

# Tariffs used at chittagong port economics essay



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Chittagong Port is a principal port of Bangladesh and one of the emerging container ports of South Asian regions. At present, about 92% of import and export in volume are handled through this port and the growth of handling is ranging from 12% to 14% (CPA Year Book, 2008). This port is selected to present the current pricing system and to assess the demand and competition level and cost structure of this port. Further, this paper will try to provide recommendations to increase the attractiveness and the profit of the port by changing the current pricing system.

Current pricing system:

The present pricing system of this port is cost based. The Chittagong Port Authority (CPA) is a basic service provider and its objective focuses mainly on providing necessary services and facilities to the port users efficiently and effectively at competitive prices. The CPA has been following the cost based tariff system since 1987. To harmonize the objectives of CPA and port users the port introduced cost based tariff system in 1987 and had started collection of revenues on the basis of cost based tariff system since that year.

Under cost based tariff, all variable, fixed, mixed, and step costs on a particular date were considered. There were also consideration of the growth rate of the cargo, container, and other activities for certain period. Total activities of CPA, to determine the tariff for a particular cargo or container or on any activity or movement, were divided into operational and non-operational (other service departments) departments. All variable and traceable costs relating to a particular department were directly assigned.

Then all non-traceable cost and indirect costs were apportioned to all departments on some basis. After having a total costs for each department, all cost of non-operational departments re-apportioned to the operational departments on the basis of weights. Then total cost of a particular operational department was divided by certain number of activity or cargo or container to have a unit cost or tariff.

Since the tariff is cost based and there is no provision for profit in the tariff, it was essential for the CPA to increase its efficiency in operation and effectiveness in use of assets so as to ensure early recovery of the fixed cost and reach the break-even- point. After break even point every amount of contribution margin has been considered as profit and considering that CPA redesigned its operational activity and flow of operation. CPA also made profit by handling more cargo, containers, and ships than the expected handling which meant CPA's operational growth rate was more than the required growth. As CPA's per unit operational cost was increased as per expectation, its contribution margin per unit was also remained in same level. Moreover, CPA's tariff is on foreign currency (US Dollar) basis which has further increased CPA's income by devaluating of Bangladesh Taka.

#### Cost Structure:

The cost structure of the actual revenue and capital expenditure of CPA for the year 2007-2008 is presented in Table 1 and is shown in Annex-1.

The Table 1 shows that actual operating and maintenance expense for the year 2007-08 was Taka 35, 137. 31 lac which includes a depreciation of Taka 8848. 54 lac. Consequently, variable operating and maintenance cost was <https://assignbuster.com/tariffs-used-at-chittagong-port-economics-essay/>

Taka 26, 288. 77 lac which is 29. 53% of total cost. However, total fixed cost like depreciation and administrative staff salaries were Taka 10, 773. 64 lac which is 12. 10% of the total cost. It is very alarming that financing cost and taxes were Taka 27, 568. 66 lac which was 30. 97% of the total cost. CPA has to accept the proposal of the World Bank and ADB which have been offered through Bangladesh Government for various projects as CPA was not in a position to implement all of its development projects by using only its own fund. Therefore, CPA has to pay a huge amount of interest for those loans.

Port competition level:

The Chittagong Port is selected in this paper for assessing the intra port competition level and competition level within the region (inter port competition).

Intra Port Competition level of Chittagong Port Authority (CPA):

The Chittagong Port Authority is an autonomous and a service organization under the administrative control of the Ministry of Shipping of Bangladesh Government. According to the World Bank (2007), the port of Chittagong is a tool port where port authority owns, develops, and maintains the port infrastructure as well as the superstructure, including cargo handling equipment. CPA still has some entry barriers such as not to allow the foreign terminal operators in a tender process for operating a terminal or any investment in developing and operating a terminal of CPA due to labour union's objection and in monopolistic situation without any competition.

