1993-94	9,548	8,784	222	542	1,09,597	8.7	1.1
1994-95	11,370	10,439	258	673	1,45,503	7.8	1.1
1995-96	13,894	12,934	324	636	1,24,339	11.2	1.2
1996-97	16,121	15,102	400	619	1,58,518	10.2	1.2
1997-98	19,410	18,194	458	758	1,71,740	11.3	1.3
1998-99	23,428	21,936	536	956	2,09,723	11.2	1.3
1999-00	28,644	26,894	667	1,083	2,43,287	11.8	1.5
2000-01P	34,064	32,218	592	1,254	2,65,134	12.8	1.6

P : Provisional Estimates.

Note : As the data on insurance funds and its break-up as per 1993-94 series are not available, the data used in this table upto 1992-93 are based on 1980-81 series. For the remaining years, data are based on 1993-94 series.

Source : Central Statistical Organisation.

The share of insurance in real GDP *i.e.*, insurance as a percentage of real GDP during the period 1981-82 to 2000-01 was below 1 per cent (Chart 1 and Table 12). The insurance sector has been only a marginal contributor to the country's GDP. This is despite the country's vast population and immense potential for growth of insurance. One of the reasons attributable to this could be the lack of effective competition due to the monopoly position enjoyed by the public sector. Opening up of the insurance sector may augur well for the growth in income from this sector.

**Table 12 : Gross Domestic Product from Insurance
(at factor cost at 1993-94 prices)**

(Rs. Crore)

Year	GDP	Insurance	Insurance Growth	Insurance as % of GDP		
				Life	Non-life	Total
1	2	3	4	5	6	7
1981-82	4,25,073	2,284	11.7	0.2	0.4	0.5
1982-83	4,38,079	2,510	9.9	0.2	0.4	0.6
1983-84	4,71,742	2,820	12.4	0.2	0.4	0.6
1984-85	4,92,077	2,680	-5.0	0.2	0.3	0.5
1985-86	5,13,990	3,074	14.7	0.2	0.4	0.6
1986-87	5,36,257	3,383	10.1	0.2	0.4	0.6
1987-88	5,56,778	3,199	-5.4	0.2	0.3	0.6
1988-89	6,15,098	3,275	2.4	0.2	0.3	0.5
1989-90	6,56,331	5,211	59.1	0.3	0.5	0.8
1990-91	6,92,871	4,034	-22.6	0.3	0.3	0.6
1991-92	7,01,863	5,477	35.8	0.3	0.5	0.8
1992-93	7,37,792	4,738	-13.5	0.3	0.3	0.6
1993-94	7,81,345	5,409	14.2	0.3	0.4	0.7
1994-95	8,38,031	3,736	-30.9	0.3	0.1	0.5
1995-96	8,99,563	4,973	33.1	0.3	0.2	0.6
1996-97	9,70,083	4,920	-1.1	0.3	0.2	0.5
1997-98	10,16,399	7,424	50.9	0.4	0.4	0.7
1998-99	10,82,472	7,979	7.5	0.4	0.4	0.7
1999-00	11,48,500	7,492	-6.1	0.4	0.2	0.7
2000-01	11,93,922	7,771	3.7	0.5	0.2	0.7

Note : The components may not add up to the total due to rounding off.

Source : Central Statistical Organisation.

Section VI

Insurance Regulation in India

Insurance regulation in India started with the passage of the Life Insurance Companies Act, 1912 and the Provident Fund Act, 1912. The first comprehensive legislation was introduced with the Insurance Act, 1938 which provided strict State control over insurance business in the country under the supervision of the Controller of Insurance. Subsequently, the Insurance Act, 1950 was enacted to check malpractices in the insurance business and also to exercise more control over the operations of the insurance companies. With the nationalisation of the life insurance industry in 1956 and the general insurance industry in 1972, the role of the Controller of Insurance diminished over a period of time. On account of the monopoly status of the public sector units viz., LIC and GIC in the area of insurance, prior to liberalisation of this sector, regulation was perceived to be of less interest due to the inbuilt procedures in place.

The phased globalisation of the Indian economy that started in the early 1990s began to have its impact on the monopolistic structure of the Indian insurance industry. Further, the liberalisation of insurance markets was among the objectives of the Uruguay round negotiations conducted under the auspices of General Agreement on Trade and Tariff (GATT). These negotiations included trade in services and insurance in the context of financial services (UNCTAD Report, January 1993). In 1993, the Government appointed a Committee headed by Shri R.N. Malhotra to examine the reforms required in the insurance sector. The Committee in its report submitted in 1994 recommended *inter alia* the opening up of the insurance sector to players other than State-Owned ones. These recommendations were accepted by the Government and the Insurance Regulatory and Development Authority (IRDA) Act, 1999, consequent amendments to the Insurance Act, 1938, Life Insurance Corporation Act, 1956 and the General Insurance Business Act, 1972 were passed in the year 2000, paving the way for opening up of the insurance sector.

The important functions of the IRDA as per the IRDA Act 1999, include the following:

- i) Licensing and regulating the insurance sector by acting as an independent and regulatory body.
- ii) Specifying requisite qualifications, code of conduct and practical training for insurance intermediaries and agents.
- iii) Protecting the interests of the policyholders in matters concerning assigning of policy, settlement of insurance claim *etc.*
- iv) Regulating investment of funds by insurance companies.
- v) Calling for information from, undertaking inspection of, conducting enquiries and investigations including audit of the insurers and other organisations connected with the insurance business.
- vi) Regulating maintenance of margin of solvency of the insurer.
- vii) Adjudication of disputes between insurers and intermediaries or insurance intermediaries.
- viii) Supervising the functioning of the Tariff Advisory Committee.
- ix) Promoting efficiency in the conduct of insurance business.

Efforts are underway to bring about internationalisation of regulations in the insurance sector on the lines of the banking sector so as to take care of development and health of the insurance sector. This concern had resulted into the establishment of International Association of Insurance Supervisors (IAIS), head quartered at Basle in Switzerland. More than 100 regulators of insurance industries worldwide are members of this Association and India is also one amongst them. The underlying objective of this organisation is to bring about a degree of standardisation in regulatory procedures adopted by different countries. The Advisory

Group on Insurance Regulation (Chairman: Shri R. Ramakrishnan) appointed by the Standing Committee on International Financial Standards and Codes (Chairman: Dr. Y.V. Reddy), stated that Indian insurance regulations are, by and large, in consonance with international standards.

