

Delay and Cost Escalation in Central Public Sector Projects

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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.

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

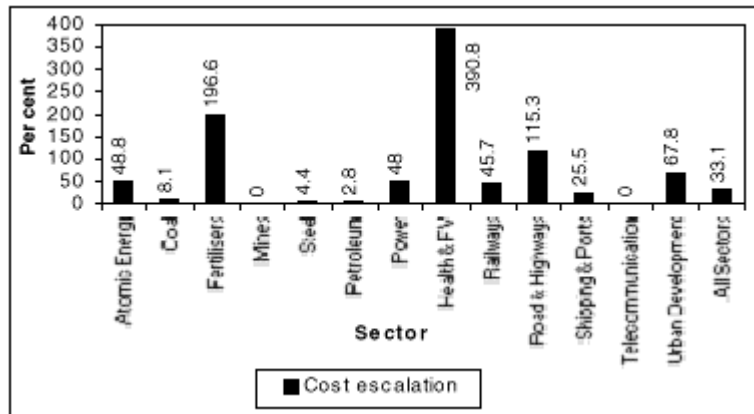
The study is based on 192nd Flash Report on Central Sector Projects (costing Rs. 100 crore and above) for the month of October 2001, released by the Ministry of Statistics and Programme Implementation (MOSPI), Government of India. The Project Monitoring Division (PMD) is a Division in the MOSPI that 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).

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



In contrast, there was no cost escalation in case of mines and telecommunications projects. Though health and family 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

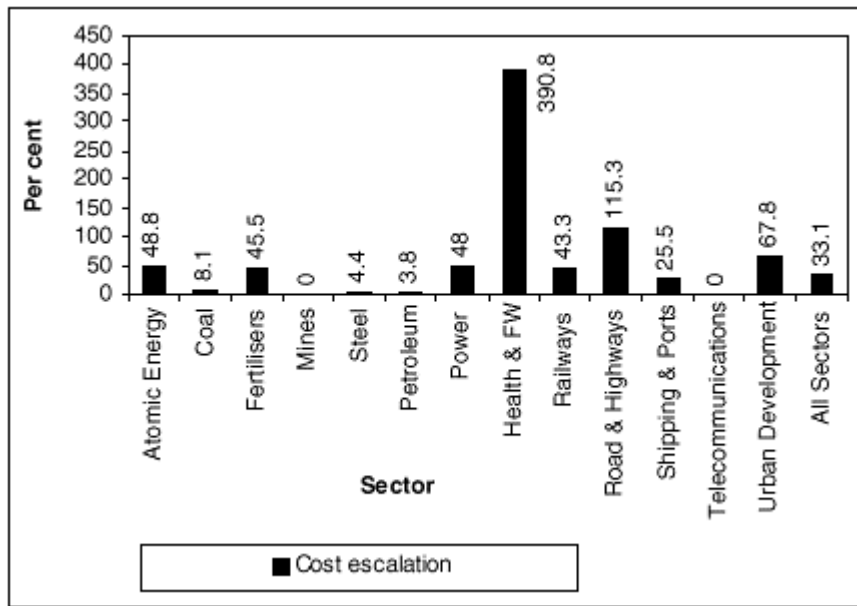
Sector	No. of projects on monitor	Original cost (Rs. crore)	Cost now anticipated (Rs. crore)	Cost escalation (Rs. crore)	Cost escalation (per cent)
Atomic Energy	3	7,785	11,582	3,797	48.8
Coal	12	7,972	8,615	643	8.1
Fertilisers	2	438	1,299	861	196.6
Mines	2	3,727	3,727	0	0.0
Steel	1	431	450	19	4.4
Petroleum	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
Telecommunications	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

