

# **Tariff Authority for Major Ports**

**PROPOSAL**

## **Study on Assessment of Cross Subsidisation in Major Port Tariffs**

**October 2000**



**Crisil Advisory Services**

A Division of  **CRISIL**

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## STUDY ON ASSESSMENT OF CROSS SUBSIDISATION IN MAJOR PORT TARIFFS

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### 1.1 INTRODUCTION

The tariff structure of Major Ports provides for cross subsidisation between the various user groups. This would mean a differentiation in charges between two or more user groups even when there is no difference in the nature and extent of services provided to these user groups.

Pricing policy of a port would be governed by a number of factors, an analysis of which, is necessary to understand the underlying rationale for this differentiation. Also important would be to quantify the actual amount of cross-subsidisation being practised at the ports as the same may be not so apparent because of certain allocation policies of the port

An analysis of the extent of cross subsidisation prevalent in Major Port tariffs as also the rationale behind such cross-subsidisation is expected to assist TAMP in its mandate as Tariff Regulator. In this context, TAMP has invited Crisil Advisory Services (CAS) to undertake a study on cross subsidisation in Major Ports. CAS is extremely pleased to present its proposal for the same.

### 1.2 TERMS OF REFERENCE

As per the terms of reference issued by TAMP, the study is envisaged to encompass the following :

- **Part I** : the conceptual aspects of cross-subsidisation in the national and international perspective and the relevance of cross-subsidisation as a useful tool in economics especially in the context of on-going economic reform; the implications of cross-subsidisation in public utilities and illustrative examples of the efforts in other sectors to phase out the same.
- **Part II** : the incidence and extent of cross-subsidisation in port tariffs and the results obtaining port-wise; the rationale for cross-subsidisation in port tariffs and the effect of such cross-subsidisation.
- **Part III** : the effect of a removal of cross subsidies in port tariffs on the port, industry and economy; whether such a rationalisation should be advocated, and if so, the recommended method for elimination of cross-subsidies in a phased manner.

### 1.3 PROPOSED APPROACH TO THE ASSIGNMENT

#### 1.3.1 PART I : CONCEPTUAL ASPECTS OF CROSS-SUBSIDISATION, NEED, RELEVANCE & TRENDS

##### 1.3.1.1 Module I - Brief History and Conceptual framework of Cross -Subsidisation

This module will outline the rationale of subsidies and the need for cross subsidisation in various areas of the economy against the backdrop of Socialist

Principles of State Policy adopted by the Government of India. A detailed assessment of the subsidies prevailing in sectors like petroleum products, power and telecom, based on geographic (rural-urban) and customer-based segmentation will be conducted. The study will further track the growing quantum of subsidies given by the Centre and Selected States over a 10-year period and assess its impact on the fiscal deficit.

This module will source its information from "White Paper on Government Subsidies in India", tabled in Parliament in 1997 and from various Budget Documents and Finance Accounts of Government of India and Selected States.

### **1.3.1.2 Module II - Current Thinking on Subsidies and Cross-Subsidisation**

This module will trace the current thinking, both in national and international arena, on the efficacy and need for phasing out of subsidies and cross subsidies in various sectors. While in the international context, sectors that can be specially examined are power and telecom, in Indian context, especially with the on-going reforms, the power, telecom and petroleum sectors will be examined.

In principle, subsidies are advocated when the social benefits of a particular commodity or service are greater than the sum of the private benefits of the consumer. This broadly serves the equity purpose of a developing economy. However, subsidies manifest in price distortions in commodities and services thereby leading to allocative inefficiencies. In this context of equity-efficiency trade-off, this module will examine the feasibility and desirability of phasing out of subsidies in India.

Against this backdrop, feasibility and desirability of phasing out of cross subsidisation of port tariffs will be assessed in the subsequent modules.

