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**PORT PRICING IN THE ERA OF PRIVITIZATION:
A CASE STUDY OF TEMA PORT**

By

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DECLARATION

I certify that all the material in this dissertation, that is not my work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the university.


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DEDICATION

I dedicate this piece to my sweet husband Kay and my darling children, Akosua and Ohene

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"Commit thy way unto the Lord ; trust also in him; and he shall bring it to pass"
Psalm 37:5

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Although I must credit these numerous contributors with the virtues of this work, I do not wish to implicate them for any defect for which I am solely responsible.

ABSTRACT

The origin of this study lie in the author's interest to contribute to the preparations being undertaken by Ghana Ports and Harbours Authority towards the implementation of "increased private sector participation policy", in the management of ports. Newly privatized ports had to develop new pricing system, taking into consideration their new institutional and operational role.

This work concentrates on examining how to develop a suitable port pricing policy for a privatized port especially the Tema Port Authority. This work does not devalue the relevance and importance of analyzing the private operators' prices but for the purposes of presenting detailed analysis the pricing of the Landlord Authority.

In the writer's first forays into this field, she surveys the existing theoretical approaches to port pricing so as to elucidate the foundations for pricing in a privatized port. A brief look is taken of ports that have already been privatized and working as a landlord port. The study investigates how optimal charges on ships and cargoes can be achieved and examines the likely implications of optimal charging on the port as well as its customers. The question of port pricing in terms of speculation about how best to exact the "cost responsibility" of different port users or how the "value of service" can best be reflected in the structure of port charges was discussed.

In addition the work explores the best manner in which the regulators of port pricing will need to stipulate the basis for such pricing in order to ensure efficiency in the port. The concluding Chapter establishes that a combination pricing strategy is necessary in Tema Port. Also, it establishes that though uninhibited competition within terminals and ports will undoubtedly raise productivity and minimize cost, the port needs to be adequately regulated in order to preclude monopolization of the supply of services. A number of recommendations are then made.

Key words: Tariff, Privatization, Port pricing, Landlord, Dues on cargo, Dues on ships, Private operator.

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LIST OF ABBREVIATIONS

AR	Average Revenue
ESCAP	Economic and social commission for Asia and the Pacific
GHATIG	Ghana Trade and Investment Gateway Project
GPHA	Ghana Port and Harbour Authority
GRT	Gross Registered Tonnage
GT	Gross Tonnage
HMT	Harbour Maintenance Tax
HSUF	Harbour services user fee
ICTSI	International Container Terminal Services Inc.
JNP	Jawaharlal Nehru Port
L.O.A.	Length-Over-all.
MC	Marginal Cost
MICT	Manila International Container Terminal
MNE	Multinational Enterprise
MPC	Melbourne Port Corporation
MR	Marginal Revenue
PAT	Port Authority of Thailand
PMA	Port of Melbourne Authority
P.N.D.C.L.	Provisional National Defence Council law
POMTOC	Port of Maimi Terminal Operating Company
PPA	Philippine Port authority
SAPS	Special Assistance for project Sustainability
TEU	Twenty foot equivalent unit
UNCTAD	United Nations Conference on Trade and Development
VTs	Vessel Traffic Surveillance

CHAPTER ONE

1. INTRODUCTION TO THE STUDY

Changing world trade patterns, emerging transportation technology, and stiffer competition have caused the port industry to reconsider its primary role in transportation. Ports are naturally being incorporated into this huge, changing and competitive system. Ports should be as commercially oriented as the foreign trade and transport sectors that they service.

Over the past decades, there have been significant evolutions whereby port organisations have moved first from being wholly government controlled bodies, and instrument of state economic policy, to a more efficient organisation structure, co-ordinating private and public sector bodies, and sometimes eventually to being a totally privatised organisation. (Thomson, 1997, pp.198-199) The port authority and one or several entities such as, stevedoring companies and private terminal operators can therefore carry out the provision of services and facilities in a port. Accordingly, port pricing can refer either to the tariff of the port authority or the set of tariffs charged by the port authority and the port operators. It does not matter whichever is the case as Katty Bernard once wrote: "A successful seaport, either government controlled or privately owned is the one that is market- oriented and which develops a commercial strategy in order to obtain and sustain its market share" (Bernard, 1995) Tema Port is no exception, so even when it becomes a landlord port, it should carefully consider its pricing policy.

It is true that in relation to international transport and distribution, more and more shippers and ship owners when questioned, place the quality or efficiency of services before the price of those services. (UNCTAD, 1990, pp.28-29) In recent times, it has been said that, ports that are expensive but efficient are more competitive than the cheaper but inefficient ports. Nevertheless, port service prices are still one of the most important, if not the most important, factors of port competitiveness. This is

because there still are, and will always be some categories of low-value cargo or ships which are more sensitive to port pricing than to any other service factors. Again, shippers give preference to the quality rather than to the price of port services when quality of service differs from one port to another. Obviously, the price factor will be paramount when little difference is to be found among ports. Port tariffs are made up of different charges, consisting of charges on a vessel and its cargo, which yield operating revenues, which determine the viability of the port. Again, pricing can be used to generate the funds required for investments in facilities and equipment needed so as to increase the capacity of the port and thus reduce delays and costs to clients. According to Bennathan&Walters (1979,p.5) pricing is therefore a major factor in the implementation of a port's strategic plan.

1.1. STATEMENT OF PROBLEM

Port pricing and tariff control seems to be one of the most sensitive issues when it comes to port privatisation. Some governments ordinarily impose no control over port pricing in which case they assume that competition within and between terminals and ports will keep tariffs in line with actual cost and that the operators' profit motivation will serve to enhance efficiency and minimize costs. Other governments have been more inclined to retain pricing control. (Cass, 1999)

In effect, while acknowledging the important benefits of privatisation, it is appropriate also to acknowledge that there remains a fundamental ambivalence in the position of government in relation to the role and objectives of a privatised port. As a private operator, its interest is in maximising returns. As government, its interest is to maximise the net economic benefit from the provision of port services, both those provided by the port authority and those provided by other parties operating within the port. In a more competitive environment, with all markets functioning efficiently, this issue may resolve itself. Over time, at least, the port that provides the best price/

service quality package to its users will be the most profitable one. But where competition is limited this will not be the case.

However, the situation in most ports in developing countries is not as described above. The captive market situation and non-existence of inter- port competition (except for transit cargo) coupled with the heavy interface between the government and the port have made management unable to manage the port commercially. Lengthy bureaucratic procedures state intervention and burdensome legislative frameworks prevent management from streamlining operations and reacting quickly to market needs.

The problem is, the writer foresees, difficulties in the pricing of port services when the port is privatised. Should the appropriate pricing policy for the port authority be that of a commercial enterprise where the overall revenue for the supply of infrastructure, facilities and services is sufficient to defray the long-term marginal cost? If yes, would the environment be a commercial one, free of government interference? Will the private port operators be allowed to price as conventional business undertakings? If yes, will there be enough structures put in place to ensure that monopolistic profits cannot be made in situations where competition is insufficient or not adequate? How are already existing landlord ports handling their pricing activities? What is the pricing policy at Tema Port at present and what will it be when the privatisation takes off? How do customers see Tema Port charges, that is, are charges too high? The answers to these questions and some suggested solutions to them are the task of this study. I must acknowledge that this study will deal with the problem in a limited environment of privatisation and in a case where the market operates in an “almost” captive market.

1.2. OBJECTIVES OF THE STUDY

- To examine the appropriate pricing policy for the port authority where the overall revenue for the supply of infrastructure, land and other facilities will be sufficient to defray the long-term marginal cost, whilst at the same time be a value based tariff.
- To investigate the new proposed tariff regulations to see whether they will allow the private port operators to price as conventional business undertakings, but at the same time, allow for enough structures to be put in place to ensure that monopolistic profits cannot be made in situations where competition is insufficient.
- To present based on studies of port pricing policies of other landlord ports, alternative solutions and make recommendations concerning the pricing policies that can be implemented by the Port Authority and private operators of Tema Port.

1.3. METHODOLOGY

General information was be collected on port pricing, port pricing in a landlord port, port pricing in Tema Port and on port services price regulation. Data were collected from relevant references, journals, articles, periodicals and books that were very relevant to the study. Internet research was also undertaken. The methodology further employed discussions with experts in the subject area. The discussions and analysis were also based on the writer's experience as the officer responsible for marketing Tema Port and from field trips attended during the course. The methodology for price setting presented in this study is as follows.

- An introductory discussion on theoretical approaches to port pricing.

- A framework is presented by the use of a charge-flow diagram for analysing the allocation of port charges among principal and intermediate parties in a landlord port.
- In assessing the extent of market power in the port services industry, the systematic analysis of the complex issue of market structure, the five forces model developed by Professor Michael Porter of Harvard University is used to analyse the competitive environment. (Competition management).
- To conduct an enquiry into whether or not some or all prescribed port services are to be subject to price regulation and, if so, the appropriate form of such price regulation.
- Finally, the methodology is discussed and illustrated using the case of Tema Port and drawing conclusions as to the unique form of the pricing system to be adopted by Tema Port, Ghana.

