

CHAPTER-6

COST-REVENUE RELATIONSHIPS WITHIN PORT ACTIVITIES

6.1 Introduction

The previous chapter made a study of revenue and cost, trends, both in isolation and in relation to traffic and to activity-wise classification. Such study alone is however not enough since effective conclusions cannot be drawn about the surplus/deficit on account of each activity class. Such wider conclusions would provide better indicator of financial performance of major ports as the contribution from each port service to the overall surplus/deficit would be revealed. For such purposes the relationship between revenue and expenditure within each category of services provided by the ports forms the focus for this chapter.

6.2 Operating Items

Functional classification of operating revenue and expenditure at all major ports groups these under the four major heads mentioned earlier, namely, cargo handling and storage; port and dock facilities; railway workings; and estates. Expenditure on management and general administration is indicated separately, as it is not attributable to any particular activity. For the purposes of this study, management and general administration expenditure is apportioned among the four functional heads on the basis of revenues accruing from them.

Expenditures at selected major ports on each service as a percentage of income from that service over the period from 1980-81 to 1991-92 as shown in Table 6.1. The table indicates that *cargo handling and storage* have been the most paying services. At all major ports including Calcutta, revenues derived from cargo handling and storage charges were far in excess of expenditures incurred on them over the entire period of study. While expenditure on cargo handling and storage services constituted between 47 percent and 67 percent of revenues thereof at Calcutta Port, in the case of Bombay, Madras and Visakhapatnam Ports, the range was between 53 to 66 percent in Bombay, 46 to 67 percent at Madras, and 40 to 62 percent at Visakhapatnam ports.

At the opposite end, expenditures incurred in providing *port and dock services* at Calcutta Port were far in excess of revenue derived from them throughout the study-period, with a low of 110 percent occurring in 1981-82 and a high of 128 percent in 1983-84 (except in 1984-85 and 1985-86). For Bombay Port too, port and dock facilities had been a losing proposition. Madras Port, on the other hand, experienced the reverse. Port and dock facilities here, generated surpluses without exception throughout the period of study. At Visakhapatnam Port, port and dock facilities showed a mix of surpluses and deficits.

Table 6.1

Expenditure of Selected Major Ports on Each Service as Percentage of Income from that Service (1980-81 to 1991-92)

Port/Service	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92
Calcutta Port:												
Port and Dock Facilities	117	110	113	128	115	123	122	115	113	120	115	126
Cargo Handling and Storage	59	58	50	61	49	63	58	67	48	47	50	51
Railways	237	222	197	151	205	193	181	167	165	163	140	122
Estate Rentals	56	47	52	70	58	54	72	73	62	60	60	61
Bombay Port:												
Port and Dock Facilities	110	114	119	106	92	93	107	117	108	102	119	113
Cargo Handling and Storage	53	53	53	62	59	60	64	66	58	56	55	59
Railways	299	351	420	377	553	497	409	459	476	467	497	479
Estate Rentals	44	48	40	31	33	34	38	42	40	150	135	116
Madras Port:												
Port and Dock Facilities	94	91	97	91	78	71	82	71	85	85	83	70
Cargo Handling and Storage	58	61	65	67	49	50	49	54	46	49	48	52
Railways	84	102	121	96	88	82	80	68	59	62	66	62
Estate Rentals	149	236	150	167	224	133	225	151	156	81	74	65
Visakhapatnam Port:												
Port and Dock Facilities	119	135	140	144	101	88	100	122	88	82	92	106
Cargo Handling and Storage	59	57	61	62	53	48	55	60	56	40	53	52
Railways	175	147	138	160	141	184	113	103	94	99	97	100
Estate Rentals	124	112	78	73	58	72	82	73	93	107	88	163

Source : Compiled and Calculated from Administration Reports and Annual Accounts of Respective Ports for the above years

Deficits are seen to have been a regular feature in *railway workings* at Calcutta, Bombay and Visakhapatnam Ports throughout the period of study. In 1991-92 the expenditure on railways was 122 percent of revenue from that service at Calcutta Port, 479 percent at Bombay Port, and just equivalent to revenue at Visakhapatnam Port. Madras Port was in a relatively better position as in most years income from this head surpassed expenditure.

With respect to *port estates*, Calcutta Port showed a significantly better picture compared to other major ports, generating surpluses throughout the period of study. At the next position was Bombay Port which also showed surpluses before 1989-90, the more recent trend being in favour of deficits. At Madras, port estates were a losing area till 1988-89, after which they turned around to become a paying activity till the end of the study-period. The position at Visakhapatnam Port was generally of surpluses in peak years and deficits in others, with the most recent trend being towards deficits.

The foregoing analysis indicates activities at ports on which surpluses or deficits have been registered. It suffers however from one serious limitation. Since it is in relative terms, it does not indicate the actual quantum of contribution each activity is making to the overall operating surplus for the year. Hence an attempt is made in the following section to assess in absolute terms the profitability or otherwise of the main port activities i.e., cargo handling and storage, port and dock services, port railways and port estates, as also reasons thereof.