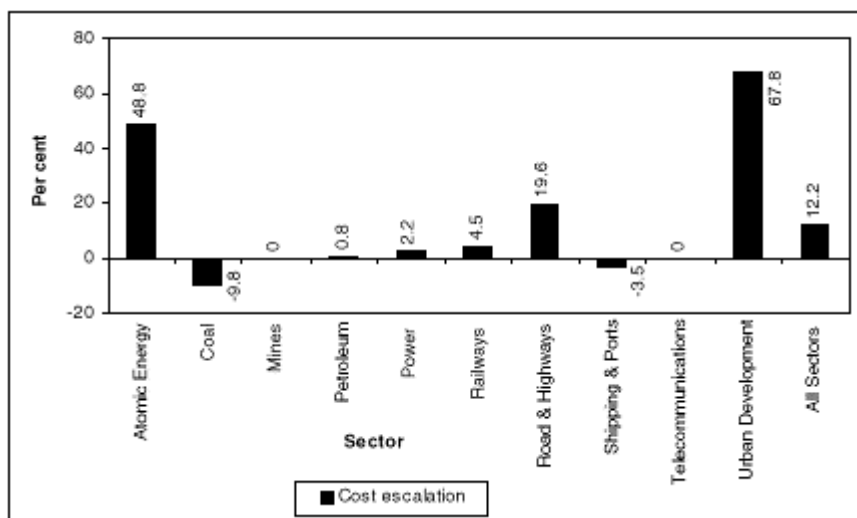


Table 3 : Sector-wise Cost Escalation in Central Public Sector Projects - 'Ahead or on Schedule'

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

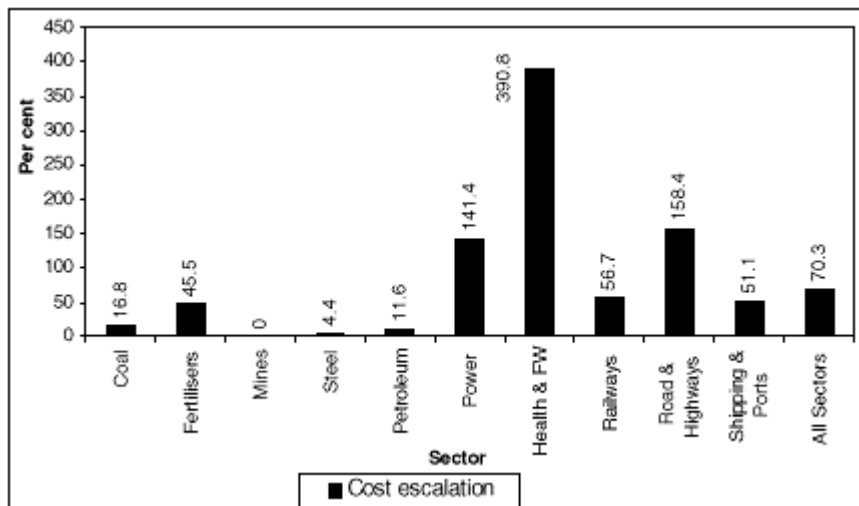
The cost escalation in 62 delayed projects has been estimated at Rs. 24,584 crore or 70.3 per cent over the original cost estimates of Rs. 34,951 crore. The maximum cost escalation was noticed in power projects (Rs. 16,217 crore), followed by railway projects (Rs. 3,581 crore). On the other hand, there 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.

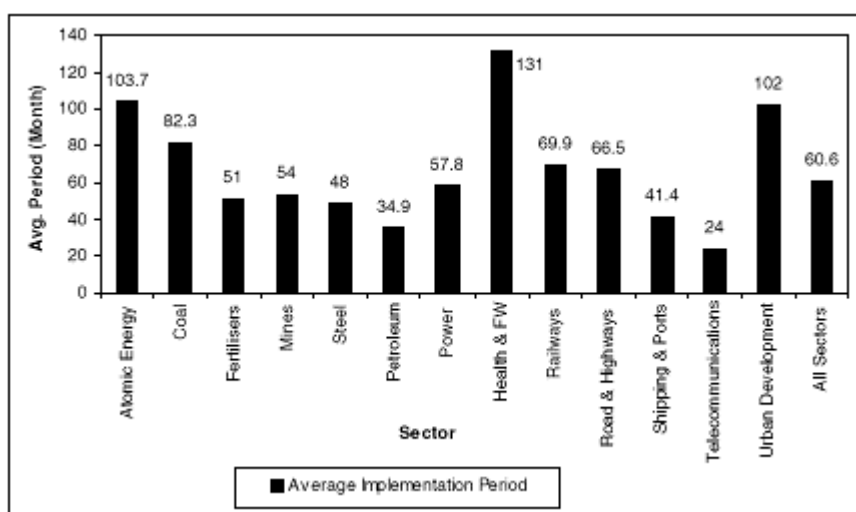
Section II Typical Implementation Period in Various Sectors