It is however acknowledged that there could be unavoidable limitations that would affect the complete satisfaction of the study, such as limited literature, and difficulty in obtaining cost and other statistical information from Tema Port. Research and discussions on port pricing in the past have concentrated on the pre-privatisation era and technical aspects of port tariffs, very little commitments have really been made on price setting systems of a privatised port.

Despite such limitations, this study has been able to bring into focus some guidance on how to ensure that, in developing a new pricing system for privatised ports, consideration must be taken of the institutional/ operational structure of the involved port and its competitors. The appropriate regulatory structures that must be put in place should not be forgotten.

CHAPTER TWO

2. THEORETICAL APPROACHES TO PORT PRICING

All products and services have a price just as they have a value. Price therefore can be defined as the amount of money charged for a product or service, or the sum of the values that consumers exchange for the benefits of having or using the product or service. Whereas costs set the lower limit of prices, the market and demand set the upper limit. The consumer balances the price of the port service (Tariff) against the benefits of owning it. Thus, before setting prices, the port must understand the relationship between price and demand for its service.

As a service centre, the port is dealing with two partners, which are vessels (shipping lines) and the cargo (shipper). Each partner is required to pay certain port charges as they are using facilities and services provided by the port authority and /or the stevedoring company/ terminal operator. The prices charged by the port generally fall into one of the three categories- charges on vessels, charges on goods, and charges for specific services rendered.

To be able to effectively analyse who provides what service, who the recipient is and who bears the price the different approaches to organizing a public port are grouped into three organizational structures: (Menzel, 2000, pp.7-8)

- Tool Port: - The port owns the land, infrastructure and fixed equipment, provides common-user berths and rents out equipment and space to cargo-handling companies and other commercial operators on a short-term basis.
- Service Port: - The port provides infrastructure, berths and equipment but also services to the vessels and their cargo. This may be a public port as is the case for Dubai and Singapore, or a private port as is the case of Felixstowe.
- Landlord Port: - The port owns the land and basic infrastructure but allows the private sector to lease out berths and backup areas either through a capital lease or concession agreement. This is the most common structure and is

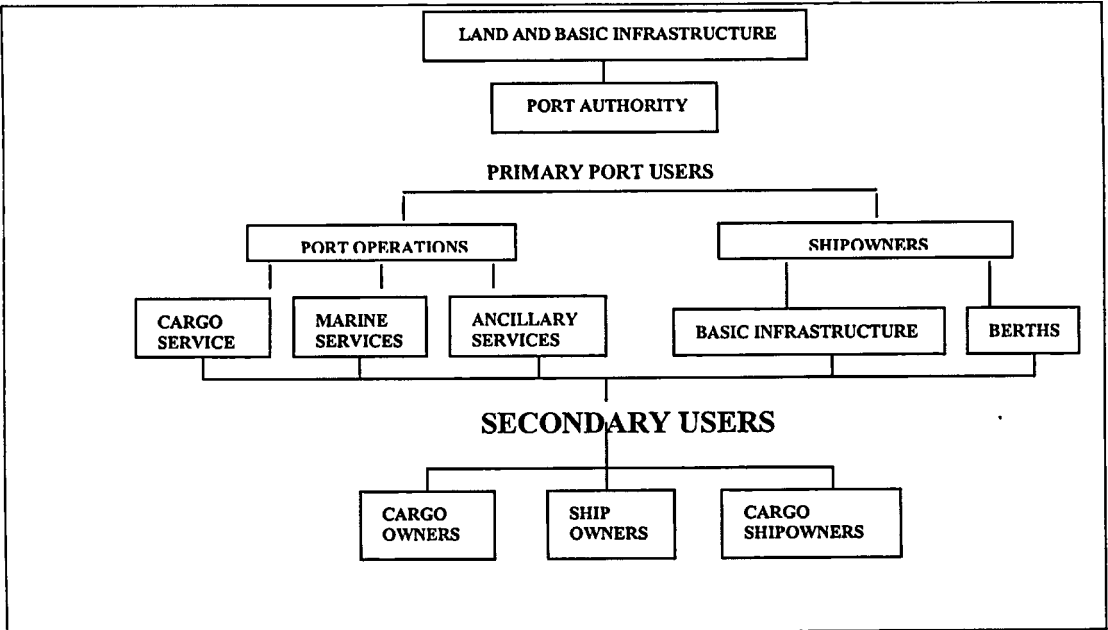
found in Rotterdam, Hamburg¹, Hong Kong and China container terminals.
(Cass,1999,p.39, p.191,p.97, p.112)

Since this study is about a landlord port, an illustration of the relationship between the port authority and port operators and users is indicated in figure 1. The pre-conditions for the pricing structure in such a port for the purposes of this study are:

- That the port authority constitutes a landlord which manages the basic port assets in the national interest by letting land and infrastructure to port operators in an efficient manner, with proper regard to equity,
- That port operators and other undertakings, which need to be located in the port, lease the land and infrastructure in order to supply ship, cargo and associated services.

In Figure 1, the relationship between the port authority and port operators and users is indicated.

FIGURE 1: CATEGORISATION OF PORT USERS



Source: The restructuring of National Ports (C.V. Niekerk) 2000

¹ Although technically Hamburg is a landlord port, it also has a public sector cargo handler which accounts for 70 percent of the cargo handling in the port.

2.1 BASES AND OBJECTIVES FOR PORT PRICING PRINCIPLES

Arnold (1985)², suggested that “port tariffs were based on a mix of pricing strategies designed to reflect the demand for port services, the competition between ports, and the cost of providing the services”. So that the main port pricing principles may be classified as: cost based, strategic, demand based and “ commercial” pricing. The tariff structure and the pricing at a port will reflect the political, economic and social environment within which the port is operating. It could be a welfare economics perspective using public enterprise theory or a private enterprise pricing in a commercial setting.

The appropriate pricing policy for the port authority should be that of a state enterprise, while the port operators, should price as conventional business undertakings. If this is the case, then in broad outline, the following principles should apply.

- In respect of the supply of infrastructure, facilities and services that constitute either a natural or technological monopoly, the overall revenue should be sufficient to defray the long-term marginal costs. Those costs will include the costs of the capital employed and the depreciation of the assets, as well as the costs of personnel, maintenance and other services associated with the supply.
- When the technology involved and the structure of the market allows adequate competition (where monopolistic profits cannot be made) in the supply of port services and facilities, then the pricing of the supply should follow business principles. It is obvious that the supplier of port facilities and services in those circumstances will need to observe different accounting conventions and operate under a different status to the supplier of port infrastructure constituting a monopoly.
- It is also advisable to ensure that the port authorities earn sufficiently from current revenues to finance improvement for the basic infrastructure of the ports, its general development, to subsidise port services, which cannot cover

² As quoted by Marlow & Strandenes in their article Port Pricing and competitiveness in short sea shipping-2000

their direct costs, and to adapt charges to ensure the eventual viability of as many services as possible.

Objectives of pricing principles

- ❑ Cost of Services: - The port should on the whole recover the costs of services rendered and facilities provided in order to sustain their continuity and possibly to improve them.
- ❑ Efficient use of port facilities: - The tariff should be designed in such a way that it will stimulate the efficient use of the port facilities and equipment.
- ❑ Promotion of Trade: - Usually port charges represent only an insignificant fraction of the prices of export/ import commodities. For the promotion of export trade maximum favourable treatment should be considered without discriminating imports.
- ❑ To maximise the cargo throughput.

It should be recognised that port-pricing objectives will be different for economists, governments, port administrators, and port users, and one must appreciate the possible conflicts of interest between these parties. The port should therefore give a clear indication about the basic objectives of their tariffs and should design the tariff structure in strict accordance with the organization of the port.

2.2 COST- BASED PRICING

This has been the traditional approach to pricing and it is considered as being fast and easy, and they can reveal the minimum price level necessary for the company to remain profitable. The cost based tariffs can maximise the use of port services. With respect to the antecedents of port pricing, the “ Formula of Freas” (U.S. Maritime Commission, 1948) was the first mechanism of port pricing that related tariffs and costs. This method was applied to the ports of the United States in the late 1940's.

The following guidelines may be necessary for cost- based pricing.

- ❑ The full cost of providing port services and facilities should be recovered from port users.
- ❑ Those costs arising from services or facilities provided for an identifiable user or group of users.
- ❑ Costs which cannot be attributed to specific user groups should be allocated according to the following principles:
 - a. All port users should make some contribution to common costs
 - b. The contribution that any group of users makes should not exceed the cost that they would incur if they were the sole users of the port.
 - c. Within these limits cost allocation should reflect the benefit that a user derives from the service provision.
- ❑ The structure of port charges should, as far as possible, reflect the structure of costs.