6.2.1 Cargo Handling and Storage

Cargo handling and storage charges contribute a major share from charges realised to port revenues. As expenditure too, they are the major component and are also most paying service rendered at all major selected ports, as shown earlier. Handling and storage charges on general cargo, storage of goods in warehouses, crantage, lighterage, POL handling charges, demurrage fees on general cargo, and other miscellaneous charges are all included in this category.

Table 6.2 presents the economics of *cargo handling and storage* activities at Calcutta Port over the study-period. The table also shows in percentage form, the contribution of surplus from this service to total operating surplus. It is apparent from the table that the activity has been able to meet cost of operations and leave a substantial surplus in all years of study. This surplus commenced at Rs. 22.04 crores in 1980-81 rising slowly to Rs. 24.57 crores in 1987-88, and then jumped to Rs. 64.06 crores in the very next year, eventually reaching Rs. 80.47 crores in the last year of study 1992-93. The service has thus been making an enormous contribution to the overall operating surplus of the port. This is borne out by the percentage contributions of this surplus to total operating surplus. What is of even more interest is that these have been more than 100 percent through the entire period under study which implies that surplus on cargo handling and storage activity has actually exceeded total operating surplus. In 1985-86, it was in fact more than double of the total operating surplus. The overall implication of such high percentages is that surpluses earned on this account have been partly swallowed up by losing activities. However the percentage of surplus on cargo handling and storage is found to decline towards the end of the study, due both to the rising surplus on other port activities, as well as a tapering off in the rate of growth of the surplus on cargo handling and storage. Maximal growth of the surplus was achieved in 1988-89.

Table 6.2
Economics of the Activity 'Cargo Handling and Storage' in Calcutta-Haldia Port
(1980-81 to 1992-93)

(Rs.crores)

Year	Revenue	Expenditure	Surplus total operating	% of Surplus to Surplus.
1980-81	53.79	31.75	22.04	163
1981-82	58.43	33.85	24.58	132
1982-83	75.22	37.34	37.88	127
1983-84	63.30	38.47	24.83	196
1984-85	86.95	42.54	44.41	128
1985-86	71.62	45.33	26.29	203
1986-87	82.32	47.39	34.93	173
1987-88	73.72	49.15	24.57	217
1988-89	124.24	60.18	64.06	118
1989-90	136.00	63.72	72.28	124
1990-9	146.26	72.50	73.76	114
1991-92	142.98	72.33	70.65	129
1992-93	157.76	77.29	80.47	115

Source : Compiled and Calculated from Administration Reports and Annual Accounts of Calcutta-Haldia Port for the above years

Support for the above remarks is found in the following table which reveals the dominance of this activity over total operating surplus.

Table 6.2.1
Surplus on Cargo Handling and Storage Activities
In Relation to Total Operating Surplus
During 1980-81 to 1992-93

(Rs.crores)

Year	Total operating Handling and Storage'	Surplus on 'Cargo
1980-81	13.49	22.04
1981-82	18.68	24.58
1982-83	29.75	37.88
1983-84	12.65	24.83
1984-85	34.80	44.41
1985-86	12.94	26.29
1986-87	20.14	34.93
1987-88	11.30	24.57
1988-89	54.07	64.06
1989-90	58.25	72.28
1990-91	64.87	73.76
1991-92	54.62	70.65
1992-93	70.04	80.47

Source : Compiled and Calculated from Administration Reports and Annual Accounts of Calcutta-Haldia Port for the above years

The table indicates that at CHP, the surplus from *cargo handling and storage* activities was greater than the total operating surplus generated by all port activities throughout the study-period. "All activities' here mean cargo handling and storage, port and dock operations, railway operations and estate rentals. In 1980-81, where the total operating surpluses were of the order of Rs. 13.49 crores, the amount of surplus from cargo handling and storage activities was Rs.22.04 crores. Similarly, in the last year of study-period 1992-93, total operating surpluses stood at Rs.70.04 crores against a surplus of Rs.80.47 crores from cargo handling and storage. The performance in the years 1984-85 and 1988-89 was particularly satisfactory because of the sharp increase in proportionate surplus from this activity relative to the immediately previous year.