Assessment of Inter-port competition level of CPA in Bangladesh:

Chittagong Port Authority (CPA) and Mongla Port Authority (MPA) are two seaports of Bangladesh, which handled 32.72 million metric tons cargo (CPA Year Book, 2008 & MPA website) during the fiscal year 2007-2008. Out of 32.72 million tons of total seaborne trade CPA handled 32.02 million tons and the rest is handled by MPA. The competition level of CPA with MPA can be assessed by analyzing location, yearly throughput and market share, market concentration, comparison of tariff including its hinterland facilities. To assess the market share only container traffic will be considered.

#### Location:

Chittagong Port is situated on the south eastern part of Bangladesh at a distance of about 9 nautical miles from the shore line of the Bay of Bengal. The maximum permissible LOA of vessel is 186 meters with the maximum permissible draught ranges from 8.50m to 9.20m (CPA Year Book, 2008). On the other hand, MPA is situated on the south western part of Bangladesh at a distance 71 nautical miles upstream from the Bay of Bengal and the permissible maximum length of vessel is 225 m with the maximum 7m draught (MPA website).

#### Throughput and Market share:

The throughput, of the years 2004 to 2008, in TEUs and market share are presented in the Table 2 and is shown in Annex-2. From the Table 2, it is clear that the CPA is controlling the container market in Bangladesh without any competition.

#### Market concentration:

The Herfindhal index (H) is calculated to assess the container market concentration of two ports based on the years 2004 and 2008 in Table 3 and is shown in Annex-3.

According to the Herfindhal index (H), if  $H = 1$  or  $H = 0.5$  or  $H = 1/n$  ( $n =$  number of firms), the concentration of market is monopoly or duopoly or equal in market shares respectively (Cariou, 2010). In the Table 3 the Herfindhal index (H), in both years, are almost close to 1 (one) which indicates that the container market is monopolistic.

Comparison of tariff of both ports:

The both ports, Chittagong and Mongla are autonomous and service organizations under the administrative control of the Ministry of Shipping. Both ports' pricing system is cost based. The comparison of some costs related to container handling of both ports is presented in the Table 4 and is shown in annex-4.

The Table 4 indicates that both the ports have same pricing structure for container handling and container vessels except the Lift on / Lift off charge on account of empty containers which is about 33.33% less in CPA compared to MPA.

Hinterland market access:

The Chittagong Port is connected with the hinterland by road, rail, air and river. The major containerized import and export commodity of Bangladesh is garments accessories and readymade garments respectively. The major factories of garments are located in Chittagong and Dhaka. The Export

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Processing Zones are located 3-4 kilometers away from Chittagong port. The most of the business activities including industrialization and foreign investment are oriented with the region of Dhaka and Chittagong of Bangladesh. The road distance from Chittagong port to Dhaka is around 245km.

Mongla Port Authority (MPA) is situated on the south western part and serves the entire western part of Bangladesh. The road distance between MPA and Dhaka is can be around 185km, nearer to Dhaka compared to Chittagong Port. For many years, majority of all import and export cargo of MPA is moved by inland water way. Unavailability of railway connection and the road connection under present lay out remains unattractive for cargo transport from the port to Dhaka due to cost and time increases than going by road to Chittagong. The communication system of Chittagong Port through road, rail, and air is stronger than the Mongla port which indicates that Chittagong port is comparatively in competitive position than Mongla port in terms of hinterland access.

Assessment of Inter-port competition level of CPA with Kolkata Port Trust (KOPT), India:

Recent decision of the government of the Peoples' Republic of Bangladesh to allow the transit of the cargo of northeastern states of India has increased the competition level of CPA with the KOPT. The competition level of CPA with KOPT is assessed by considering the geographical location, throughput, market share, market concentration, pricing structure, and hinterland market access.

### Geographical location:

Chittagong port is strategically located in competitive location (Annex-5) for the seven northeastern states of India and these states currently depend on KOPT for export and import trade by passing comparatively long distance and incurring more cost. KOPT and CPA, both are regional sea ports of India and Bangladesh respectively. Due to geographical location and present decision of both countries for transit facilities CPA as regional hub will compete with KOPT.

### Throughput of CPA and KOPT:

Average yearly growth and total throughput of the years 2004 to 2008 is presented in Table 5 for assessing the competition level of two ports and is shown in Annex-6. The Table 5 indicates that both ports between the years 2004 and 2008 had positive growth rate in container trade and the total average yearly growth is 22.27%.