In view of the above guidelines, management accounts are an essential tool for setting tariffs and evaluating the financial results. They enable port costs to be allocated between users in a way that reflects the physical and financial demands that the users are making. However, surprisingly for a large number of ports, reliance is placed on the statistical control of performance without extending the control to costs, mainly because costs accounting is not undertaken. Indeed, accounting systems in probably the majority of ports do not enable cost accounting and in any event, where the effort has been made to calculate unit costs, so many assumptions in the apportionment of joint and common costs have been necessary that the costs identified are insufficiently sensitive to performance to enable their use in measures for effective management.

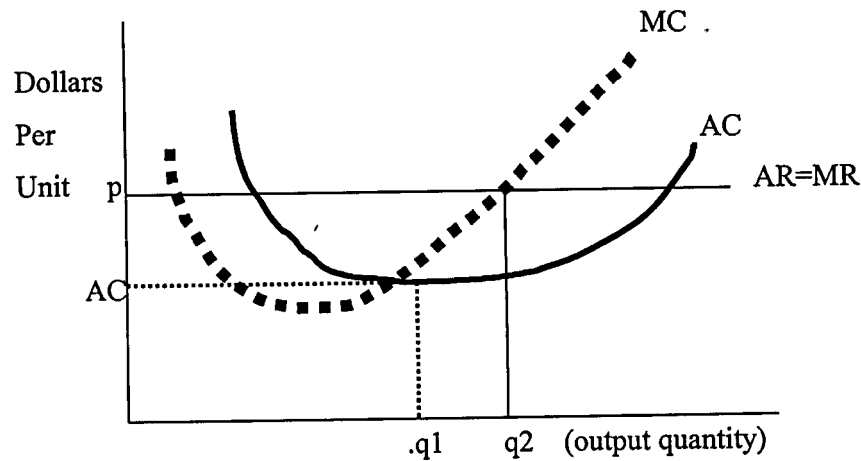
Nevertheless, most ports are not regarded by their owners or managers as business enterprises, which must contain costs in order to survive in a competitive market. Instead, public ownership of ports, usually accompanied by subsidisation in one

form or another, prevails worldwide and cost efficiency is often not of paramount importance.

2.2.1 Marginal cost pricing.

According to Bennathan & Walters (1979,p.31) the argument for marginal cost pricing is that, under conditions where the rest of the national economy behaves as if perfect competition existed, the price should be set equal to the cost of the resources absorbed in producing the service. Talley (1994,pp.61-62) indicated that it has been demonstrated that if all economic activities in an economy adhere to marginal cost pricing, the net benefits of economic activities to consumers will be maximized. An implicit assumption of marginal cost pricing is cost efficiency- goods and services are produced and provided at their lowest possible cost. If not, the net-benefit maximization property of marginal cost pricing does not hold. In practice, strict marginal cost pricing is virtually impossible and adjustments must inevitably be made to obtain a second best solution. (see figure 2).

FIGURE 2. MARGINAL COST PRICING/ OPTIMUM OF THE COMPETITIVE FIRM.



SOURCE: Price Theory and Application, 1992

Geometrically, Marginal Revenue (MR) is the slope of the Total Revenue curve. For the competitive firm pictured in the diagram, this slope is a constant equal to the market price P. That is what is plotted in the lower panel as a horizontal line of height P. For a price-taking firm the Average Revenue (AR) curve and the MR

curves coincide as a horizontal line at height P . Again, geometrically, Marginal cost (MC) is the slope along the Total cost curve. This slope is not a constant but instead has different values at different levels of q as shown in the diagram.

Since MR is the slope of the revenue curve, and MC is the slope of the cost curve, it follows that MR and MC are equal at q_2 (where the MR and MC curves intersect) that is the firm maximizes profits by choosing the level of output where $MR = MC$. For the purposes of the port, if the price exceeds the cost (i.e. $MR > MC$), too little of the service will be produced, and resources will be used inefficiently to produce other services. Similarly, if the price is below the cost, ($MR < MC$) too much of the service will be produced relative to the quantity of other services. It is usually difficult for the port to estimate the marginal costs at the expected levels of demand. If the revenues obtained from these tariff items are not sufficient to cover the port-wide costs, then additional tariff items are used to generate revenue to cover the difference.

The output at which $MC = MR$ is an optimum only if the MC curve cuts the MR curve from below. The MR and MC curves intersect at two points. But at the left-hand intersection, MC cuts MR from above. This means that just to the right of that intersection, $MR > MC$ (marginal revenue is greater than marginal cost). So economic logic suggests that it pays to produce more units until the right-hand intersection is reached where MC cuts MR from below. This is where the problem lies for the port. When the level of utilization is well below the optimum level as mentioned above, priority should be given to building up trade, which is time-consuming and not easy to achieve. This is what makes the application of marginal cost pricing in ports to imply a subsidy requirement.

In view of the above discussions, one of the first questions that arise is whether marginal cost pricing should be based on long term or short-term costs. The long-term marginal cost concept becomes relevant when economies of scale can be achieved and the capacity meets the demand. If the capacity exceeds the demand, as it normally does within ports, then the optimal price will always differ from the long-term marginal cost. Therefore, many economists consider the issue of

economies of scale as irrelevant and maintain that port pricing must be based on short-term marginal costs.

Another practical problem that arises within the application of marginal cost pricing to ports is, the inability of ports to determine the marginal costs of their services. Typically, port accounting systems are incapable of determining the increase in costs as a result of the provision of a marginal unit of service. Even if accounting and management information systems are in place to make such calculations, they would not be economic marginal costs required for determining marginal cost prices if the port is cost inefficient.

Bennathan & Walters (1979,p.41) maintains the following: "But port authorities are never totally ignorant of cost. Usually, they have only hazy or erroneous notions about fixed cost, but they generally can formulate much more accurately the magnitude of variable (or avoidable) cost. If the variable cost of a service can be guessed with some confidence, marginal cost can be derived from it;" It is worth noting that Meyrick in one of his papers, (1989), had considered that, "insofar as the focus in pricing is on costs at all, it is on the average cost of service provision rather than the marginal cost" and that typically "port accounting systems are incapable of providing a basis for pricing on anything other than average cost basis".

When applying marginal cost pricing in practice, deficits might occur and the question, which arises, is whether that is acceptable. Recognising that the application of short-run marginal cost pricing in a decreasing cost industry, such as a port, would inevitably result in a financial deficit, Button proposed three ways of recouping capital expenditure. (Button, 1979). One of these would involve a two part tariff using the marginal social opportunity cost based method for the cargo handled plus a fixed periodic standing charge being levied for the right to use the facility.

The presence, or absence of acceptable estimates of marginal cost neither proves nor disproves the relevance of the marginalist analysis. Given the difficulties that

arise in constructing marginal- cost pricing port tariff system, alternative pricing structures for ports should be investigated, one of such is full- cost pricing.

2.2.2 Full-cost pricing

Full-Cost pricing can be defined as a pricing mechanism, which determines the prices of the outputs of multi-product firms by allocating the full cost of production to all outputs. This pricing mechanism assumes the demand for the firm's output are insensitive to price. This type of pricing is applicable to ports, since a port may be perceived as a multi service firm and evidence suggests that the demand for port services is relatively insensitive to port prices.

The best-known full- cost price theory was that developed by Andrews (1949), which was presented in his book *Manufacturing Business* as an alternative to marginalism. On the basis of his empirical research and his experiences as a consultant, he argued that businessmen normally quote a price, which is determined by the average direct cost of the product or service. The difference between price and average direct cost he defined as the " costing margin", " the amount which the businessman thinks he can take from the market without giving possible competitors an opportunity to cut into it (or his share of it) in the long run". This policy is justified on the assumption that average direct costs will be relatively constant in the short run and correspond to an L- shaped slope in the long run.

While full costing can be regarded as a process of approximating points on an unknown demand schedule, it is also a behavioural response to the problem of imperfect cost information, particularly the inability of many firms to distinguish satisfactorily between fixed and variable costs.

Despite full costing generally being presented as a long-run theory, reconciliation with traditional marginalist price theory is still possible within the framework of a single pricing period. Dorward (1987,p.103) states "Under implicit marginalism, price will change in direct response to a substantial shift in demand, while full

cost theory predicts an invariant price in the short run". Therefore, it seems appropriate to focus any comparison of the profit performances of the two theories on the effects of unexpected changes in the rate of capacity utilisation, using the latter as a proxy for substantial shifts in demand.

2.3. VALUE- BASED PRICING

According to Kotler et al (1999,p.702) value- based pricing has to do with setting price based on buyers' perceptions of product or service value rather than on cost. The company sets its target price based on customer perceptions of the product or service value. The targeted value and price then drive decisions about product design and what costs can be incurred. A port using perceived- value pricing must find out what value buyers assign to different competitive offers. " The value added to users' activities is estimated through their willingness to pay a price for a service or a facility, or more specifically, on their reactions to changes in that price", (price elasticity)³.

The value-based pricing is also referred to as the customer- based or demand-based pricing. At its simplest, demand-based pricing indicates that when demand is strong, the price goes up, and when it is weak, the price goes down. There is an underlying assumption that an organisation operating such a flexible pricing policy has a good understanding of the nature and elasticity of demand in their market.