Table 6.3
Surplus on the Activity 'Cargo Handling and storage' in selected Major Ports
(1980-81 to 1992-93)

(Rs.crores)

Year	Bombay Port		Madras Port		Visakhapatnam Port	
	Surplus	% of Surplus to total op. Surplus	Surplus	% of Surplus to total op. Surplus	Surplus	% of Surplus to total op. Surplus
1980-81	30.10	96	12.88	95	10.66	142
1981-82	37.01	102	12.63	98	12.22	148
1982-83	42.33	94	12.50	104	10.82	157
1983-84	30.17	71	13.39	95	11.50	159
1984-85	40.90	75	32.10	92	19.17	100
1985-86	44.04	77	35.23	87	24.00	104
1986-87	38.99	82	37.79	91	24.06	102
1987-88	41.17	93	33.65	81	21.14	113
1988-89	63.80	87	48.07	87	30.84	89
1989-90	75.92	122	50.10	87	48.25	92
1990-91	83.43	131	55.74	86	34.61	92
1991-92	79.64	129	54.14	77	40.77	110
1992-93	NA	-	NA	-	NA	-

Note : NA denotes Not Available

Source : Compiled and Calculated from Administration Reports and Annual Accounts of Respective Ports for the above years

Assessment of the comparative position *vis-a-vis* cargo handling and storage activities at other major ports is made through Table 6.3. For Bombay Port, the surplus on this account commenced at Rs. 30.10 crores in 1980-81, and eventually rose to Rs. 79.64 crores, increasing more than two and half times over the study-period. However, unlike at Calcutta Port, surpluses from this activity - although generally higher in magnitude - tended to be lower than total operating surpluses until 1988-89, and only exceeded them after 1989-90.

Surpluses from cargo handling and storage at Madras Port have been quite substantial in terms of quantum, although lower than total operating surplus earned by the Port, except in 1982-83. Visakhapatnam Port was in a better proportionate position because surpluses from the activity stayed above total operating surplus except between 1988-89 to 1990-91. However, the magnitude of the surplus from cargo handling and storage was considerably lower than that at other major ports over the period.

The analysis just concluded is based on cargo handling and storage operations, and therefore does not identify individual characteristics of cargo handling operations at each port. Revenue and cost in respect of cargo handling vary considerably from cargo to cargo. Revenues from the handling of POL products for example are substantially higher than the costs incurred on handling these. As a result, a port handling a large proportion of POL traffic will derive a substantial surplus from this. Conversely, ports having to handle iron ore traffic need to spend huge sums on iron ore handling costs. For the ports of Calcutta and Haldia, the principal imports are POL products constituting 46 percent of total imports at CDS and 68 percent at HDC, or 49 percent of total traffic (imports + exports) for the Port as a whole, and this obviously reflects in the financial surpluses of the Port under this head. Conversely, the fact that POL-handling is much less at Madras (39% of traffic) and Visakhapatnam (33% of traffic) [see Table 3.12], lends a lot of credence to their performance, since they do not therefore enjoy the intrinsic cost advantages that specialisation in POL-handling give to Calcutta and Bombay Ports, and at the same time account for around 16 percent each of the total iron-ore traffic from Indian major ports.

Certain suggestions now offer themselves regarding cargo handling and storage activities at Calcutta Port. Delays in clearance of cargo from the Port sometimes occur due to shortage of railway wagons and paucity of storage space. This can not only affect the efficiency of port operations but may also result in loss of foreign exchange to Government in the form of demurrage and detention charges to ships. To circumvent this, the number of rail wagons needs to be increased and more warehouses need to be built. The tendency has also been observed for consignees to keep their shipments at the port for unduly long periods since storage charges are relatively low. Non-clearance of cargo on such grounds uses up storage and is therefore detrimental to efficient port operation. It has therefore been suggested that demurrage charges be raised to punitive levels so as to act as a deterrent to such non-clearances. Storage charges themselves could similarly be raised to augment port revenues.

6.2.2 Port and Dock Services

Port and dock services occupy next place after cargo handling and storage facilities in terms of their order of importance in port operations. Port services such as pilotage, towage, berthing, mooring, water supply to ships and dry dock facilities are all included in this category.

Table 6.4 presents the economics of *port and dock services* at Calcutta Port over the period of study. The activity is observed to have been a losing proposition for the Port throughout the period, with deficits ranging between Rs.3.87 crores and Rs.20.43 crores. Both revenues and expenditure on such services have increased considerably over time, but the cumulative increase in expenditure by Rs.86.50 crores between 1980-81 and 1992-93 has far outweighed the increased port revenue of Rs.72.03 crores. Consequently deficits have risen over the period, as evinced by the table. It is also noted that the bulk of expenditure increases on port and dock services have occurred towards the end of the study-period, indicating high-cost operation which is unmatched by revenue-performance, where growth is much more moderate.

Table 6.4
Economics of the Activity 'Port and Dock Facilities' in
Calcutta-Haldia Port (1980-81 to 1992-93)

(Rs. crores)			
Year	Revenue	Expenditure	Surplus/Deficit
1980-81	33.87	39.60	- 5.73
1981-82	39.13	43.00	- 3.87
1982-83	37.16	41.82	- 4.66
1983-84	36.79	47.01	-10.22
1984-85	43.47	50.16	- 6.69
1985-86	49.35	60.78	-11.43
1986-87	51.94	63.27	-11.33
1987-88	61.52	70.55	- 9.03
1988-89	61.78	69.77	- 7.99
1989-90	63.67	76.44	-12.77
1990-91	70.07	80.51	-10.44
1991-92	79.69	100.12	-20.43
1992-93	105.90	126.10	-20.20

Source : *Compiled and Calculated from Administration Reports and Annual Accounts of Calcutta-Haldia Port for the above years*

For comparison, surpluses or deficits recorded against this activity at selected major ports between 1980-81 to 1992-93 are presented in Table 6.5.