## **1.3.2 PART II : ASSESSMENT OF CROSS-SUBSIDISATION IN MAJOR PORT TARIFFS**

The assessment of the presence and extent of "cross-subsidy" would entail an evaluation of the *tariffs* levied for each port user group / activity against the underlying *cost* in provision of the same. In an ideal, no-cross-subsidy scenario, the magnitude of the *operating margin* so computed would be comparable across all user groups/ activity heads under consideration. In practice, however, the scatter/variability of operating margins observed would reflect the level of cross subsidy across the different user groups / activity heads compared<sup>1</sup>.

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<sup>1</sup> The underlying assumption is that since all ports currently typically follow a cost-plus approach to tariff setting (with possibly even higher tariffs if the user can bear), cost control measures that could contribute to operating margins being higher than usual have not been considered i.e. the cross subsidy if any, is being attributed to differential tariffs rather than differential costs. Within a given port, it can be reasonably assumed that attempts by the port to improve operating efficiency would be uniform/ comparable across user groups. The relationship between operating margins and cross-subsidies in such a scenario may thus still be valid. The assumption may have to be reviewed only when a comparison of cross-subsidies across ports is attempted.

### 1.3.2.1 Scope of Part II

In respect of the present study of cross-subsidisation in Major Port tariffs, it is proposed to undertake the study across different *user groups* and not across activities/service heads. The reason for this is that activity-wise margins could largely be driven by the cost allocation policies of the port. For e.g. in Kandla, pilotage is a loss making activity which is subsidised by berthing and mooring. But this could be attributed to the fact that 95% of the channel dredging expense is apportioned to the pilotage head while only 5% is allocated to port dues. Thus, an activity-wise profitability assessment is relevant from the ports internal management and control point of view but not from the cross-subsidisation perspective. To assess the impact of cross-subsidisation, it needs to be studied from the *user's* perspective.

The study would address the following:

- Identification of the areas of cross subsidisation across user groups
- Quantifying the extent of cross subsidisation being practised
- Underlying rationale behind such cross subsidisation

Further, since the allocation / apportionment policy of the port affects the computation of the cost of provision of facilities / services, the quantification of the extent of cross subsidisation may require a review of the same.

The Study would cover the tariffs of the Major Port Trust and the private (BOT) terminal operators<sup>2</sup> at the Major Port. The levels of cross-subsidisation, if any, detected in the private operators services may, however, not be compared to those of the Port Trust as the operating efficiencies of the two entities could be very different.

In respect of the charges levied by the Port Trusts / terminal operators for (i) usage of their properties and (ii) conferral of rights to carry out business / economic activities inside their territories<sup>3</sup>, these could be more in the nature of lease / licensing revenues and could be typically driven by bilateral user contracts that have been negotiated between the two parties. Whether and how cross-subsidisation would be prevalent in such a scenario is not clear.

### 1.3.2.2 Cross Subsidies across User Groups – Some Examples & Approach

The tariff structure of Major Ports provides for a differentiation in charges between two or more user groups even when there is no difference in the nature and extent of services provided to these user groups. Some of the apparent tariff heads in the Port Scale of Rates that differentiate between different user groups are :

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<sup>2</sup> The ability to analyse the cross-subsidisation practices exercised by the private operators would be a function of their willingness to share information details on user / service / activity-wise costs and accounting practices adopted.

<sup>3</sup> clause (3) (c) & (d) of TAMP's scope of work

**Cargo related charges for Import V/s Export cargo**

- Wharfage
- Demurrage

**Vessel related charges for Foreign V/s Coastal vessels**

- Port dues
- Composite Pilotage fee
- Composite berth-hire charge
- Water supply charges

The two user groups in each of the above two cases avail of exactly the same type of facilities and services. Hence the port's cost in servicing such users is identical. The fact that one group nevertheless subsidises another is reflective of other management objectives at play in port pricing.