However, measuring perceived value could be difficult. The port tariffs amenable to this approach are those of a general nature, such as dues, but also relevant is a portion of the tariffs for specific services, such as towage or stevedoring. This means that a higher price is charged for handling more valuable commodities as these are assumed to be more elastic with regard to price than low-value commodities.

³ Price elasticity means the percentage change in the quantity of the service or goods demanded due to a percentage change in the price.

Even this approach may not be enough on its own, but when it is linked with an appreciation of competition based pricing, it provides a powerful market-orientated perspective that cost-based methods just do not provide.

2.4 PERFORMANCE-BASED PRICING

UNCTAD (1995, pp.19, 20) indicates, “Performance-based pricing promotes efficient behaviour of the users of a facility”. “The principal performance-based tariffs are for berth hire and transit storage”. The performance-based strategy charges for the use of fixed assets in order to promote the level of utilisation which is close to but not exceeding capacity. The charges are designed to reward efficient users and penalise those who are not. Meaning a performance standard should be set by the port and the basic tariff rates are set by using the average annual costs for providing the asset or performing the activity. A rebate is given to port users whose performance is above the specified performance standard, and a penalty is charged to users whose performance is below that standard.

Jansson & Ryden, (1979) developed a theoretical model of optimal port charging which proposed an occupancy charge as one of its components. They considered it as an example of “input pricing”, that is prices depend on the amount of resource used. Jansson and Ryden thus, introduced a two-part tariff:

- A charge per tonne of cargo that would be differentiated with respect to the elasticity of demand.
- A charge levied on the carrier to reflect the opportunity cost of using the facility that is optimal occupancy charges.

Ideally a port user would attempt to minimize costs and choose the low-cost efficient combination of services and facility use. So if users are required to pay for the cost of resource used and penalised for the misuse, it can be assumed to limit their demands and thereby reduce the cost of unnecessary expansion of port services and facilities. The new Tema Port tariff according to the port financial consultant is conceived as a mix of performance-based and value-based strategies.

(International port consulting, 2000,p.52) The performance-based pricing strategy has been applied where suitable and effective, for example, when charging for general port infrastructure and berth utilisation.

The emphasis has been to reduce ship turnaround time and speed up the flow of cargoes through the port. Ships are likely to stay longer at anchor instead of waiting at the berth and this would substantially reduce the berth hours to be paid for. Delays on board will be further minimised. The stevedores and terminal operators are also likely to consider working towards a 24-hour operation and with more gangs, if possible.

The performance-based pricing results in a price that reflects variable or marginal costs. This implies that the cost of the facility should also be recovered through other tariff or perhaps, through subsidy.

2.5 COMPETITION-BASED PRICING

Often, price comparison is the nearest a potential buyer can get to working out the relative quality of similar competing offerings. Consumers will base their judgements of a product or services value on the prices that competitors charge for similar services. In going-rate pricing, the firm bases its prices largely on competitor's prices, with less attention paid to its own costs or to demand. (Kotler et al, 1999, p.704)

According to Lambin (1993) there are two aspects of competition that influence an organisation's pricing. The first is the structure of the number of competitors, that is, the closer to perfect competition the market comes, the less autonomy the organisation has in price setting. The second competitive factor is the product's perceived value in the market. In other words, the more differentiated an organisation's product/service is from the competition, the more autonomy the organisation has in pricing it, because buyers come to value its unique benefits.

An organisation that decides to become a cost leader in its market and to take a price-orientated approach to maintaining its position needs an especially efficient

intelligence system to monitor its competitors. It must learn the price and qualities of competitors' offers and use them as a starting point for its own pricing.

CONCLUSION

Research into the dynamics of pricing and therefore port pricing is still at an early stage of development, but the widely contrasting results arising from different model specifications and empirical analyses suggest the need for considerable caution in making a strategic pre-commitment to any one price path over a product/service life cycle. The uncertainty created by the effects of competition over time and the many possible price reactions which may be required seem to imply the need for flexible, or discretionary, behaviour on the part of those managements wishing to follow profit-maximizing pricing strategies.

Although cost-based, customer-based and competition-based pricing strategies are discussed separately, a combination of the different perspectives seems to be necessary to compensate for the weaknesses each pricing perspective entails. In addition, price limits set by government through regulation must of course also be taken into account when setting prices.

CHAPTER THREE

3. PORT PRIVATISATION AND PRICING

The idea that private ownership has advantages over public ownership in a market environment is not new. It has been an emphasis on the reduction in the public sector's borrowing requirements and the improvement in efficiency that can be expected when ownership is transferred to the private sector. This transfer of control and/or ownership rights from the public to the private sector is termed privatization.

Privatization has played a fundamental role in reform programs aimed at achieving higher levels of microeconomic efficiency and fostering sustained economic growth in both developed and developing countries. Privatization is expected to increase the efficiency in the allocation of resources, eliminating, for example, labour redundancy. Privatization sets up the correct incentive structure in the economy, attracts managerial and technological resources from the private sector, and broadens share ownership.

There are also benefits at the macroeconomic level. If done correctly, privatization can lead to lower public sector borrowing requirement, lower fiscal deficits, and a more developed financial sector. The privatization of the seaport industry has not been left out.

3.1. PORT PRIVATIZATION

Before the 1980s, a government's extensive involvement in the ports as state-owned enterprises was the prevailing practice around the world. (Thomson, 1997) Country leaders believed that a government's extensive participation in certain sectors was the key to assuring economic success, which in the years hence has generally proven to be incorrect. The increasing intervention of the private sector in performing a number of essential activities related to the effective functioning of the seaports has generally been an accepted trend during recent years. This principally concerns the handling and storage of freight

transiting via the port, and funding and operation of the infrastructures and equipment required for these activities. This trend has involved the setting up of complex, multi-dimensional partnerships between the frequently public port authorities, and the terminal operators.

In practice, the extent of private sector intervention can vary significantly from port to port. Some of the most common methods employed to bring about port privatization are briefly mentioned below: (Cass, 1999, pp.44-49)

- Corporatisation – This constitute a corporate restructure, where a state-owned company is established to take over the business of providing landlord functions. The adoption of private sector business principles becomes mandatory and, in most instances, all commercial operations in the port are transferred to the private sector. The corporatised port company's role is therefore more concerned with the planning and provision of port facilities as opposed to terminal operations.
- Commercialization- It involves the process where government retains ownership and control of the ports in which commercial principles are introduced into the way a port manages its business. A port authority is maintained and may not operate exclusively as a landlord, but the private sector undertakes many though not all commercial activities.
- Joint Venture- This involves the setting up, by a port authority and one or more other organizations, of a jointly owned independent organization. The organizations involved share the costs and rewards, (both profits and gained technologies/expertise). An example can be given of China. (Frankel, 1998, p.236) "At the same time, ownership of existing ports was transferred from state to municipal governments, and many ports or terminals were privatized or became part of new joint venture enterprises".

In view of the number of different privatization strategies available to states, they will however assert a number of reasons for privatization of its seaports. These distinctions are more than an exercise in semantics. They identify a basic characteristic of private sector involvement in the port sector. For the purposes of this study, the corporatization criterion is considered, where private ownership of all assets other than land but with public control over development of port facilities, (landlord situation) holds.

The development of containerized transport has required much investment in port equipment, specialized terminals and so on. Economies of scale have led to larger, more specialized ships. Competition between ports has started to grow. Ports have become increasingly capital intensive. As a result, governments are reorganizing the way ports are run and permitting more private owners whom they believe can inject capital into the ports, and make their investment work by having more trade go across the wharves. Investment in what is really a commercial enterprise being operated for profit should be the province of business, not government. (Van Niekerk, 2000, pp.1-5)

Again, the enthusiasm for increasing private sector participation in port operations derives from the failure of public port operations to meet the following objectives:

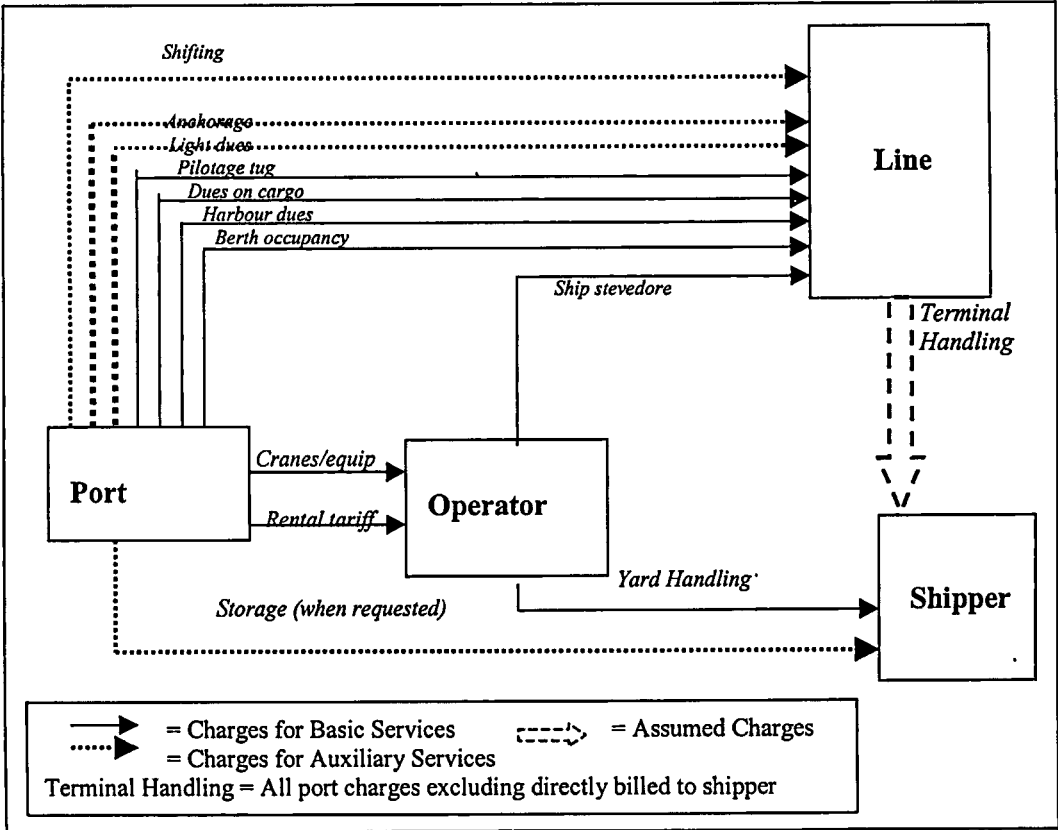
- To provide services which are efficient and cost-effective from the port users' perspective.
- To respond to changes in cargo-handling technologies.
- To provide choices of services and foster competition.
- To make timely capital investment to improve efficiency and expand capacity.
- To enforce labour discipline in the face of strong trade unions.

Newly privatized ports had to develop new pricing systems to cater for the changes that would occur as a result of the privatization; no matter the form it takes.

3.2. PRICING IN A LANDLORD PORT.

The following charge-flow diagram in figure 3 adopted from an article in International Journal of Maritime Economics, (Ashar, 2001, pp.52-78) has identify services and charges in a Landlord port system (Tema Port) according to service providers, service recipients, and payees, and appears appropriate for the current study. Ashar in his original work used Miami port and the diagram's nodes represent parties involved in the port system, the links (arrows) represent charges in the system. Basic charges appear in solid lines.

Figure 3. Flow of port charges at Tema Port.



Source: International Journal of Maritime Economics, 2001,3 but Tema Port data is from the International Port Consulting draft Report, 2000.

In Miami, the port functioned as a landlord port and the terminal was managed by POMTOC¹, a terminal operating company. Stevedores provided ship stevedoring and yard handling was provided by POMTOC and charged to lines. The charge flow shows that the port has no direct charge to shippers. Ashar indicated that, the port charged cargo wharfage to lines based on a uniform tonnage rate regardless of cargo value. The port also charged a small harbour fee² based on ships' GRT. The port charged POMTOC an annual rental fee, unrelated to volume. POMTOC charged lines a uniform handling fee per box (gate charge), regardless of size (20/40 ft), direction (import/export) and content (full/empty).

When Tema Port starts functioning as a landlord port, its charge flow as shown in the diagram will be similar to Miami except for some few differences. Tema Port will charge lines for dues on cargo, harbour dues, berth occupancy, pilotage and the other auxiliary services indicated in the diagram. The port will also charge operators for crane and equipment usage on an hourly basis, and will charge shippers for outside storage and warehousing if they so request. Operators will charge lines for ship handling and shippers for yard handling. These charges are likely to incorporate the respective charges they paid to the port.

The peculiarities of Tema Port as compared to Miami lies with the following:

- The Pilotage charges are received by the port authority while in the case of Miami, the Federal Government receives it directly.
- While there can be a storage charge to shippers if they should request for it, Miami have no direct charge to shippers.

The above comparison of the different port charge-flow illustrates that different privatized landlord ports may have a different relationship/ situation, concerning the service providers, service recipients and the payees. There can be marginal differences in the flow of port charges in different ports. But the main concept worth noting is that in a privatized

¹ Port of Miami Terminal Operating Company is a partnership of the four main private stevedores in Miami.

² An additional harbour fee was collected by the US Federal Government through customs, based on 0.075 percent of the cargo value.

landlord port, the charges of the port authority is for the use of land and infrastructure, while charges by the port operator is for the use of port services. Therefore, the study presents the underlying principles of the pricing policy of the port authority as well as the private operators in the next discussions.

3.2.1 Pricing policy of the Port Authority

The port authority should institute a pricing policy that will be based on an acceptable rate-of-return on an optimized capital. In the case of Tema Port the financial consultant has estimated the acceptable rate-of-return as 15 percent. This will ensure that the authority have the incentive to continue to invest in the replacement and renewal of the asset base required to provide the service for which the price is charged. It allows for some contribution to future investment from retained earnings. The port authority's pricing policy will then be made up of cargo-based charges and ship-based charges. If the emphasis is on ship-based charges, then it is designed to reduce ship turnaround time and speed up the flow of cargoes through the port (Tongzon, 1993).

The port authority's pricing policy should be based on the presumption that costs should be recovered from users unless there is a clear decision by government to offer either a capital or operating subsidy to meet specified community service obligations. There can be four main components to these infrastructure charges: (Van Niekerk, 2000).

- **Wharfage.** This is a charge per unit of cargo loaded or discharged by a vessel. It is payable by the owner of the cargo. However, particularly in the liner trades, wharfage is usually collected by the port organization from the shipowner, who then passes it on to the exporter or importer.
- **Berth rental.** This is a charge levied on the basis of the time the ship spends alongside the berth. It can vary according to the size of the vessel or kept uniform, with a single rate applying to a range of berths.

- Area/site rent. Sites that are made available exclusively to a single occupant are subject to period leases.
- Storage rent. This charge is on warehouses, buildings and storage facilities.

The problem according to Bryant, (2000) here lies in the structure of the port authority costs, not in the specific charging mechanism used to recover them. This has not been easy for the port authorities to achieve; to be able to raise funds for the harbour dredging, port construction activities and navigation safety improvements solely from their own earnings. Sometimes, there must be government subsidies or loans from multilateral development banks. Some other governments have tried to establish a development fund for such purposes. The case of the proposed United States (US) Harbour services user fee (HSUF) is an illustration. Following the decision of the US supreme court striking down the Harbour Maintenance Tax (HMT), the Clinton administration has developed a proposal for a replacement funding mechanism for harbour dredging projects in the US. The HSUF, introduced in congress as the Harbour services Fund Act of 1999, constitutes that proposed replacement.

Bryant, quoted President Clinton stating in a speech the following:

“ We must create sustainable ports for the 21st century. International trade will nearly triple over the next two decades and more than 90 per cent of this trade will move by ocean. I propose a new Harbour services Fund to help our ports and harbours remain competitive in the new century, by deepening them for the newest and largest ships, and by providing state-of-the-art navigation tools for preventing marine accidents. We must do both. Just last week, I released, or pledged some extra money to the New York Jersey Harbour Project in the face of clear evidence that if we do not do it, the harbour will not remain competitive and thousands of American jobs could be lost. We can do this and make those harbours environmentally safer at the same time.”

The revenue of this fund is supposed to be used to finance harbour dredging, port construction and navigation safety improvements. The introduction of the new fund bill brought about confusion in the White House between shippers and carriers.

If congress attempts to impose a proper dredging user fee against commercial vessels that actually make use of the service, the fee per vessel will be so high as to result in cargo diversion. If it attempts to spread the user fee across a broad group of vessels so as to avoid cargo diversion, it risks having the scheme struck down by the courts.

Even the Asian Shipowners Forum, which, was held in Tokyo on 24 May 1999, agreed that the proposal to shift such a huge cost on to shipping lines as a user fee should be firmly opposed by the world shipping industry, together with other affected industries. (Cho, 2000)

The U S illustration goes to strengthen the fact that, the past and future investments in channels, and other major port constructions, are a matter of state significance. Short-term pricing formula, which only reflect current cost, will make it impossible for the Authority to generate sufficient funds with which to undertake capital expenditure. But the level of port activity has a significant impact upon the employment; environmental and commercial activities, and therefore these factors need to be taken into account in determining pricing.

3.2.2. Pricing policy of private operators

The first objective of the private operator may not necessarily be to maximize profit but rather to earn an acceptable rate of return, which can cover his investment. Included in this rate of return are the funds for replacement and renewal of existing facilities and equipment, as well as the money needed to finance the expansion of capacity to meet growth in demand. Where there is competition, the charges to the users may be set according to procedures included in the contractual agreement. This agreement may require that the port user be charged according to the existing port tariff or may stipulate the individual charges that can be levied. Alternatively, the private party may be allowed to

specify the charges as part of their proposal. If the tariffs are to be regulated, the agreement will specify the procedure for periodic adjustment of the level of these charges.