Table 6.5
Surplus/Deficit on the Activity 'Port and Dock Facilities' in
Selected Major Ports (1980-81 to 1992-93)

(Rs. crores)				
Year	Bombay	Madras	Vizag.	Calcutta
1980-81	-1.26	0.38	-1.46	- 5.73
1981-82	-1.97	0.62	-2.74	- 3.87
1982-83	-2.78	0.21	-3.29	- 4.66
1983-84	-1.02	0.83	-3.35	-10.22
1984-85	2.01	2.87	-0.11	- 6.69
1985-86	1.88	4.39	1.82	-11.43
1986-87	-1.95	2.93	-0.03	-11.33
1987-88	-5.36	5.32	-3.39	- 9.03
1988-89	-2.97	3.18	2.71	- 7.99
1989-90	-0.82	2.93	4.51	-12.77
1990-91	-6.64	3.61	1.96	-10.44
1991-92	-5.51	9.04	-1.66	-20.43
1992-93	NA	NA	NA	

Note : *NA denotes Not Available*

Source : *Compiled and Calculated from Administration Reports and Annual Accounts of respective ports for the above years*

Deficits are observed at Bombay Port in all years except between 1984-86, when there were marginal surpluses. Madras Port is better placed showing surplus balances on the activity throughout the period of study, this surplus rising from Rs.0.38 crores in 1980-81 to Rs.9.04 crores in 1991-92. Visakhapatnam recorded deficits till 1987-88, except for the marginal surplus in 1985-86, but had continuous surpluses since 1987-88 until a deficit recurred in 1991-92. In terms of quantum, deficits recorded at Calcutta are considerably higher than at any other selected major port.

While probing into the reasons for deficits in these services at CHP, it may be noted that port and dock facilities are permanent in nature and, as such, idle-facility costs would assume a significant proportion in the event of non-realisation of expected traffic. However, scope exists for revamping existing facilities, which, besides providing better quality of services, would also reduce operating costs. Availability of good port and dock facilities would in any case attract more traffic to the Port. Port authorities should therefore take every step to see that deficiencies in facilities are removed and that they are maintained in good condition at all times. This will go a long way in improving facilities on offer at the Port and in lowering the Port's operating costs. This assumes special significance in view of the fact that most major ports in India are old and as a result, their facilities are antiquated and need improvement.

Another reason underlies the deficit balances occurring against port and dock services. In advanced countries, most of such services are provided by private undertakings, except for major port services such as pilotage, etc. that are provided by the port authority. In most developing countries however, the picture is entirely opposite. Here all port and dock services i.e. pilotage, towage, berthing, cargo handling and storage, weighing, navigational aids and the like are provided by port authorities. Port expenditure thus becomes overburdened with the costs of these and the result is an overall deficit on port and dock services. UNCTAD, in a study of 81 ports in 68 countries of North and South America, Western Europe, the Middle East, Africa, Asia and Australia has observed this trend. It might therefore be advisable for Indian major ports to leave the provision of minor facilities to private enterprise and concentrate more on provision of basic facilities like adequate draft, deeper channels, modern navigational aids and so on, in order to adapt themselves to the rapid changes that are taking place in shipping technology. Wherever possible, the ports should allow portusers to provide their own facilities and thus relieve themselves of part of the fiscal burden.

In elaboration of the preceding statements, a comparative listing of the responsibilities of the private sector and the public authority, on account of different port services in developing and developed countries may be reproduced here which bears out the observation that the responsibilities for provision of most port services in developed countries lie with the private sector.

Providers of the Main Services in Ports in Developing and Developed Countries

Ports in Developing Countries.

- a) Port authority generally responsible for:
- Navigational aids
 - Pilotage
 - Towage
 - Berthing/Unberthing
 - Fire-fighting
 - Cargo-handling on-quay

Ports in Developed Countries.