### Market share of Chittagong port and Kolkata port:

The market share of both ports are calculated and presented in the Table 6 and is shown in Annex-7. From the Table 6, it is clear that CPA has a lion share of container market. On the other hand, both ports have almost steady market share over the mentioned years.

### Market concentration:

The level of container market concentration of both ports is calculated for the years 2004 and 2008 by using Herfindhal Index (H) and presented in



Table 7 and is shown in Annex-8. The Table 7 shows that the Herfindhal Indices (H) is 0. 58 and 0. 59 for the years 2004 and 2008 respectively and close to 0. 5. From this value it indicates that both the years the market was duopoly because of the different natural and political hinterland.

#### Comparison of Tariff:

The tariffs in some important particular fields related to container trade of both ports are presented in Table 8 and is shown in Annex-9. By comparing the tariff in some important particular fields of both Table 8 shows that except port dues and Lift on/Lift off charges for empty containers (20' and 40') other port charges are higher of CPA than KOPT.

#### Hinterland connection:

At present, the container trades of northeastern states of India depends on KOPT which is costly and time consuming as the port is situated far away from these states. Distance by road of northeastern states from Kolkata and Chittagong is presented in Table 9 and is shown in Annex-10.

From the Table 9, it is evident that Chittagong port has competitive advantage in hinterland access over Kolkata port.

#### Conclusion and recommendations:

This paper aimed to present the current pricing system for Chittagong port and assesses the demand, competition level, and cost structure of the port. Firstly, it is observed that the pricing system of CPA is cost based and the port is mainly service oriented organization acting as a tool port. Secondly, it

is observed that the container market is monopolistic in CPA due to absence of private operator. The inter port competition level of CPA with MPA also monopolistic and concentration of container market is in favour of CPA due to some bottlenecks of MPA. In addition, the competition level of CPA is assessed with nearby Indian port, KOPT. Here, duopolistic market concentration is observed as both ports, at present, are using different hinterland without international competition. However, the competition level of both ports will be increased in near future as Bangladesh and Indian governments have agreed for transit facilities for northeastern Indian states. In this case, it is further observed that due to strategic location of CPA the port has competitive advantage over KOPT. Furthermore, the comparison of tariff of both ports shows that in some particular important fields for container trade, the tariff of CPA is higher.

From the above scenarios, it is evident that the degree of market concentration of CPA is monopolistic and current pricing system is controlled by regulations. However, according to UNCTAD (1995), in various parts of the world many ports are facing increased competition because of technological change in shipping, ports and land transport which may require a relaxation of government control on port charges. This report further mentioned that, competition has forced tariff levels to become more flexible. On the other hand, the CPA will not be able to hold its monopolistic situation as trade facilitation and competitive environment are increasing in the south-Asian region. Therefore, to increase the attractiveness and the profit of the port, it is recommended that the CPA has to revise its tariff by taking some infrastructural development for its natural hinterland access, competitive

hinterland access as well as by increasing the efficiency of operational activities. In summary, cost based tariff can contribute to develop its attractiveness and its profit by the following ways:

Rearranging operational activities to ensure efficient operation and economic use of operational assets.

2. Maintaining operational cost at a minimum level by reducing fixed cost and taking outsourcing benefit.

3. Achieving more growth in operation than required level of growth. For example: It was assumed that Total 3 million containers will be handled in 20 years with a growth rate 5% per year. On the other hand, CPA is now handling more than 1 million per year with 12% growth rate. So after 3 million, each amount of contribution margin (CM) is profit. Moreover, up to the recovery of 3 million, 7% of growth was also contribution margin, used to recover the fixed cost.

4. Devaluation of Bangladeshi taka against dollar will also help to increase profit in nominal term.

Revising tariff time to time with present cost can be a more effective way to increase profit.

Moreover, to increase the attractiveness and profit of the CPA, concession may be given on account of discharging or loading charges to importer/exporter who handles certain number of containers determined by port in single call of a vessel. Furthermore, it can provide rebates on vessels introducing green award discount like Port of Rotterdam Authority.

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