Section VIII

Concluding Observations

The insurance sector in India was hitherto the monopoly of the State. Though the performance of the public sector insurance companies - LIC and GIC was quite satisfactory, the Indian insurance business, both life and non-life, left much to be desired as compared to international standards. There is low penetration and general lack of efficiency. The per capita premiums are very low when compared to the standards of both industrialised countries and other emerging markets. With the entry of private players into the insurance business, it is expected that competition would increase and overall functioning of the insurance sector would improve. The liberalisation process initiated in the insurance sector is expected to bring about better integration of the financial markets and promote financial development of the country.

Insurance, apart from acting as an important financial instrument for risk cover, is also a major instrument for mobilisation of long-term savings. The savings part of insurance, if channelised efficiently into long-term investments, could play a greater role in funding infrastructure projects with long gestation periods. With increasing urbanisation and longer life expectancy, the demand for insurance is expected to increase substantially in the years to come. In the liberalised scenario, the Indian insurance regulator *i.e.*, IRDA will have to play a crucial role towards meeting the special needs and challenges of the Indian insurance market. The regulator, besides ensuring long-term solvency of insurers, should also promote competition among them. The development of the Indian insurance market into a healthy and vibrant one is expected to further aid in the economic and financial development of the country by acting as a mobiliser of savings and as a factor of

production, besides playing the usual role of providing social security.

Notes

1. 154 Indian insurers, 16 non-Indian insurers and 75 provident societies.
2. Reinsurance operates on the same principle as that of insurance. It covers the risks of insurers by spreading the risk with as many insurers as possible.
3. Life fund of an insurance company is the excess of premiums and investment income over claims and expenses on its revenue and capital accounts. This fund is generally used for distribution to policy holders and also for adding to the reserves of the company.

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Delay and Cost Escalation in Central Public Sector Projects

R.K. Jain*

Delay and cost escalation in the implementation of public sector projects have been an area of concern. Such delays not only put additional burden on public finances, but also deprive the country of their beneficial effects in terms of their direct and indirect contribution to output and employment. In view of these far reaching consequences, an analysis of the typical implementation period, time and cost overruns and factors responsible for delay in large public sector projects in various sectors is desirable. It is also desirable to find out ways to improve project planning and implementation of these projects in order to minimise delays and cost escalation. In this context, the present study makes an attempt to analyse some of these aspects and makes some suggestions to reduce time and cost overruns in Central public sector projects.

Introduction

In the Indian context, the Central sector projects form the core of the infrastructure initiatives undertaken by the central government. The delay in implementation of these projects not only affects the project's contribution to the economic growth, but also leads to reduction in the employment potential to be generated on completion. The timely completion of large investment projects, particularly in the infrastructure sector, is also important for improving the production performance of many other sectors. It is, therefore, necessary to minimise the time and cost overruns of these projects. In this context, an analysis of the typical implementation period, time and cost overruns and factors responsible for delay in large public sector projects in various sectors has been undertaken in this study. It is also desirable to find out ways to improve project planning and implementation of these projects.

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The study has been organised in five sections. Section I makes an attempt to estimate cost escalation in public sector projects in different areas. Section II throws some light on typical implementation period in various sectors. Section III dwells on the causes behind the delay in implementation of these projects, while Section IV suggests measures for improvement in project planning and implementation. Section V outlines the concluding observations.

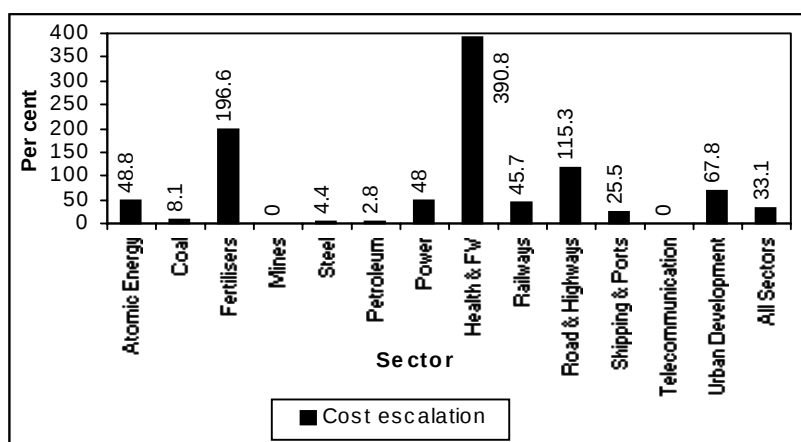
Section I

Magnitude of Cost Escalation in Public Sector Projects

The study is based on 192nd Flash Report on Central Sector Projects (costing Rs. 100 crore and above) for the month of October 2001, released by the Ministry of Statistics and Programme Implementation (MOSPI), Government of India. The Project Monitoring Division (PMD) is a Division in the MOSPI that compiles and publishes this Report, which provides ready information on the implementation of ongoing projects and helps in monitoring their progress. The analysis conforms to the classification and terminology used in this Report. Supplementary information regarding causes for delay and strategy for improvement in project implementation has been obtained from the Ninth Five Year Plan documents.

At end-October 2001, there were 191 projects in the Central sector, each costing Rs. 100 crore and above on the monitoring system of PMD. Of these 191 projects, 36 were mega projects costing Rs.1,000 crore and above and the remaining 155 projects were major projects costing between Rs. 100 crore and Rs. 1,000 crore. Most of the projects were approved during 1990-2001, except 4 projects during 1970s and 16 projects during 1980s.

The original cost of 191 projects was estimated at Rs. 1,20,791 crore. 'Now anticipated cost' of these projects at Rs. 1,60,800 crore has gone up by 33.1 per cent over the original cost estimates. Sector-wise, power projects indicated maximum cost escalation (Rs. 16,725 crore), followed by railway projects (Rs. 10,783 crore). In contrast, there was no cost escalation in case of mines and telecommunications projects. Though health and family

Chart 1 : Sector-wise Cost Escalation in All CPS Projects

welfare projects showed the highest escalation in cost (390.8 per cent), followed by fertilisers projects (196.6 per cent) in percentage terms, their share in total cost escalation was not much significant. Petroleum and steel projects showed nominal cost escalation at 2.8 per cent and 4.4 per cent, respectively (Chart 1 and Table 1).