- a) Port authority generally responsible for:
- Pilotage

*Ports in Developing Countries.**Ports in Developed Countries.*

Storage

Weighment of goods

Tallying of goods

b) Other Public bodies generally responsible for:
Marine insurance

c) Private undertakings generally responsible for:
Stevedoring
Tallying of goods
Repair of ships
Surveillance of cargo

b) Other Public bodies generally responsible for:
Navigational aids
Marine insurance
Fire-fighting

c) Private undertakings generally responsible for:
Towage
Berthing/Unberthing
Stevedoring
Cargo-handling on-quay
Storage
Repair of ships
Surveillance of cargo
Tallying of goods
Weighment of goods

Source: United Nations Conference on Trade and Development, *Port Pricing*, New York, 1975, pp.14

In concluding this part of the analysis, it might be said that the most paying activity for ports is, by and large, *cargo handling and storage* and that ports are observed to incur considerable deficits on the provision of port and dock facilities. If existing port and dock facilities are not adequate to the needs of shippers, they show little interest in using the port which results in reduction of the revenues derived from cargo handling and storage. Thus in order to attract more traffic to the port and to increase its revenues, adequate facilities on port and dock must be provided either by the port authority or by private agency.

6.2.3 Port Railways

Port railways play a vital role in port development. The growth of a port is greatly influenced by its access to various forms of transport by railways, roads and waterways. Although road transport has become increasingly important in handling port traffic, the railways would continue to handle a significant share of port-bound traffic at Indian major ports because of the substantial proportion of bulk cargo in such traffic. It is to be noted in context that "adequate and cheap communications with the hinterland are of vital importance for the smooth flow of traffic to and from the Port"¹.

In regard to railway operations, the major ports of India may be divided into two classes. In the first category are the six major ports at Calcutta, Bombay, Madras, Visakhapatnam, Paradip and Mormugao, at which port railways are owned and operated by the respective Port Trusts. The five remaining major ports of Kandla, Cochin, Tuticorin, New Mangalore and Nhava-Sheva form a second category, where port railways are owned and directly operated by the Indian Railways.

Table 6.6
Financial Results of the working of 'Port Railways' at
Calcutta-Haldia Port (1980-81 to 1992-93)

(Rs. crores)			
Year	Revenue	Expenditure	Surplus/Deficit
1980-81	3.74	8.87	-5.13
1981-82	4.63	10.30	-5.67
1982-83	6.66	13.14	-6.48
1983-84	7.29	11.04	-3.75
1984-85	5.91	12.09	-6.18
1985-86	6.54	12.65	-6.11
1986-87	7.34	13.26	-5.92
1987-88	9.95	16.59	-6.64
1988-89	9.53	15.72	-6.19
1989-90	10.40	16.98	-6.58
1990-91	12.07	16.94	-4.87
1991-92	14.48	17.71	-3.23
1992-93	17.99	20.46	-2.47

Source : *Compiled and Calculated from Administration Reports and Annual Accounts of Calcutta-Haldia Port for the above years*

Table 6.6 indicates the financial results of the working of port railways at Calcutta Port between 1980-81 to 1992-93. It is seen that - like port and dock services - port railway operations have been in a losing position throughout the period of study, with deficits ranging between Rs.2.47 crores and Rs.6.64 crores. Although revenues from railway operations increased from Rs.3.74 crores in 1980-81 to Rs.17.99 crores in 1992-93, expenditure on port railways has outweighed these, increasing from Rs.8.87 crores to Rs.20.46 crores over the same years. The happier note is that over the last three years of the study, this deficit has shown a decreasing trends, with the rate of increase in revenue being sharper than that of expenditure. This is clear in the table.

Comparative financial results of the working of *port railways* at the selected major ports is shown in Table 6.7. Like CHIP, the Port of Bombay had also shown deficits throughout the period of study, with the amount of deficit increasing nearly three times over the study-period. Visakhapatnam Port showed a similar trend except between 1988-91 when there were surpluses on railway operation. Madras on the other hand, earned surpluses on railway operations throughout the period except in 1981-82 and 1982-83 when there were deficits. The quantum of surplus in the later years of study has been significant and rising.

The remedies to overcome problems of this nature which CHP faces with regard to railway operations relate to whether its port railways should be transferred to the Indian Railways; whether its port railways are overstuffed and/or unnecessarily burdened with uneconomical sidings, whether the terminal charges levied are adequate, and whether freight rates can be increased. These are now dealt with consecutively.

Table 6.7
 Surplus/Deficit of 'Port Railways' in selected Major Ports
 (1980-81 to 1992-93)

(Rs. crores)				
Year	Bombay	Madras	Vigaz	Calcutta
1980-81	-3.45	0.38	-1.46	-5.13
1981-82	-4.07	-0.06	-1.07	-5.67
1982-83	-4.67	-0.55	-1.11	-6.48
1983-84	-4.35	0.12	-1.64	-3.75
1984-85	-5.66	0.58	-1.54	-6.18
1985-86	-6.00	1.02	-3.59	-6.11
1986-87	-5.93	1.39	-0.93	-5.92
1987-88	-6.79	2.87	-0.25	-6.64
1988-89	-7.21	4.53	0.69	-6.19
1989-90	-8.30	4.49	0.13	-6.58
1990-91	-9.12	4.46	0.39	-4.87
1991-92	-9.66	6.14	-0.01	-3.23
1992-93	NA	NA	NA	-