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



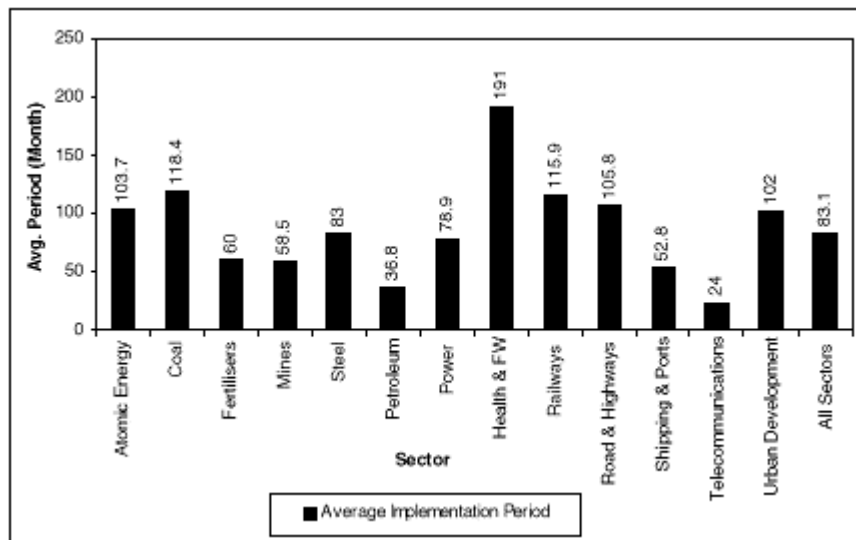
Of the 147 projects, the 'date of commissioning now anticipated' was available for only 124 projects. The range of implementation period and the average implementation period for these 124 projects, from the date of approval to the 'date of commissioning now anticipated', has gone up to 10-264 months 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



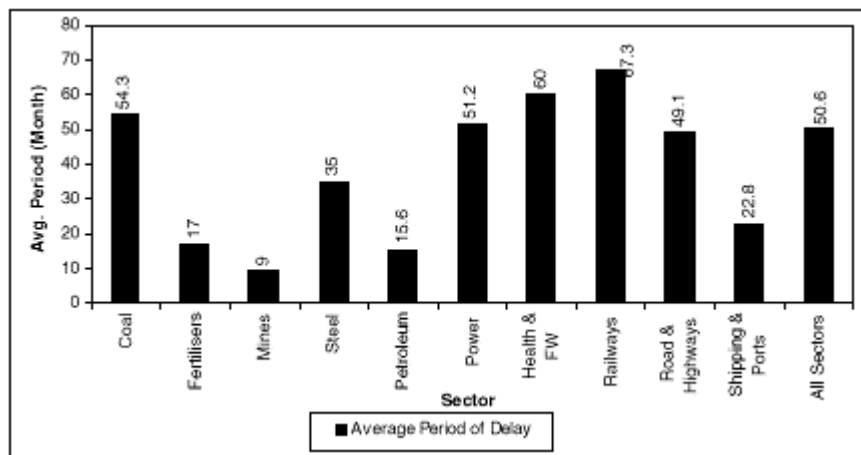
Delay in the implementation of projects on the basis of 'date of commissioning now anticipated' less the 'original date of commissioning' varied from project to project within the same sector as also from sector to sector. The range of delay varied from 9 months in case of mines projects to 0-132 months 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