Table 1 : Sector-wise Cost Escalation in Central Public Sector Projects

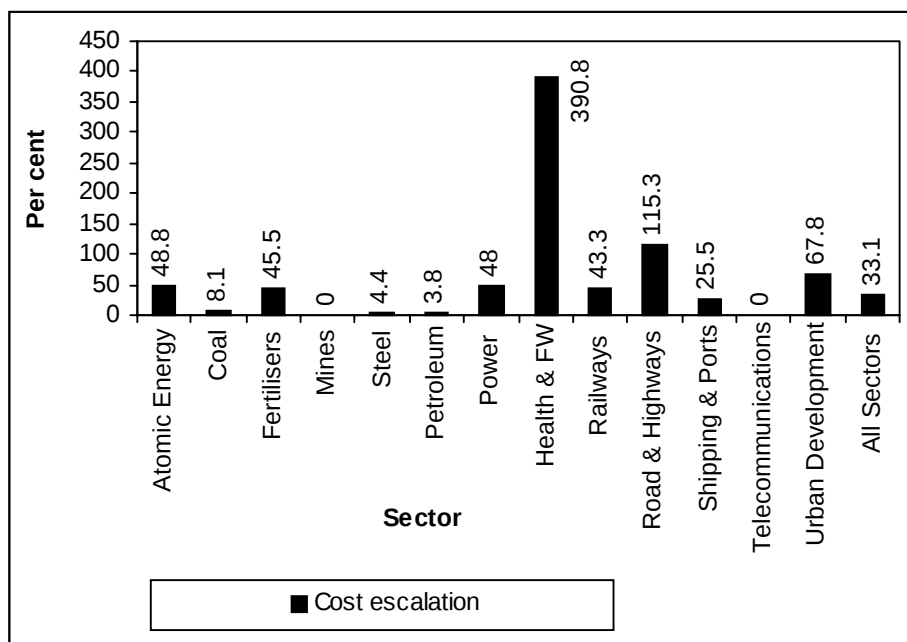
Sector	No. of projects on monitor	Original cost (Rs. crore)	Cost now anticipated (Rs. crore)	Cost escalation (Rs. crore)	Cost escalation (per cent)
Atomic Energy	3	7,785	11,582	3,797	48.8
Coal	12	7,972	8,615	643	8.1
Fertilisers	2	438	1,299	861	196.6
Mines	2	3,727	3,727	0	0.0
Steel	1	431	450	19	4.4
Petroleum	31	32,521	33,436	915	2.8
Power	29	34,819	51,544	16,725	48.0
Health & Family Welfare	2	141	692	551	390.8
Railways	89	23,594	34,377	10,783	45.7
Road Transport & Highways	10	1,483	3,193	1,710	115.3
Shipping & Ports	8	2,789	3,499	710	25.5
Telecommunications	1	231	231	0	0.0
Urban Development	1	4,860	8,155	3,295	67.8
All Sectors	191	1,20,791	1,60,800	40,009	33.1

Of the 191 projects on monitor, 'now anticipated date of commissioning' was available for only 124 projects. 'Now anticipated cost' of these projects at Rs. 1,29,580 crore has gone up by 33.1 per cent over the original cost estimates of Rs. 97,379 crore. Sector-wise, power projects showed highest cost escalation (Rs. 16,725 crore), followed by atomic energy projects (Rs. 3,797 crore). In contrast, there was no cost escalation in case of mines and telecommunications projects. In percentage terms, though health and family welfare projects indicated the highest cost escalation of 390.8 per cent, their share in total cost escalation was not much significant. Petroleum and steel projects showed moderate cost escalation of 3.8 per cent and 4.4 per cent, respectively (Table 2 and Chart 2).

Table 2 : Sector-wise Cost Escalation in Central Public Sector Projects with Now Anticipated Date of Commissioning (DOC)

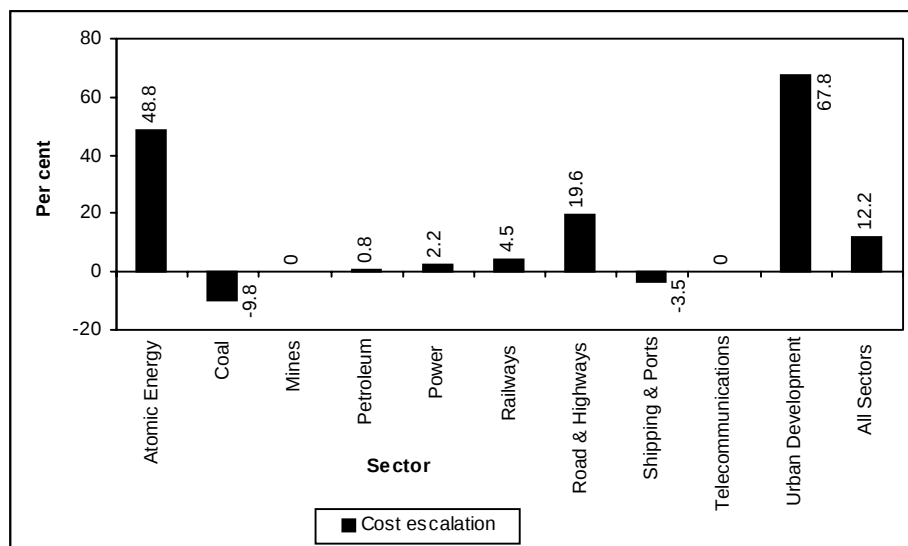
Sector	No. of projects	Original cost (Rs. crore)	Cost now anticipated (Rs. crore)	Cost escalation (Rs. crore)	Cost escalation (per cent)
Atomic Energy	3	7,785	11,582	3,797	48.8
Coal	12	7,972	8,615	643	8.1
Fertilisers	1	350	509	159	45.5
Mines	2	3,727	3,727	0	0.0
Steel	1	431	450	19	4.4
Petroleum	28	24,301	25,215	914	3.8
Power	29	34,819	51,544	16,725	48.0
Health & Family Welfare	2	141	692	551	390.8
Railways	26	8,490	12,168	3,678	43.3
Road Transport & Highways	10	1,483	3,193	1,710	115.3
Shipping & Ports	8	2,789	3,499	710	25.5
Telecommuni-cations	1	231	231	0	0.0
Urban Development	1	4,860	8,155	3,295	67.8
All Sectors	124	97,379	1,29,580	32,201	33.1

Chart 2 : Sector-wise Cost escalation in Projects with 'Now Anticipated Date of Commissioning'



Out of these 124 projects, 62 projects were 'ahead or on schedule' and the remaining 62 projects were delayed ones. Cost escalation in 62 projects 'ahead or on schedule' has been estimated at Rs. 7,617 crore or 12.2 per cent over the original cost estimates of Rs. 62,428 crore. Sector-wise, there was cost reduction in case of coal projects (9.8 per cent) and shipping and ports (3.5 per cent), while there was no cost escalation in case of mines and telecommunications projects. On the other hand, urban development projects recorded the highest cost escalation of 67.8 per cent, followed by atomic energy projects (48.8 per cent). Urban development (one project) and atomic energy (three projects) together accounted for the major portion of cost escalation in 'ahead or on schedule' projects (Chart 3 and Table 3).