To compute the extent to which one user group cross-subsidises another, a direct comparison of published tariffs could be undertaken for standardised measurement units (standard vessel size, days at berth, storage time etc. as the case may be) for each tariff head.

**Wharfage across different commodities**

Indian Major Ports have significantly different wharfage rates across different cargo types. The fact that the definition of wharfage and the services encompassed under the same are different across ports also makes a direct comparison difficult. Within a port also, the scope of services under the head wharfage could be different across different cargo groups viz. dry bulk, liquid bulk, break bulk and containers. In some cases, wharfage may just entail royalty for use of the wharf whilst in others it may entail other handling services also. In several cases wharfage is devised explicitly on an advalorem basis or (implicitly) based on what the traffic can bear.

To enable a meaningful assessment of cross subsidy therefore, it is imperative to first assess within each port the total handling services provided for each cargo group and the cost thereof. Within each cargo group if the mode of handling is different across cargo types within the same group for e.g. bulk coal cargo may be handled by mechanised facilities whereas bulk sulphur may be handled by crane grabs, then separate costing for each would have to be computed. The objective would be to aggregate the total direct<sup>4</sup> cost of handling<sup>5</sup> for each type of cargo user. This cost would then be compared against the tariff incurred by each such cargo user as per the Port Scale of Rates for the services availed of. Given that the capital investment in cargo handling systems and that the degree of manual : mechanisation content in each handling operation could be different, a correction would also have to be made for the depreciation of the assets employed. The operating margin so computed

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<sup>4</sup> excluding indirect costs (except some typically allocable costs like firefighting) and general overheads

<sup>5</sup> By total cost of handling it is intended to cover only handling services provided by the Port (and not by third part intermediaries) corresponding to which there are tariffs charged as per the Port's Scale of Rates.

could then be meaningfully compared across cargo users to assess the degree of cross-subsidisation prevalent.

The gauge the level of scatter or dispersion in margins across different cargo types, the following mathematical measure is proposed to be used :

$$\text{Mean Absolute Deviation} = \frac{\sum \text{Abs}(X - \text{Mean})}{N}$$

where,

X is the wharfage of each item

Mean is the Mean wharfage

Abs is the Absolute Value

N is the number of items

Higher the M. A. D., greater the dispersion and hence, the level of cross subsidisation. A micro analysis of the extent that the margin for each cargo type varies from the mean could also be individually presented.

The challenge in the above exercise would be to assess the costs that are currently booked under each head of tariff as per prevailing accounting practices of the port vs those that ought to be booked as per the principles of objective cost allocation. It is possible that the computed levels of cross subsidy could be different under the two scenarios.

### 1.3.3 PART III : IMPACT OF RATIONALISATION OF CROSS-SUBSIDIES IN PORT TARIFFS

This module will estimate the impact on the economy through the assessment of industrial performance, in response to changes in port-tariffs if a rationalisation in cross-subsidies is attempted. In this context, impact of industry segments affected by port tariff revisions and their impact on overall industrial growth through multiplier effects and thereby on GDP will be estimated.

In structuring an approach to assessing the impact of rationalising cross-subsidies in port tariffs, a first cut evaluation framework that could be adopted is presented below.

- Assessment of the materiality of port tariff in the cost structure for each cargo. Accordingly, if port tariff and the change thereof is not significant in relation to the value of the commodity, then the impact of such a change would be minimal and the difference would be easily absorbed.
- What are the various factors driving the end – product pricing policy? Are there developmental objectives to be met? Are there other direct subsidies flowing to the sector from the Government / from other sectors ?
- What is the final end user for each cargo and the demographic profile thereof – what is the ability and willingness to pay.
- What is the weightage of that cargo in the WPI, what could be the downstream effect?