Sometimes the pricing policy of the landlord port authority has an effect on the private operator's pricing policy. For example, if the price levels of the port authority are reviewed upwards (increased), the private operator is likely to increase his tariffs too, depending on the relative elasticity of demand and supply of his services. The case of Melbourne Port can be used to illustrate this scenario. (Tongzon, 1993). Tongzon indicated that, Port of Melbourne Authority (PMA) on 1 July 1990 implemented a new pricing policy structure. The most significant feature of the PMA's new pricing policy is its shift from cargo-based charges to charges on ships. The shipping and stevedoring companies bore the burnt of the new charges directly. One of the immediate effects has been the introduction by shipping companies of a port service charge³ levied on cargo owners.

He further wrote that the port service charges were allegedly found to be in excess of the difference between the old and new wharfage. In theory, the incidence of port charges depends on the relative elasticities of demand and supply of shipping services. Given that the shipping market is generally characterized by low levels of competition with users facing limited choices of service provider, it is probable that the great bulk, if not all, of the increases in port charges could fall on the shippers.

The allegations made by the Victorian Importers Association about the enormous port service charges imposed by the Australia to Europe shipping lines goes to strengthen this point. It was also claimed that the practice of price discrimination has been prevalent with higher port service charges for small shippers and lower charges for the big shippers.

³ This includes the reduced wharfage and a surcharge purporting to cover the increase in the shipowner's operational cost caused by the PMA pricing.

As much as a greater pricing flexibility for the private operator is needed to adjust the prices to promote operational efficiency and to recover the cost of offering a better quality of service, care must be taken.

“Ethiopia Rejects Increased Djibouti Port Charges” was one of the headlines of the Panafrican News Agency on January 23, 2001⁴. This story was about landlocked Ethiopia rejecting an increase of 150 per cent in port charges, effective 15 January, by neighbouring Djibouti on grounds that Addis Ababa violated the 1999 agreement between the two countries. Ethiopia insisted that under the agreement, port charges could not be changed without mutual consent, and that the charges were too high.

In response to this there was a foreign ministry statement saying; “the Dubai Port International, which in 1999 took over the management of the Djibouti port under a 20 year contract, last week, introduced a new tariff of 2.50 US dollars per tonne of transit cargo, or a raise of 1.50 dollars”. However, the foreign ministry said talks between the two countries would be held in Addis Ababa the following month to resolve the row.

Another feature that is relevant to the pricing policy of the private operator is the rate of inflation in the country of operation. Pricing in foreign exchange may be necessary if there is volatility in the domestic currency or high rates of inflation. This is of concern because a large percentage of the expenses of a private operator may be denominated in hard currency, for example, for capital and interest payments, for equipment purchases and for selected management personnel salaries. Therefore, private operators are interested in knowing whether the regulations binding their contract allows them to charge in foreign currency. (Landlord Ports Bill, 2000, section 69, subsection 3) With Tema Port it was clearly stated in the port bill that stevedoring charges should be paid in convertible currency. “All port dues and stevedoring charges shall be paid in convertible currency except Ghanaian registered vessels may pay the equivalent in cedis”.

⁴ It was posted to the web on January 23, 2001. <http://allafrica.com/stories/2001>

3.3 COMPETITION MANAGEMENT

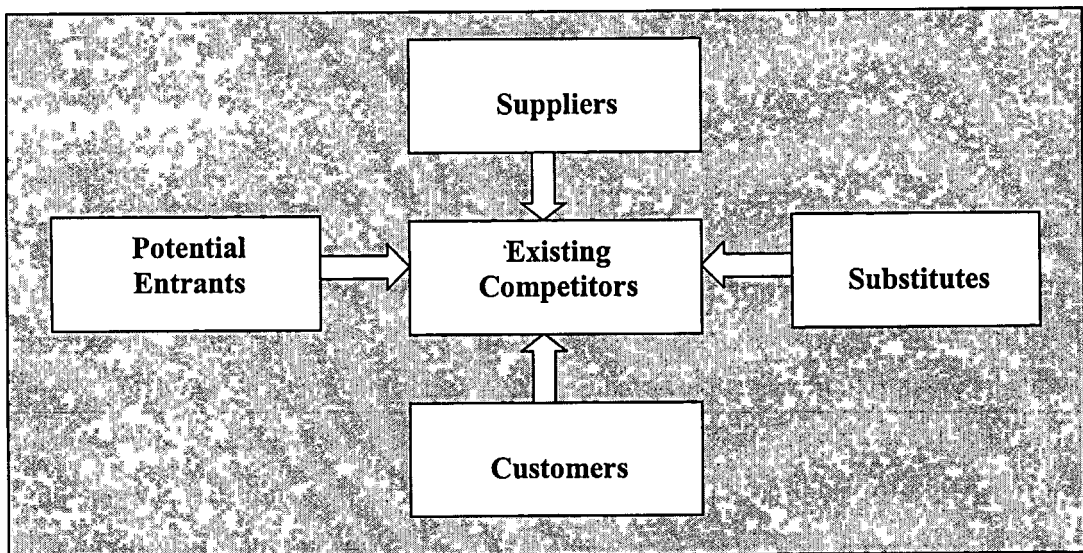
The port industry offers a number of opportunities for creating monopolies. The potential of creating a private monopoly has become one of the more contentious issues in the effort to introduce port privatization. The perceived difference between a public and private monopoly is that the former operates inefficiently, using its monopoly position to pass on higher costs in the form of increased port charges and delays, whereas the latter operates more efficiently but seeks to maximize profits by increasing charges, even at the cost of lowering the potential port traffic.

The design of an effective transfer of port operations and investments from the public sector to the private sector requires an assessment of these competitive forces and the design of contractual agreements, which will promote either direct competition or the potential for competition. The privatization strategy should maximize the potential for competition. There is no universal rule for the degree of competition and regulation desirable in a port with a particular volume of traffic, but for container ports there is acceptance of some thresholds.

In the words Trujillo & Nombela, (2000) A port handling fewer than 30,000 TEUs a year is too small to have several terminals and operators. The best solution is to have a single operator and to regulate its charges. In a port handling between 30,000 and 100,000 TEUs a year, it is feasible to have several operators, possibly sharing a single terminal. There would be intra-terminal competition, with stevedoring companies competing to provide cargo-handling services. A port handling more than 100,000 TEUs a year is big enough to have a number of terminals operated by several companies that can use separate berths and can manage them better. The terminals compete with each other. Finally, in a region where container traffic is above 300,000 TEUs a year, the market size allows for the existence of several ports that can compete for traffic. Such inter-port competition reduces the need for control over private operators' prices.

A useful approach to defining competition is to say that effective competition exists if none of the participants in the relevant market can exercise substantial market power. In assessing the extent of market power in the port services industry, the market structure must be analyzed. To facilitate the systematic analysis of the complex issue of market structure, this research has suggested the use of the five forces model developed by Professor Michael Porter of Harvard University: entry and the threat of entry; threat of substitution; bargaining power of the buyers; bargaining power of suppliers; and rivalry amongst current competitors. Figure 4 gives a diagrammatic representation of this concept.

Figure 4. Michael Porter's Five Forces Model.



Source: Competitive Strategy: Techniques for analyzing Industries and Competitors, Porter, 1980.

This model was originally devised as a tool for identifying opportunities for achieving sustained high profits, but can also be used as a tool for the analysis of market structure and the intensity of competition under different market structures (Porter, 1980). At its core is the recognition that market power is a consequence of the complex but systematic interplay of a number of structural and behavioral elements.

This focus on market structure and market power requires that some thought be given to defining the market in which each port service provider operates. The central feature of effective competition is the ability of other participants in the market to respond to an increase in price or deterioration in service quality in a way that effectively disciplines the behavior of the firm making the change. However, few markets are so perfect that minor or transient variations in price or quality would lead to significant changes in the decisions of buyers and sellers. So in ports where competition is not possible, price and quality of services can be regulated to prevent market domination by a few operators who may try to exploit their position to extract high prices from port users. The system of regulation is the next discussion of this study.

3.4. REGULATORY FRAMEWORK

For port services where competition is weak or absent, some form of direct regulation is required. The focus will be on ensuring that revenue targets and price controls for the regulated entities are set having regard to the avoidance of monopoly rents and the provision of commercial incentives to invest in and operate port infrastructure efficiently. Anti-monopoly laws are well established in North America and Western Europe.

The port regulation function according to Baird (2000) involves substantial statutory powers being given to a port's management. Duties, powers and responsibilities carried on under the regulatory function are normally but not always the sole preserve of the public port authority, and will typically include the following:

- Overseeing of conservancy and pilotage
- Providing vessel traffic management or surveillance (VTS)
- Enforcing application laws and regulations
- Maintaining port police force and emergency service capability.
- Licensing port work.

- Safeguarding port users' interests against the risk of monopoly formation, and the controlling of natural monopolies.