**Chart 3 : Sector-wise Cost Escalation in Projects -
Ahead or on Schedule**



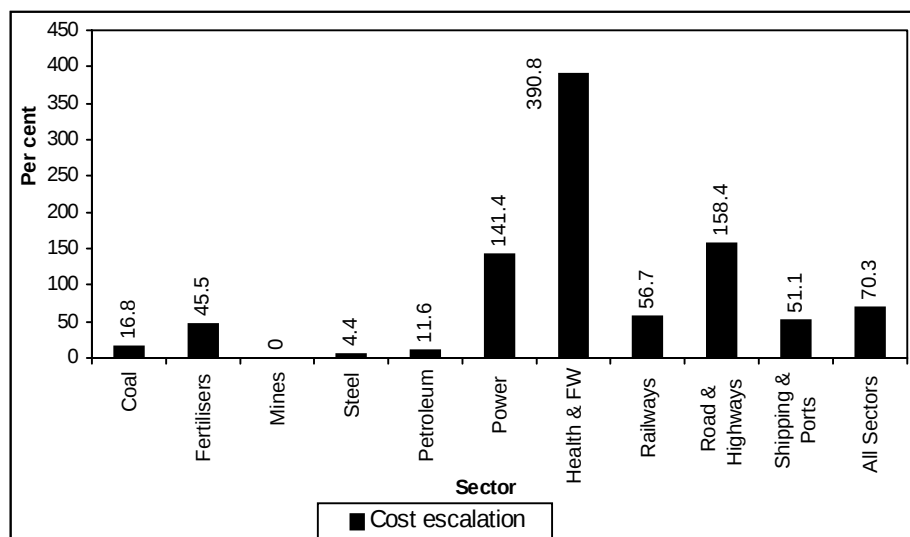
**Table 3 : Sector-wise Cost Escalation in Central Public
Sector Projects - 'Ahead or on Schedule'**

Sector	No. of projects	Original cost (Rs. crore)	Cost now anticipated (Rs. crore)	Cost escalation (Rs. crore)	Cost escalation (per cent)
Atomic Energy	3	7,785	11,582	3,797	48.8
Coal	4	2,615	2,359	(-) 256	(-) 9.8
Mines	1	2,062	2,062	0	0.0
Petroleum	23	17,580	17,712	132	0.8
Power	17	23,350	23,858	508	2.2
Railways	6	2,175	2,272	97	4.5
Road Transport & Highways	2	460	550	90	19.6
Shipping & Ports	4	1,310	1,264	(-) 46	(-) 3.5
Telecommuni- cations	1	231	231	0	0.0
Urban Development	1	4,860	8,155	3,295	67.8
All Sectors	62	62,428	70,045	7,617	12.2

The cost escalation in 62 delayed projects has been estimated at Rs. 24,584 crore or 70.3 per cent over the original cost estimates of Rs. 34,951 crore. The maximum cost escalation was noticed in power projects (Rs. 16,217 crore), followed by railway projects (Rs. 3,581 crore). On the other hand, there was no cost escalation in case of mines projects and moderate cost escalation of 4.4 per cent in case of steel projects. In percentage terms, though the highest cost escalation was in health and family welfare projects (390.8 per cent), their share in total cost escalation was not significant. Road transport and highways projects (158.4 per cent) and power projects (141.4 per cent) were the other sectors showing higher level of cost escalation (Table 4 and Chart 4).

Table 4 : Sector-wise Cost Escalation in Delayed Public Sector Projects

Sector	No. of delayed projects	Original cost (Rs. crore)	Cost now anticipated (Rs. crore)	Cost escalation (Rs. crore)	Cost escalation (per cent)
Coal	8	5,357	6,256	899	16.8
Fertilisers	1	350	509	159	45.5
Mines	1	1,665	1,665	0	0.0
Steel	1	431	450	19	4.4
Petroleum	5	6,721	7,503	782	11.6
Power	12	11,469	27,686	16,217	141.4
Health & Family Welfare	2	141	692	551	390.8
Railways	20	6,315	9,896	3,581	56.7
Road Transport & Highways	8	1,023	2,643	1,620	158.4
Shipping & Ports	4	1,479	2,235	756	51.1
All Sectors	62	34,951	59,535	24,584	70.3

Chart 4 : Sector-wise Cost escalation in Delayed Projects**Latest Position**

As per the latest 202nd Flash Report on Central Sector Projects (Costing Rs. 100 crore & above), the number of projects on the monitoring system of the Ministry of Statistics and Programme Implementation (MOSPI) has gone up to 275 projects by the end of August 2002 from 191 projects at the end of October 2001. During the period October 2001 to August 2002, some of the on-going projects have been completed, but many new projects have been started. As a result, there has been net addition of 84 projects on the monitoring system of the MOSPI. Accordingly, the original cost estimates of these projects have gone up from Rs. 1,20,791 crore at October-end 2001 to Rs. 1,60,186 crore at August-end 2002. Similarly, now anticipated cost estimates have also gone up from Rs. 1,60,800 crore at October-end 2001 to Rs. 1,99,539 crore at August-end 2002. Thus in absolute terms, the total cost escalation of these projects is estimated to be marginally lower at Rs. 39,353 crore at August-end 2002 as compared with Rs. 40,009 crore at October-end 2001. However, in percentage terms, the cost escalation of these projects is estimated

to be significantly lower at 24.6 per cent at August-end 2002 than 33.1 per cent at October-end 2001. This is due mainly to the expansion of the base (of original cost estimates from Rs. 1,20,791 crore in October 2001 to Rs. 1,60,186 crore in August 2002) on account of net addition of 84 new projects on the monitoring system of MOSPI during the period October 2001 to August 2002.