Note : NA denotes Not Available

Source : Compiled and Calculated from Administration Reports and Annual Accounts of respective ports for the above years

Ownership:

An important but contentious issue attaches to whether port railways in the first category of six Indian major ports mentioned above should be transferred to the Indian Railways, in line with port railways at the other major ports, or whether ownership of these should be retained by the respective Port Trusts. Both sides to the issue have their own merits and demerits. The following advantages might be claimed in support of retention of ownership:

- a) port railways are a part of port infrastructure, and thus help in the coordination of various activities involved in timely loading and unloading of cargo;
- b) such coordination leads to quicker turnaround times for ships berthing at the port;
- c) port-owned railways are attuned to the fluctuating needs of their parent ports;
- d) priorities for movement of goods can be administered more effectively in the case of port railways.

On the other hand, support for the transfer of ownership of port railways to the Indian Railways is based on the following:

- a) savings in time, equipment and manpower associated with railway operations can be effected, since duplication and formalities would be avoided in respect of many port services;
- b) administration by the Indian Railways would expectedly bring about greater operational efficiency and economy, on account of specialised management.

Having discussed these implications of the transfer of ownership of port railways to the Indian Railways, the Major Ports Commission recommended the retention of port railways by the concerned ports, in cases where these were operated by the Port Trusts, and sought review of this issue after a period of 10 years from the date of its Report.²

Staffing:

It has generally been observed that port railways are overstaffed; hence possibilities for pruning manpower in areas where this is feasible have to be explored. In addition to such strategies, new recruitment has to be banned until the staff-strength on port railways is commensurate with workload. If it is eventually decided to transfer ownership to the Indian Railways, problems of another dimension will arise. Port employees on port railways are better placed relative to railway employees in terms of pay-scales, and naturally would not acquiesce to reduction in pay. On the other hand, if such staff were paid higher wages as before, this would lead to friction and existing Indian Railways staff would in turn place a demand for higher wages. To resolve this problem, the possibilities for absorbing the port railway staff in other posts at the ports would have to be explored.

Uneconomical operations:

It is found also that port railways are sometimes burdened unnecessarily with uneconomical sidings, which are uneconomical in operation. To overcome this unwarranted situation, port railways should seek and be provided the earliest opportunity to abandon such sidings.

Terminal charges & Freight rates:

Indian Railways have been revising the overall freight rates periodically, to maintain financial soundness in their operations. Viewed in this light, the claims of port-owned railways for the levy of higher terminal charges is genuine. The Major Ports Commission also recommended that "the Ministry of Railways should view the claim of the Port Railways more pragmatically and that revisions in the freight rates made by Railways from time to time should be simultaneously followed by a *pro-tanto* adjustment in the terminal charges to be paid to the Port Railways.³ A follow-up on this recommendation would go a long way in restoring viability and eliminating deficits in the operation of port railways.

6.2.4 Estate Rentals

Another important activity at ports comprises the leasing-out of port-owned estates. A port earns revenue from its estate rentals, but also incurs some expenditure on the maintenance of its estates.

The economics of estate rental activity at CHP over the period of study are next explored. Table 6.8 indicates that such rentals are profitable, particularly in case of CDS (as shown in Ch.3), with surpluses of rental-revenues over expenditures being generated throughout the study-period, and the amount of surpluses earned also increasing more than five-fold from Rs.2.31 crores in 1980-81 to Rs.12.24 crores in 1992-93. Rental-activity has expanded particularly after 1988-89, as seen in the marked rise of rental-revenues following this period, accompanied by a late tendency for estate-related expenditure also to rise. However, surpluses have been growing almost continuously.

Comparison between selected major ports regarding surpluses/deficits on estate rentals over the study-period forms the subject of Table 6.9. The table indicates initially better relative placement compared to CHP for Bombay Port because of the greater quantum of surpluses generated in the initial period. However, Bombay has lately been showing a markedly deficit position, unlike CHP which has generated surpluses throughout. Madras on the other hand, reveals deficits in most years of study, except over the last three years when marginal surpluses are indicated. Visakhapatnam has held a marginal position throughout in terms of estate rentals, as evinced by more-or-less alternating deficits

Table 6.8
Economics of the Activity 'Estate Rentals' at Calcutta-Haldia Port
(1980-81 to 1992-93)

(Rs.crores)

Year	Revenue	Expenditure	Surplus/Deficit
1980-81	5.28	2.97	2.31
1981-82	6.93	3.29	3.64
1982-83	6.31	3.31	3.00
1983-84	6.03	4.24	1.79
1984-85	7.74	4.48	3.26
1985-86	9.16	4.97	4.19
1986-87	8.68	6.21	2.47
1987-88	9.01	6.60	2.41
1988-89	10.93	6.75	4.18
1989-90	13.50	8.07	5.43
1990-91	15.92	9.50	6.42
1991-92	19.47	11.85	7.62
1992-93	25.56	13.32	12.24