The E/ ESCAP/ CTCTID/3 document according to the report of Economic and Social commission for Asia and Pacific mentioned the establishment of a regulatory body that is separated from the port management, and a level of regulation that does not prevent commercial behavior and finally, transparent and acceptable regulatory procedures are required. It is easier said than done. The Ministry of Surface Transport of India has established an independent port-pricing board to review requests for tariff increases (Tariff Authority). The intention is to remove politics from the process, and provide a clear basis for price-setting. However, it has encountered problems because of conflicting political pressures and the tendency to establish fixed procedures to avoid these conflicts.

Furthermore, by comparison with the complex framework within which a government operates, the private sector functions within a commercial environment. This in itself is one of the strengths of the private sector and, given adequate freedom to operate, allows it to focus resources on specific criteria of success. Government actions, therefore, to control tariffs or cap profits and institute other restrictions have a direct impact on the primary objective of the private sector and may make projects unattractive, unless clearly predefined. An example is the contract that took place between the government of Sri Lanka and South Asia Gateway Terminals. (Gunasekera, 1999) "The decision to appoint a port regulator was jointly made hours before the country's largest ports deal between the government of Sri Lanka and South Asia Gateway Terminals was signed last week".

In view of the above, specific tariff structure measures should be adopted only where there is a reasonable probability that pricing structures may impact on the effectiveness of competition. The form and intensity of regulatory supervision should also reflect the extent of the market power against which it is intended to provide protection.

For example, a report from the office of the Regulator-General⁵, Victoria indicates the different levels of regulatory framework to be proposed for the different ports on the basis of the substantial differences in the extent of their market power. They proposed that, with respect to the ports of Geelong, Portland and Hastings, the office would adopt a less intrusive form of regulation. Following a transition period, the office will be involved in the regulation of prices at these ports on an exception basis only. At the same time a form of CPI-X incentive regulation of pricing at the port of Melbourne, similar in principle to that currently in place, will be maintained for the period 2000-2005.

Again, they proposed a form of CPI-X incentive regulation of pricing to be adopted for the period 2000-2005 since this authority is said to be clearly in a monopoly position with regards to the provision of navigation services within Port Phillip Bay. The office intended to invite the port operators of Portland, Geelong and Hastings to develop proposed Reference Tariffs covering prescribed services. These reference Tariffs which should comply with some broad principles, should indicate the maximum charges that the port intends to levy for the use of these facilities. Comments from port users will then be sought on the operators' proposals and the extent to which they adhered to the principles and expectations established by the office.

After final amendments, the office may approve the proposal, and once the office has approved a proposal, the following applies⁶:

- The port operators may adjust the Reference Tariffs each year to reflect changes in the CPI without further approval of the office.
- The port operators will be required to maintain a publicly available schedule of approved Reference Tariffs.

⁵ Review of port services price regulation. Final Report from the office of the Regulator-General, Victoria, 24 December 1999.

⁶ As quoted from the offices' report.

- Changes to the Reference Tariff other than annual CPI adjustments, will be permitted only if the office is persuaded that significant and sustained changes beyond the control of the port operator have occurred since the Reference Tariff was established.
- The port operators may negotiate agreements with port users that contain alternatives to the approved Reference Tariffs, provided that the user is offered the option of retaining the Reference Tariff and enters into such an agreement on a voluntary basis.

In conclusion, while the port reform process must seek to depend wherever possible on competition to discipline market behavior, it must anticipate that there would be a number of areas in which competition would continue to be limited. An independent regulatory body should be put in place and a regulatory framework designed so that in the event where the body determines that continued regulation of prices for some or all prescribed services is desirable, it is empowered to make price determinations.

There is the need for a balance between creating an environment in which the private sector has sufficient confidence and flexibility; to perform effectively while at the same time maintaining minimum safeguards to ensure that overriding government objectives and responsibilities are met.

3.5. IDENTIFICATION AND ANALYSIS OF CONSTRAINTS

□ Role of the Landlord

The characteristics of a privatized landlord port demand non-interference in the commercial sphere of their operation. ("Implementing Port Reform", pp. 7-10) The port authority should be vested with all regulatory and statutory powers required to ensure sound operations of the port facilities. Port reformers (governments) of today must

recognize that improving the competitiveness of their services means that ports must have the ability to respond to market forces. This ability often encompasses certain important elements enjoyed by the private sector, such as the freedom to make budget, investment, tariff, and hiring and firing decisions without going through a bureaucratic maze for approval.

There should ideally be a lack of excessive bureaucracy, which can delay and in some cases has prevented port developments from occurring. It can also become a significant impediment to a balanced development of effective public-private partnerships, since the public port authority must act as a counterpart to the private sector in negotiating and implementing new operational and development formula for the port sector.

This has not been the case for most privatized ports, instead, virtually the same relationship the government had with the port authorities before they became commercialized, continued. For example, some of the central government of the states continued to select the key management personnel. It is normal for the government to appoint the chairman of the port and some of the board members. However, many governments go beyond this and appoint the first tier of management. For example, the chief executive officer and the heads of finance, operations, administration as well as the harbour masters⁷. This means that the selection and assignment of managers is based more on political considerations than merit. The countries that have been most successful in developing professional public port management, e.g. Korea, Singapore and China, fill senior management positions through meritocracy.

Many of these ports were expected to seek conflicting objectives, such as increasing productivity with obsolete technology and restrictive work practices, and reducing costs while serving as employment centres for the regions where they are located. A practical example is given in the case of the Victorian regional ports (Everett & Robinson, 1998).

⁷ This is done as individual appointments or by appointing the chief executive officer and allowing him/her to appoint a management team.

According to them, under the system, the port corporations are landlords operating under some severe restrictions. They are not free to operate with any degree of independence; they cannot dispose of assets, they cannot embark on further development or improvements of assets or on new developments, at least not without Ministerial approval.

De Monie (1994, pp.5-6) shared the two main opinions that hold for the new role of port authorities when they become privatised. One of them is similar to the above discussions so far, the case of a comprehensive Port Authority given the power to operate as a commercial entity. The other opinion is where he argued that some people are of the view that landlord companies with limited liability status should replace port authorities. They should exclusively be driven by the profit motive. The argument for this is that the port authorities only make up an additional layer of bureaucracy and consequently use a substantial amount of national economic resources without generating any measurable output.

The crux of the matter is that, privatisation is a policy that offers opportunities for achieving better resource utilization. However, it needs to be counteracted by an authority capable of defending a rational and consistent long-term view and initiating such actions as would ensure the port's balanced long-term development.

□ Negotiation and renegotiation of contract agreements.

For most countries the first agreements for increased port privatisation were developed with very little legal precedence or strategic analysis. As a result, situations developed where the private operator:

- had excessive control over cargo-handling activities within the port;
- failed to significantly improve the quality of services provided or to reduce the level of charges;
- enjoyed a long-term agreement without providing significant investment;
- failed to attract significant new business and went bankrupt.

In these situations, it was necessary for the public port to terminate the agreement or renegotiate. The termination of the original Manila International Container Terminal (MICT) terminal concession in the port of Manila occurred because the concessionaire was not able to operate the terminal efficiently. The subsequent operators, International Container Terminal Services Inc. (ICTSI) provided efficient services and invested to meet growing demand. Most other terminations have occurred due to the inability of the private party to work with the public sector. According to Vietnam Business News and Analysis (September 1999) Viet Nam has had a number of agreements cancelled for this reason.

Furthermore, the market for terminal concessions is beginning to mature where the ranks of the bidders have increased by the arrival of more bidders who rely on political influence and others who are willing to take considerable risks. In some bids, the final bid price has been more than 50 percent above the expected price or the next highest bid. While this increases the returns to the port, it also places these concessions on risky ground unless charges to port users can be increased or the agreement can be later renegotiated. The former is a more likely option for the private operator, which can lead to the abuse of market power.

□ Regulations

Pricing and tariff control is one of the most sensitive issues on both the public and private sides of the negotiating table. Governments in industrialised countries ordinarily impose no control over port pricing. The Port of Rotterdam for example, considers the competition within and between terminals and ports to keep tariffs in line with actual costs and that the operators' profit motivation will serve to enhance efficiency and minimise costs⁸. Many Asian governments have been more inclined to retain pricing control according to Cass,

⁸ This information was given during one of the lectures given to students on field trip in Rotterdam, 2001, and the writer happens to be one of the students.

(1999, p.113) an example is what he recorded for China; "Port tariffs continue to be under central control

Where there are tendencies of monopolistic behaviour, the privatisation process must establish a regulatory framework, which monitors the quality of services provided and approves changes in charges to the port users. This becomes a constraint to the private operator, in fact a regulatory risk. Examples of such risks are:

- A change in the laws affecting port operations and investments, especially those related to health, safety and environment.
- A change in the rules and procedures for regulation of pricing and performance of port services.
- Other changes in the laws or policies that affect the rights of the private party or the obligations of the government.

The first has become a serious concern in nations with evolving environmental laws affecting dredging, handling of hazardous materials, and the disposal of ship wastes. The second and third involve changes in policy or political initiative and are of greatest concern in countries which lack a well-established body of corporate law.