Section II

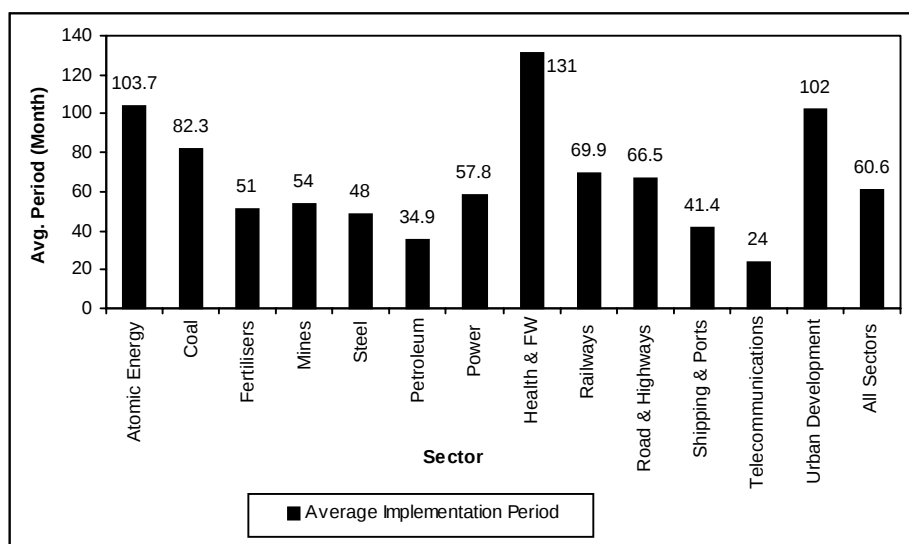
Typical Implementation Period in Various Sectors

At end-October 2001, there were 191 projects in the Central sector each costing Rs. 100 crore and above on the monitoring system of PMD. Of these, the 'original date of commissioning' (DOC) was available for 147 projects. The range of implementation period from the 'date of approval' to the 'original date of commissioning' varied from sector to sector and from project to project in the same sector and as such cannot be generalised. For example, in the atomic energy sector, the range of implementation period of 24-186 months indicates that the shortest project required 24 months for completion, while the longest project required 186 months for completion. Railway projects had the widest implementation range of 11-239 months, followed by atomic energy projects (24-186 months). The average implementation period was longest in case of health and family welfare projects (131 months), followed by atomic energy projects (103.7 months). The average implementation period was the shortest in case of telecommunications projects (24 months), followed by petroleum projects (34.9 months). The range of implementation period and the average implementation period for all these projects was 11-239 months and 60.6 months, respectively (Table 5 and Chart 5).

Table 5 : Sector-wise Typical Implementation Period in Public Sector Projects as per the Original Date of Commissioning (DOC)

Sector	No. of projects with original DOC	Range of implementation period (months)	Average implementation period (months)
Atomic Energy	3	24-186	103.7
Coal	12	36-135	82.3
Fertilisers	2	43-59	51.0
Mines	2	51-57	54.0
Steel	1	48	48.0
Petroleum	29	18-60	34.9
Power	29	24-96	57.8
Health & Family Welfare	2	108-154	131.0
Railways	47	11-239	69.9
Road Transport & Highways	10	49-99	66.5
Shipping & Ports	8	28-60	41.4
Telecommunications	1	24	24.0
Urban Development	1	102	102.0
All Sectors	147	11-239	60.6

Chart 5 : Sector-wise Typical implementation period as per Original DOC

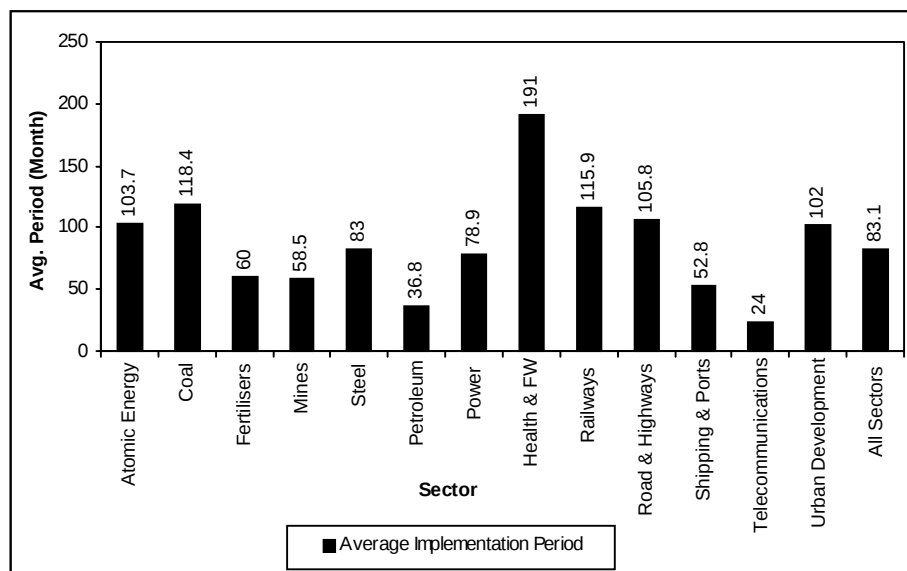


Of the 147 projects, the 'date of commissioning now anticipated' was available for only 124 projects. The range of implementation period and the average implementation period for these 124 projects, from the date of approval to the 'date of commissioning now anticipated', has gone up to 10-264 months and 83.1 months, respectively. Sector-wise, the average implementation period was the longest in case of health and family welfare projects (191 months), followed by coal projects (118.4 months) and railway projects (115.9 months) and the shortest in case of telecommunication projects (24 months), followed by petroleum projects (36.8 months). In case of power projects the average implementation period was 78.9 months (Table 6 and Chart 6).