Source : *Compiled and Calculated from Administration Reports and Annual Accounts of Calcutta-Haldia Port for the above years*

Table 6.9
Surplus/Deficit of 'Estate Rentals' in Selected Major Ports
(1980-81 to 1992-93)

(Rs.crores)

Year	Bombay	Madras	Vigaz	Calcutta
1980-81	5.87	-0.12	-0.22	2.31
1981-82	5.30	-0.29	-0.16	3.64
1982-83	10.26	-0.18	0.48	3.00
1983-84	17.77	-0.24	0.74	1.79
1984-85	17.20	-0.47	1.55	3.26
1985-86	17.16	-0.17	0.92	4.19
1986-87	16.31	-0.40	0.56	2.47
1987-88	15.42	-0.23	1.23	2.41
1988-89	20.01	-0.30	0.23	4.18
1989-90	-4.73	0.28	-0.24	5.43
1990-91	-3.79	0.43	0.71	6.42
1991-92	-2.67	0.72	-2.17	7.62
1992-93	NA	NA	NA	-

Note : *NA denotes Not Available*

Source : *Compiled and Calculated from Administration Reports and Annual Accounts of respective ports for the above years*

and surpluses of limited magnitudes. Comparatively, therefore, Calcutta is better-placed among the four selected major ports, with most of its revenues generated from the metropolitan properties of CDS. Deficit balances indicated for the other ports in the table could be overcome by increasing rentals, if possible to a considerable level.

6.3 Finance & Miscellaneous Items (Non-Operating Items)

As had earlier been stated, costs and revenues fall into the two categories of operating and non-operating types. Relationships between operating costs and revenues have already been analysed and commented upon in the preceding chapter. Non-operating income and expenditure - also termed *finance and miscellaneous items* - although not directly related to port operations, play a significant role in determining the eventual financial performance of a port. This is because a surplus on this head either augments operating surplus or else wipes out the operating deficit, and, conversely, a deficit on the account either reduces operating surplus or else escalates the operating deficit. Most of non-operating income at ports derives from income on investments, while the interest payable against loans constitutes the bulk of non-operating expenditure.

Table 6.10
Surplus/Deficit on 'Finance and Misc. Items' at Calcutta-Haldia Port
(1980-81 to 1992-93)

(Rs. crores)

Year	Revenue	Expenditure Deficit op. Surplus	Surplus/ Deficit to	% of Surplus
1980-81	4.96	15.18	-10.22	76
1981-82	5.36	17.87	-12.51	67
1982-83	6.39	24.25	-17.86	60
1983-84	5.00	20.82	-15.82	125
1984-85	10.54	28.44	-17.90	51
1985-86	9.86	24.71	-14.85	115
1986-87	17.71	26.44	- 8.73	43
1987-88	13.38	37.74	-24.36	215
1988-89	21.50	35.87	-14.37	27
1989-90	23.78	33.59	- 9.81	17
1990-91	26.59	41.96	-15.37	24
1991-92	45.52	55.35	- 9.83	18
1992-93	28.25	53.61	-25.36	36

Source : Compiled and Calculated from Administration Reports and Annual Accounts of Calcutta-Haldia Port for the above years

Table 6.10 presents the economics and surpluses /deficits on the *finance and miscellaneous* item at Calcutta Port between 1980-81 to 1992-93. Continuous deficits have been a consistent phenomenon under this head, which have ranged in amount between Rs.8.73 crores and Rs.25.36

crores. Till 1986-87, there was a large quantum of deficit which generally increased beyond Rs.10.22 crores at the start of the period, before suddenly falling to Rs.8.73 crores in 1986-87. However in the very next year i.e. 1987-88, the accounting deficit shot up to Rs.24.36 crores, partly on account of inclusion of capital transfers to reserves for replacement, rehabilitation and modernisation of capital assets, and reserve for development, repayment of loans, and contingencies, within *finance and miscellaneous expenditure*, in accordance with Government instructions. After another decline, the last year of study saw the deficit reach a level of Rs.25.36 crores. In the alternate years 1983-84, 1985-86, and 1987-88 the amount of such deficits had even exceeded total operating surpluses, with the deficit in 1987-88 rising to more than double the operating surplus. Thus whatever operating surplus was generated by port operations was swallowed up by these huge deficits, which still left undesirable net deficits for the port.

The major reason for the pattern of deficits observed appears to have been the tendency for finance and miscellaneous expenditure to rise pronouncedly over the study-period, as a result of ever-increasing application of funds towards new Plan projects and towards meeting debt charges on other Port projects which are now funded increasingly from returns on previous fund investments by the port itself. Revenues on this account have risen, particularly in the later years, but show much more instability. The peaking of the revenue item to Rs.45.52 crores in 1991-92, appears to be attributable to an inflow of interest realised on short-term investment, also reflected in the sharp upswing in investment applications of port funds in that particular year seen in Table 4.1, previously. This is also borne out by reference to the schedules to the revenue accounts (Annual Accounts) of CPT, where under *finance and miscellaneous items*, actuals for the year 1990-91 show interest receipts on investments of the form of fixed deposits, cash balances, etc. to have risen sharply relative to the previous year.