- If port tariffs are rationalised what would be the impact on end product prices in case of those cargoes whose prices drop? what would be the impact on demand? would supply-demand dynamics permit a complete pass-through?
- In case of cargoes whose prices rise, what is the overall price sensitivity? are there precedents in terms of resistance to price change? what has been the frequency and average increase attained in the past? what would be the impact on demand?
- How would a port tariff rationalisation exercise impact the Government. For e.g. removal of the cross-subsidy, if any, on fertiliser raw material may result in a higher explicit subsidy outgo for the Government on finished fertilisers.
- In each sector, would the tariff rationalisation have an impact on *import competitiveness vis-a-vis domestic supplies*.
- Like—wise what would be the impact of a tariff rationalisation on *export competitiveness* in each sector.
- For such commodities which are coastally shipped (e.g. cement, coal etc.) the impact of change in tariffs for such commodities on the overall transportation costs, which might make this mode of transport attractive (in case the tariffs fall) and or would shift to other modes of transport (e.g. railways, in case the tariffs rise)

Based on the above, an overall directional (positive or negative) impact on the economy would be assessed.

In the event that a case for tariff rationalisation is indicated then the modality for phased implementation would also be examined.

## 1.4 PROJECT ENGAGEMENT PLAN

### 1.4.1 THE CAS TEAM

The assignment team would comprise 2-3 full time professionals working under the guidance of Mr. Sanjay Sinha, Head - Transport and Urban Infrastructure. The team members have wide experience in the port sector.

|                         |                  |   |
|-------------------------|------------------|---|
| <b>Project Director</b> | Sanjay Sinha     | Head - Transport and Urban Infrastructure |
| <b>Team Leader</b>      | Rajashree Myneni | Manager                                   |
| <b>Team Members</b>     | Ram Walase       | Associate                                 |
|                         | Anand Sankhe     | Associate                                 |
|                         | Nadeem Hassan    | Associate                                 |

CAS would also be taking on the services of a professional Economist and Cost Accountant (if necessary), to supplement the economic and cost allocation modules.



## 1.4.2 TIME FRAME

The cross-subsidisation exercise and the underlying detailed tariff and cost analyses would entail a very close working relation with the operations and finance departments of the Port.

The total time frame envisaged for the exercise is 8 calendar months. This is estimated on the basis of around 3-4 weeks of analysis per port and parallel teams working after the completion of the initial 2 ports. The economic modules would also proceed in parallel.

It is proposed that upon completion of the exercise for 2 ports, a presentation of the key findings and the economic underpinnings thereof would be made to TAMP. This would enable a discussion on emerging results and help shape the course for the subsequent study for the 10 ports. The results of Part I of the study and the impact analysis of Part III in respect of these 2 ports would also be made at this stage.

The initial discussion on Part I of the study is envisaged to be around 10 weeks from the date of commencement. The interim discussion on the 2 ports is envisaged to be around 14 weeks from the date of commencement.

## 1.4.3 FEE

### 1.4.3.1 Professional Fee

Based on the total man-effort estimates for the study of the 12 ports, the sectoral industry and economy analyses and the fee for the external experts, the total professional fee for the assignment is Rs. 49,00,000/- (Rs. Forty-nine lakhs only).

### 1.4.3.2 Out-of-Pocket Expenses

Out-of-pocket expenses for out-station travel, hotel stay, local conveyance, communications, report preparation, etc. would be extra and charged at actuals. We expect that this would largely comprise air-fare to the various ports. Since a fairly extended stay at each port is envisaged, arrangements for stay at the port guesthouses could significantly reduce the outstation expenses.

### 1.4.3.3 Schedule of Payment

The billing schedule for the professional fee is proposed as follows:

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|---|-----|
| On commencement of the assignment                                       | 15% |
| On presentation of results of Part I of the assignment                  | 15% |
| On presentation of the results of 2 ports & interim results of Part III | 15% |
| On presentation of results of next 4 ports                              | 20% |
| On presentation of results of next 4 ports                              | 20% |
| On submission of final recommendations                                  | 15% |

Out-of-pocket expenses would be billed on a monthly basis.