Table 6 : Sector-wise Typical Implementation Period in Public Sector Projects as per the Date of Commissioning (DOC) Now Anticipated

Sector	No. of projects with 'DOC now anticipated'	Range of implementation period in projects (months)	Average implementation period (months)
Atomic Energy	3	24-186	103.7
Coal	12	61-195	118.4
Fertilisers	1	60	60.0
Mines	2	51-66	58.5
Steel	1	83	83.0
Petroleum	28	10-73	36.8
Power	29	24-253	78.9
Health & Family Welfare	2	156-226	191.0
Railways	26	52-264	115.9
Road Transport & Highways	10	79-203	105.8
Shipping & Ports	8	28-102	52.8
Telecommunications	1	24	24.0
Urban Development	1	102	102.0
All Sectors	124	10-264	83.1

Chart 6 : Sector-wise Average Implementation Period As Per DOC Now Anticipated

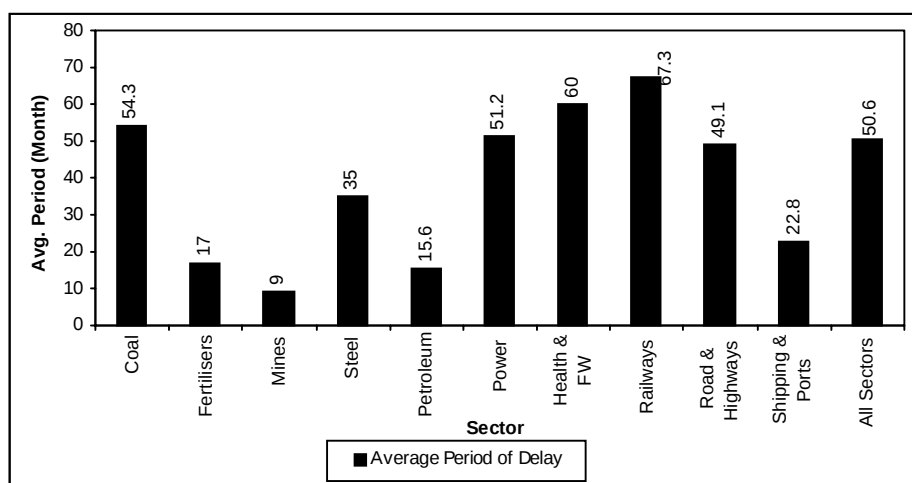


Delay in the implementation of projects on the basis of 'date of commissioning now anticipated' less the 'original date of commissioning' varied from project to project within the same sector as also from sector to sector. The range of delay varied from 9 months in case of mines projects to 0-132 months in case of road transport and highways. The average delay in the implementation of 62 delayed projects was estimated at 50.6 months. The maximum average delay was anticipated in the implementation of railways projects (67.3 months), followed by health and family welfare projects (60 months), while the minimum average delay was anticipated in case of mines projects (9 months), followed by petroleum projects (15.6 months). The average delay in case of power projects and road transport and highways was 51.2 months and 49.1 months, respectively (Table 7 and Chart 7).

Table 7 : Sector-wise Range of Delay (months) in Public Sector Projects as per the Original Date of Commissioning (DOC) and DOC Now Anticipated

Sector	No. of delayed projects	Range of delay in implementation of projects (months)	Average delay in implementation of projects (months)
Coal	8	0-96	54.3
Fertilisers	1	17	17.0
Mines	1	9	9.0
Steel	1	35	35.0
Petroleum	5	(-5)-52	15.6
Power	12	(-1)-77	51.2
Health & Family Welfare	2	48-72	60.0
Railways	20	(-3)-117	67.3
Road Transport & Highways	8	0-132	49.1
Shipping & Ports	4	0-42	22.8
All Sectors	62	(-5)-132	50.6

Chart 7 : Sector-wise Average Period of Delay in Projects

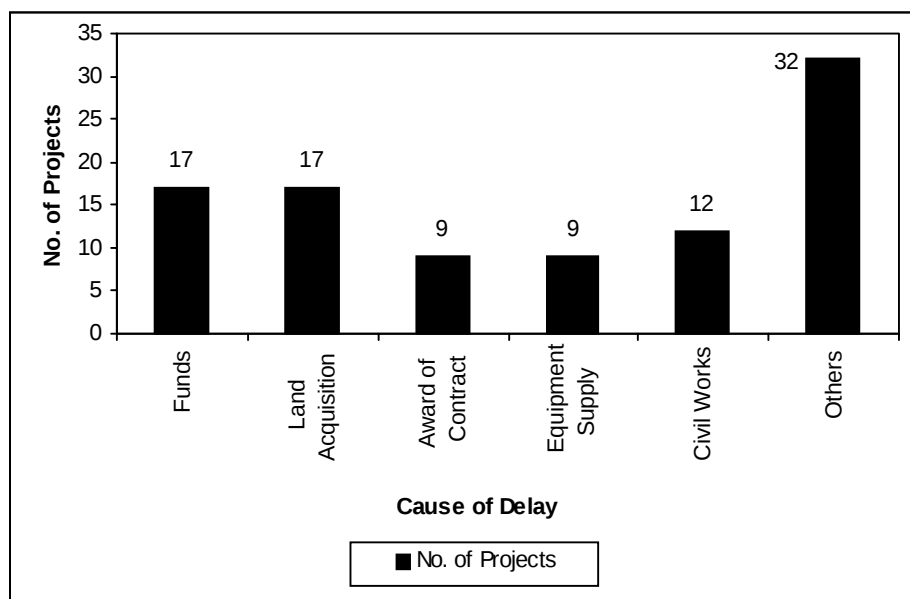


Section III

Causes behind Delay in Implementation

As mentioned earlier, there were 62 delayed Central public sector projects as at end-October 2001 out of 191 projects on the monitoring system of the Project Monitoring Division. Of these 62 delayed projects, information on causes for delay is available for 44 projects. The delay in the completion of these projects was mainly due to delay in release of funds, land acquisition, award of contract, equipment supply and carrying out civil works. Out of these 44 projects, 32 projects were delayed due to multiple reasons *i.e.*, more than one factor causing delay in the same project. Moreover, 17 projects were affected due to problems relating to funds, 17 projects due to land acquisition, 12 projects due to civil works, 9 projects due to equipment supply, 9 projects due to award of contract and 32 projects due to other reasons than these (Chart 8).

Chart 8 : Causes for Delay in Project Completion



Sector-wise, problems relating to funds affected the largest number of projects in railways (12), followed by road transport and highways (3). Land acquisition delayed maximum number of projects again in railways (10), followed by coal (2), power (2) and shipping and ports (2). Problems relating to award of contract were responsible for delay in the completion of 3 projects each in railways, road transport and highways. Equipment supply accounted for delay in completion of 4 projects in coal and 2 projects in railways. Civil works affected the largest number of projects in railways (4), followed by road transport and highways (3). In all, 32 projects were affected by problems other than funds, land acquisition, award of contract, equipment supply and civil works. Out of these, 11 projects belonged to railways, 7 projects to road transport and highways and 5 projects to power (Table 8).