Table 6.11
Surplus/Deficit on 'Finance and Misc. Items' at Selected Major Ports
(1980-81 to 1992-93)

Year	(Rs.crores)			
	Bombay	Madras	Visakhapatnam	Calcutta
1980-81	3.61	-8.45	-10.48	-10.22
1981-82	10.38	-9.85	-10.28	-12.51
1982-83	20.56	-1.68	-8.65	-17.86
1983-84	16.14	-2.05	-10.26	-15.82
1984-85	0.23	-5.39	-11.16	-17.90
1985-86	15.51	-3.73	-14.41	-14.85
1986-87	32.87	-6.34	-15.43	-8.73
1987-88	25.18	-5.27	-10.87	-24.36
1988-89	29.56	-2.92	3.42	-14.37
1989-90	12.23	1.70	-12.98	-9.81
1990-91	-2.55	8.27	-3.59	-15.37
1991-92	-8.56	17.25	1.59	-9.83
1992-93	NA	NA	NA	-

Note : NA denotes Not Available

Source : Compiled and Calculated from Administration Reports and Annual Accounts of respective ports for the above years

The comparative position of selected major ports regarding surplus/deficit on finance and miscellaneous items between 1980-81 to 1992-93 is presented in Table 6.11.

Bombay Port is seen to be best-placed among major ports in this regard, earning large surpluses in all but the last two deficit years, i.e. 1990-91 and 1991-92. The amount of such surplus ranged from a high Rs.32.87 crores in 1986-87 to a deficit Rs.8.56 crores in 1984-85. When the net effect of non-operating items is considered, the operating surplus for Bombay was thus augmented in almost all years by the non-operating surplus. Receipts of large sums of interest from huge investments previously made, and the relatively lower burden of interest payable on loans were the principal reasons which placed Bombay Port on such good financial footing.

Madras and Visakhapatnam ports too, like CHP, however generally had continuous deficits under the finance and miscellaneous items head. An exception in the last three years of study commencing 1989-90 is found in case of Madras Port, where rising surpluses have been generated. Visakhapatnam Port has only generated surpluses on this head in the two nonconsecutive years 1988-89 and 1991-92. Heavy interest obligations on Government loans were the primary reason behind the deficits.

6.4 Trends in Port Costs & Revenues

Analysis of revenue and expenditure within each category of port services indicates surplus or deficit activities, but not the actual contribution from each activity to overall operating surplus for the port. The main port activities i.e. cargo handling and storage, port and dock services, port railways and port estate rentals need also to be assessed in terms of absolute profitability.

Cargo handling and storage is the most paying port-service at all major selected ports. At CHP, the magnitude of on this was considerably lower than at other major ports. Revenue and costs associated with cargo handling vary considerably from cargo to cargo. At CHP, delays in clearance of cargo occur due to wagon shortages and paucity of storage space. Demurrage charges might be raised to punitive levels to act as a deterrent to non-clearances, while raising storage charges would augment port revenues.

Port and dock services are next in order of importance to port operations. Deficits on these at CHP are considerably higher than at other major ports. Port and dock facilities are of permanent nature and idle-facility costs are high when shortfalls in traffic occur. Unlike advanced countries where most port and dock services are privatised, ports in developing countries are observed to incur considerable deficits on the provision of port and dock facilities. Inadequacies in facilities are disincentives to portusers, resulting in reduction in cargo handling and storage revenues. To attract more traffic and to increase revenue, adequate facilities on port and dock must be provided either privately or by the port authority.

Port railways play a vital role in port development, but have generally incurred losses. The remedy may be to transfer CHP port-railways to the Indian Railways, to reduce staffing and uneconomical sidings, and to raise terminal charges and freight rates. CHP is better placed however in terms of the leasing-out of port-owned estates, because of revenues generated from the metropolitan properties of CDS.

The bulk of non-operating income and expenditure at ports derives from income on investments, and from interest payments against port loans. Deficits have occurred because finance and miscellaneous expenditure has risen pronouncedly with application of funds to new Plan projects and

towards meeting debt charges on other Port project-loans. Although non-operating revenues have risen, they show more instability. Bombay Port is best-placed among major ports in this regard. CHP had continuous deficits because of heavy interest payable on Government loans.

Following analysis of operating and non-operating cost-revenue relationships, assessment needs now to be made of operational performance and profitability, and physical performance variables at CHP, in comparison to other major ports. This is accomplished in the next chapter.

References:

1. Report of the Commission on Major Ports; 1970; p.91
2. Ibid., pp.93-94
3. Ibid., pp.93