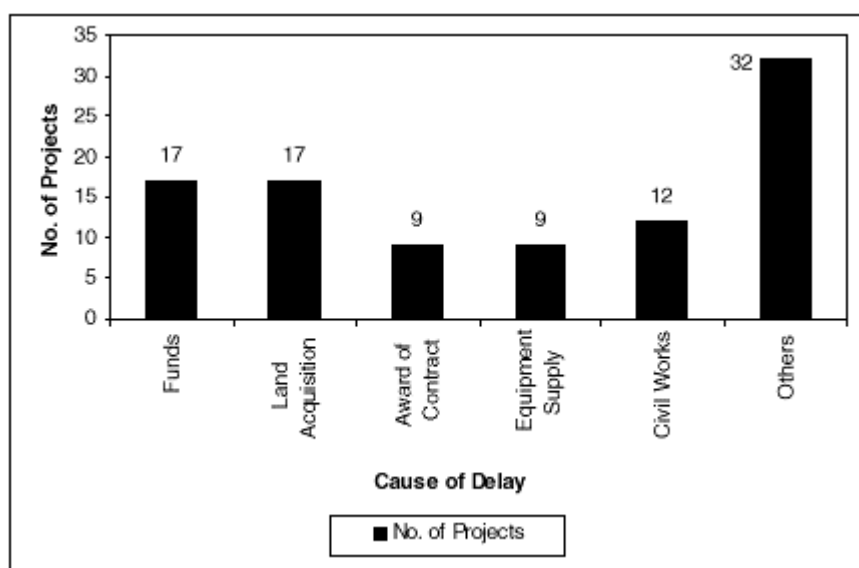
Chart 7 : Sector-wise Average Period of Delay in Projects



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*

Sector	(No. of projects)						Total
	Release of Funds	Land Acquisition	Award of Contract	Equip-ment Supply	Civil Works	Others	
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 (72 months).

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

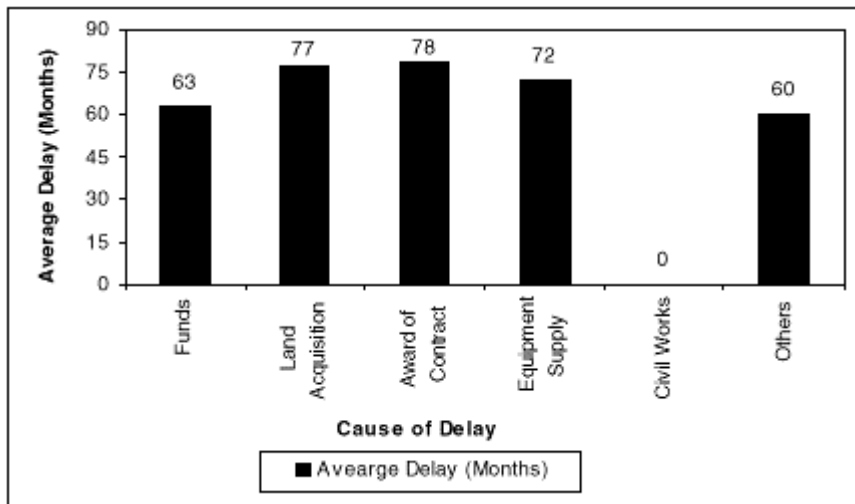
Sector	(Months)					
	Release of Funds	Land Acquisition	Award of Contract	Equipment Supply	Civil Works	Others
Coal	0	0	78 (1)	72 (1)	0	0
Steel	0	0	0	0	0	35 (1)
Petroleum	0	0	0	0	0	52 (1)
Power	0	77 (1)	0	0	0	79 (3)
Railways	63 (3)	0	0	0	0	0
Road Transport and						

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.

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.

References

Government of India (1997): "*Ninth Five Year Plan, 1997-2002, Vol. 1*", Planning Commission, New Delhi.

Government of India (2001): "*192nd Flash Report on Central Sector Projects (Costing Rs. 100 Crores & Above)*", Ministry of Statistics and Programme Implementation, New Delhi, October.

Government of India (2002): "*202nd Flash Report on Central Sector Projects (Costing Rs. 100 Crores & Above)*", Ministry of Statistics and Programme Implementation, New Delhi, August.

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