Table 8 : Causes for Delay in the Project Completion*

(No. of projects)

Sector	Release of Funds	Land Acquisition	Award of Contract	Equipment Supply	Civil Works	Others	Total
Coal	1	2	1	4	1	3	7
Fertilisers	1	0	0	1	1	1	1
Steel	0	0	0	0	0	1	1
Petroleum	0	0	0	0	0	1	1
Power	0	2	0	0	2	5	6
Health and Family Welfare	0	0	1	0	1	0	1
Railways	12	10	3	2	4	11	17
Road Transport and Highways	3	1	3	1	3	7	7
Shipping and Ports	0	2	1	1	0	3	3
All Sectors	17	17	9	9	12	32	44

* : The delay in many projects was due to multiple reasons. Hence, item-wise sub-totals will not add up to the total number of projects delayed.

In addition to the factors cited above, Ninth Five Year Plan (1997-2002) documents based on past experience also attributed

delay in the completion of development projects to the following factors:

- (i) Poor project formulation due to inadequate field investigation, lack of adequate data, inadequate analysis of environmental and rehabilitation implications, changes in prices and exchange rate regimes.
- (ii) Delays in clearance from various regulatory agencies in land acquisition and procurement of materials. Such delays were primarily due to poor co-ordination and project planning, as these problems are not explicitly considered or taken into account at the planning stage.
- (iii) Changes in design and scope of projects midway through execution.
- (iv) Inability of the project management to take prompt decisions on various aspects of these projects even when the objective circumstances warrant such decisions.
- (v) Management problems such as personnel, labour and contractor disputes, mis-match of equipment, *etc.*
- (vi) Inadequate and untimely release of funds.
- (vii) Unforeseen factors such as adverse geo-mining conditions and natural calamities.

Delay in the implementation of projects at various points such as land acquisition, award of contract, civil works and equipment supply is project-specific and differs from project to project and sector to sector. Project-wise information on duration of delay at each point, *i.e.*, how much delay took place due to a particular reason is available for only 12 projects, where the delay was caused by a single factor. Of these, 3 projects in railways got delayed due to paucity of funds (average delay being 63 months), one project in power due to land acquisition related problems (77 months) and two projects in coal, one due to delay in award of contract (78 months) and another due to delay in equipment supply

Table 9 : Average Delay in Implementation of Projects with Single Factor as Cause of Delay

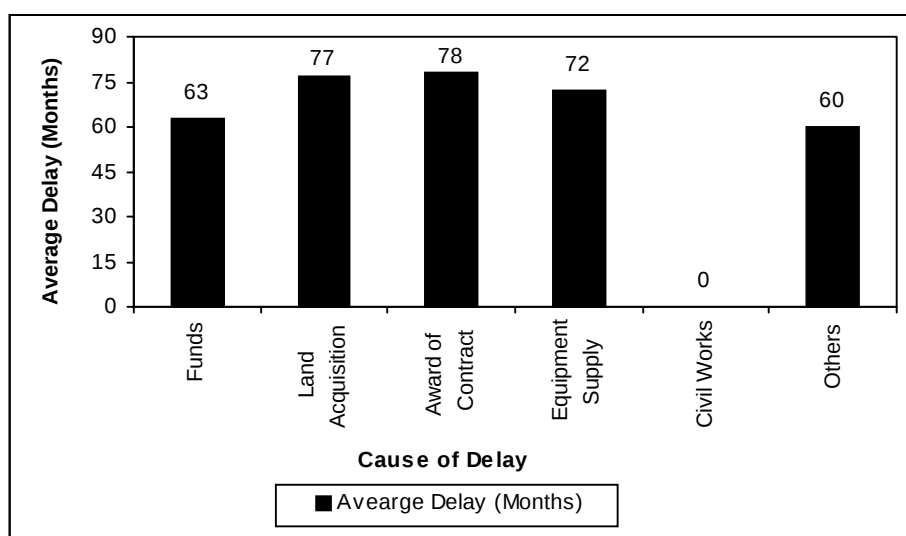
(Months)

Sector	Release of Funds	Land Acquisition	Award of Contract	Equipment Supply	Civil Works	Others
Coal	0	0	78 (1)	72 (1)	0	0
Steel	0	0	0	0	0	35 (1)
Petroleum	0	0	0	0	0	52 (1)
Power	0	77 (1)	0	0	0	79 (3)
Railways	63 (3)	0	0	0	0	0
Road Transport and Highways	0	0	0	0	0	36 (1)
Average Delay	63 (3)	77 (1)	78 (1)	72 (1)	0	60 (6)

Note: Figure in brackets indicates number of projects.

(72 months). Of the remaining 6 projects, 3 projects in railways (average delay being 79 months), one each in steel (35 months), petroleum (52 months), and road transport and highways (36 months) were delayed due to other reasons (not specified) (Table 9 and Chart 9).

Chart 9 : Average Delay in Implementation of Projects (with single factor as cause of delay)



Project-wise information on duration of delay at each point is not available for those projects in which there were multiple reasons for delay. However, review of some projects with substantial time and cost overruns to identify activity-wise delays, type of cost overruns and the reasons thereof have been discussed in the Ninth Five Year Plan documents. In a coal washery project with a time overrun of 10 years, the activity-wise time overruns and the reasons thereof were: 4 years and 6 months in land acquisition owing to litigation and law and order problem; 1 year and 6 months in land filling work (not envisaged at the planning stage) due to poor planning; and 4 years due to non-fulfillment of contractual obligations. About 94 per cent of the cost overrun of the project was accounted for by these delays.

Section IV

Suggestions for Improvement in Project Implementation

Suggestions for improvement in time and cost overruns in public sector projects, discussed in various fora are as following :

(i) There is a need for better prioritisation of Plan projects. On-going projects, in preference to new projects, should have the first charge on the Department's budgetary allocations so as to optimise on early completion of incomplete projects. The Ministry of Finance and the Planning Commission have already initiated suitable actions in this regard. Some of the measures being proposed include shelving of projects which have not made substantial progress in terms of physical and financial targets and according priority to projects which are at an advanced stage of completion.

(ii) Improving the quality of projects 'at entry' point is essential for reducing time and cost overrun of projects. This calls for scientific approach to project planning. A number of steps are required for improving project planning. First, the organisations responsible for project design must be made sensitive to the factors that generally contribute to time and cost overruns through dissemination of the findings of ex-post evaluation of projects so

that adequate attention is paid at the planning stage itself to prevent their recurrence. Second, there is a need for capacity building of these organisations through training and interactions with technical institutes. Third, inter-agency co-ordination must begin with the project preparation itself, so as to minimise the procedural delays later.

(iii) The detailed procedures for submission, examination and approval of projects need to be reviewed and clearly defined limits should be set in terms of project cost and processing time for approval by various agencies. Though the Government has taken a decision in this regard, it is necessary to review the capacity of the agencies in terms of both staff and technical competence so as to ensure that clearance is given only after detailed scrutiny of the proposals.

(iv) There is a need for an appropriate manpower management policy for effective project implementation. Short tenure of key project staff, inadequate provision of technical and administrative personnel for projects and lack of training of project staff affect project implementation. Selection of key project staff must precede project implementation and their continuity should be ensured during implementation. Training of project staff at all stages of the project cycle is also needed.

(v) Adoption of a simplified procedure for acquisition of land is required to avoid time and cost overrun of projects. If the resettlement cost assessment is realistic, much of the delays associated with land acquisition can be eliminated. Appropriate guidelines for cost-benefit analysis of the project must be formulated for realistic assessment of the financial and economic rates of return and the issues relating to subsidy and pricing of project output/service must be brought upfront. The Planning Commission should review the existing guidelines and effect necessary changes, if required.

(vi) Project authorities should be more autonomous and less dependent on Ministries for procedural approval of various types.

This would require some binding arrangements with the financial institutions for loan-financing of projects. This switch-over will eventually give rise to a new dimension for repayment. This, in turn, will include the policy makers to focus attention on policy reforms and cost recovery, and consequently, make the project entities more cost-conscious. It may also help in moving towards privatisation of some project entities.

(vii) The issues of cost recovery, loan repayment and cost consciousness are also relevant in the context of sustainability of project output, which has been affected due to lack of maintenance of capital equipment and infrastructure. The issue of sustainability should be addressed clearly at the planning stage itself and within a broad policy framework and authority needs to be delegated to the agencies responsible for project operation and maintenance for setting economic prices and fees. The agencies responsible for project appraisal must ensure that the issue of sustainability of output has been adequately addressed in the project proposals.

(viii) The trends in macro-economic variables and the policy evolution, including socio-political changes have to be considered in preparing projects, estimating costs and working out financial and economic returns. Changes in interest rates, exchange rates, fiscal deficit and inflation rate influence the project outcome in different ways. Explicit consideration of these aspects is required in working out the project viability.

(ix) Monitoring and evaluation are important components of investment management. Ministry of Statistics and Programme Implementation provides the information on delays. However, currently, adequate follow-up action is usually not taken on monitored information, partly because of the inability of the project management to take prompt action and partly due to non-adherence to the accountability criteria. With the delegation of authority to the project management to resolve all implementation related problems within the authority of the Ministry/Department and strict adherence to accountability, the monitoring system is likely to be effective. All large projects must be post-evaluated and the cost of

such studies should form a part of the project cost. The findings of such studies need to be discussed in seminars and given publicity to generate awareness among project managers, planners and policy makers about the problems in design and implementation and to draw lessons thereof.

(x) Deficiency in contract management has been a major cause for time and cost overrun. Lack of transparency in contract document, lack of professionalism in the project management and inadequate delegation of authority cause most of the disputes and delays. The weaknesses in the legal system also stand in the way of speedy disposal of disputes. Apart from building the capacity and skill of the project management, there is a need for suitable amendments to laws so as to ensure speedy disposal of cases.

It may be mentioned that in recent years there has been progress in reducing delays. As an apex institution for monitoring, the Ministry of Statistics and Programme Implementation (MOSPI) has initiated several measures to improve the system and procedure relating to project formulation, implementation and monitoring. The Project Monitoring Division (PMD) of the MOSPI has strengthened the institution of Memorandum of Understanding (MoU) system, 3-tier regular monitoring, adoption of network-based monitoring, extensive training of project managers, prioritisation of projects matching with available resources and several project-based interventions. A host of other measures such as Land Acquisition Act, development of Standard Rehabilitation Package, On-line Computerised Monitoring System and formation of Standing Committee in various Ministries for fixation of responsibilities for time and cost overruns are under progress. This should lead to a decline in time and cost overruns in projects.

Section V

Concluding Observations

Time and cost overruns in Central public sector projects have been quite substantial. Delay in the implementation of projects at

various points such as land acquisition, award of contract, civil works, equipment supply, *etc.*, is project-specific and sector-specific and varies from project to project and sector to sector as discussed above. The findings of diagnostic evaluation studies/ reviews undertaken by the Planning Commission also lend support to the observations about the factors causing time and cost overruns. However, what is important to note is that factors like land acquisition/ rehabilitation, obtaining clearances, non-fulfillment of contractual obligations by both public sector units and private contractors, inadequate and untimely release of funds and inadequacies in tender documents contribute more often to the greater part of the time and cost overruns of public sector projects. These problems arise due to inadequacies in approval procedures and implementation.

Project planning has, therefore, to be more scientific and approval procedures more realistic to ensure that avoidable time and cost overruns are much less frequent. The approval procedure should be linked with early completion of incomplete projects and sustainability of project output. Because of unrealistic approval procedure, many of the projects are delayed. At the other extreme, less stringent approval procedures encourage a tendency to get too many projects cleared without the requisite financial resources in sight. There is, thus, a need for striking a balance between these extremes. It is important to ensure that rigour in appraisal and planning does not itself become a cause of delay because of repetitive and multi-level examination of technical and economic data. Strict time-tables need to be laid down for completion of the approval processes and preliminary work. Similarly, strict financial procedures should be formulated for eliminating projects, which do not have financial backing. Time-bound clearances at different stages and effective inter-agency co-ordination would cut down time and cost overruns considerably. There is also need for keeping track of the progress in implementation and taking necessary corrective actions, as the progress may be affected by unforeseen factors. Thus, monitoring and evaluation system must be strengthened and the implementing agencies must be made accountable for non-adherence to the plan of work. The Ministry

of Statistics and Programme Implementation is reported to have already started implementation of some of these suggestions, and this process if carried forward, should help in minimising delays and cost escalation in the implementation of Central public sector projects.

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