In the light of these possible risks, the private operators will expect the government to provide some form of mitigation. In some cases, this may be a formal government guarantee to protect against changes in the regulatory rules. Similarly, the private sector can seek guarantees that the government will not grant more favourable conditions to future competitors who enter the market. For example, as stated by Shashikumar (1998, p.44) "The bid conditions do not permit JNP⁹ to consider further development of container handling facilities until the new terminal reaches 90 percent of its designed capacity".

⁹ Jawaharlal Nehru Port (JNP) is India's most modern port that became operational in 1989.

□ Labour

The private sector requires an efficient labour force and good labour relations in order to provide good quality services and control the costs for providing these services. The private sector will assume the risks associated with labour relations, pension liabilities, and other obligations related to the provision of future port services. It will expect the government to assume the risk for prior commitments to labour. At the time of transfer, the port and its labour should have reached an agreement with regard to the possibility for future employment with the port and the private sector, and the government's obligations with regard to outstanding pensions and retrenchment payments. The private sector should have reached agreement with regard to the terms and conditions for future employment (numbers, salaries etc.).

There is a growing appreciation of the benefits of transferring the labour to the private sector as part of the divestiture agreement, but the problem lies with the extent of flexibility available to the private investor as to how much of the labour to keep. There is the possibility of the agreement forcing them to employ all existing labour which may be more than they deem appropriate (over manning) or pay for cost of labour retrenchment. If this happen, it is possible to lead the private operator to increase port tariffs to the disadvantage of the port users. Since an overriding aim of the private sector is to make an appropriate return on its investment.

Two approaches which appear to offer a better chance for success are programs that emphasize job placement programs and those that leave the problem to be sorted out by the private sector. (Document: E/ESCAP/CTCTID/3, 1998). The first involves a carefully designed, long-term program worked out together with labour to provide for a mixture of compensation, retraining and job placement. The US West Coast ports applied this program successfully for its longshoreman during the advent of the container age.

The second approach is to transfer the excess labour to the private sector with suitable job protection for a fixed period of time. The private sector is willing to negotiate with employees, as this is one of their strengths relative to the public sector. Mexico settled for this approach after unsuccessfully attempting a more proactive approach. This approach has also been applied in terminal leases in Karachi and Nhava Sheva.

□ **Transfer pricing**

According to Alan & Eden, (1995). “ A transfer price can be defined as the price used for internal sales of goods and services between the divisions of a business enterprise. When some of the divisions are located in different countries, this type of firm is called a multinational enterprise (MNE).” It is not for this research to go into the dynamics of transfer pricing but to discuss or explore the concept as a constraint in the pricing of port services in a privatised port.

Whenever an MNE engages in transactions across national boundaries between related units of the firm, the price at which the good or service is transferred may be set such that it does not equal the value that would prevail if the units were independent of each other. That is the prices do not reflect market prices. Yunker (1982) in her survey of fifty-two American multinational companies found that the most important perceived objective of transfer pricing was an increase in profit. Dorward (1987,p.153) explained that this would mean money going out of the country in question. Dorward gave reasons, such as transfer prices being used to minimize tax liabilities by charging a high transfer price to a division operating in a country imposing high rates of profit tax. In a similar manner, high transfer prices can overcome restrictive profit repatriation legislation.

This could be a problem especially in developing countries because of their limited capacity to bargain, police agreements, impose penalties, or even gather data. There are obviously the possibilities of unfair pricing that will disadvantage port users, hence local people. Notwithstanding, the possible threat of transfer pricing, it would be unwise to

exclude a potential bidder simply because they are from overseas. Naturally, the government privatising its port would want to get the best possible price and efficient managers so to exclude an entire group of bidders would make no sense. Moreover, no business enterprise is going to price itself out of a market it has just invested in, there would be no commercial sense in doing so. However, it is also important for governments to remember to put in place a regulatory regime that ensures honest competition and facilitates for the settlement of disputes over prices and access.

CHAPTER FOUR

4. EXISTING PRICING SYSTEM IN TEMA PORT

4.1 INSTITUTIONAL/ORGANISATIONAL FRAMEWORK OF TEMA PORT

The Ghana Ports and Harbours Authority (GPHA) is a statutory public corporation mandated to plan, build, manage and control ports in Ghana. At present the GPHA owns and operates two commercial ports, namely the Tema Port and the Takoradi Port. Tema Port was built in 1962 while Takoradi was constructed in 1928. The two ports with a capacity of 15 million tonnes between them handle over 85 percent of the country's export and import trade.

Tema Port is generally referred to as a service / operating port but in practice, it is a mixture of two types of port organization. It is a service port as well as a tool port. As a service port, the port authority provides all services within the port, including labour. The infrastructure, superstructure and equipment are financed by the port entity, sometimes with government intervention in the form of investment grants or preferential loans. As a tool port, there are two private sector stevedoring companies operating with their own port labour.

In 1993 a study financed by the European Union was commissioned to prepare a Master Plan for the development of the commercial ports of Tema and Takoradi. The final master plan report was submitted in 1995, and the recommendations debated upon by all stakeholders¹. The cabinet approved a port development and reform

¹ A national workshop was organised by the Ministry of Roads and Transport in collaboration with GPHA. Stakeholders present include, port users, operators and labour union representatives.

policy document in 1997 with broad policies of the reforms / developments, which are as follows, (SAPS, 1998, p. 20)²

- Gradually changing the status of GPHA from that of a service port to a landlord with the two ports being autonomous from each other and competing in port operations.
- Introducing more competition into port operation by increasing private sector participation.
- Increasing the capacity of the ports to accommodate modern generation vessels.

GPHA management has been seriously preparing for the implementation of these policies. But for the change in government in January 2001, the privatization process would have been completed in June 2001. Nevertheless, it will soon be implemented since the new government has expressed strong commitment to increased private sector participation in all sectors of the economy. (Budget statement, 2001)

4.2. THE PROCEDURE OF FIXING PORT CHARGES

According to Port Tariffs (1997,p.1) “ In exercise of the powers conferred on the Board of Directors of the Ghana Ports and Harbours Authority by section 75 of the Ghana Ports and harbours Authority Law 1986 (P.N.D.C.L. 160) and by section 6 of the Board of Directors (Public Board and Corporations) Law 1983 (P.N.D.C.L.6), and the prior approval of the Minister of Roads and Transport, these Regulations are made this 1st Day of March 1997.”

² SAPS (Special Assistance, for Project Sustainability) Under The Overseas economic co-operation Fund of Japan, a SAPS team came on a mission to Ghana in 1997, conducted a study and submitted a report.

- The Ghana Ports and Harbours Authority shall, subject to the conditions and exemptions set out in the schedules to these Regulations, collect and pay into the fund of the Ghana Ports and Harbours Authority the Dues, Rates, Rent and Charges fixed herein.
- Every ship or vessel, which enters a port, shall pay in US Dollars or equivalent convertible currency to the GPHA the appropriate Dues, Rates, and Charges specified in the said schedules.

The procedure for fixing these tariffs is initiated by the port authority and sent to the Ministry of Road and Transport for the final approval. The Director General of GPHA constitutes a tariff committee. The members of the Tariff review committee as at the last review in 1996 are as follows: (DG/PT/CONF/v.4/41)³

Financial Manager	GPHA, Headquarters	Chairman
Planning Manager	„	Member
Traffic Manager	„	„
Senior Marketing Officer	„	„
Port Operations Manager	GPHA, Tema Port	„
Management Accountant	„	„
Harbour master	„	„
Principal Accountant	Fishing Harbour	„
Port Operations Manager	Takoradi Port	„
Principal Accountant	„	„
Representative	Atlantic Port Services	„
Representative	Speedline Stevedoring Ltd	„

The committee is given terms of reference. Again, the terms of reference of the 1996 Tariff Review Committee for example was as follows:

³ The memorandum written by the Director General to the chairman of the Tariff review committee.

- Investigate and identify areas of defect in the present tariff structure.
- Simplify and improve the tariff by unifying charges relating to the same or similar services and including services not catered for in the existing tariff.
- As much as practicable, reduce all charges to dollar base
- Relate specific charges to the cost of providing the services
- Examine issues related to specific charges
- Streamline provisions in the tariff for seasonal or periodic rebate
- Other relevant matters.

At the data gathering stage, four sub-committees and a secretariat are formed. The maritime community is invited by letter to submit memoranda and other inputs to the committee to facilitate its work. The committee determines tariff levels by:

- Determining/identifying the various services/activities performed by GPHA and the private stevedoring firms.
- Determining/identifying the resources/inputs and levels that are developed in the provision of services/ activities
- Determining/identifying the cost/charges of services/activities, which are generally, not related to average cost but to incremental costs i.e. transshipment/transit charges/costs.
- Determining/identifying cost/charges related to services being rendered but which have not been priced and included in the existing tariff.

The committee has only concentrated on considering the cost of providing the services. Although it is essential to know what the costs are in port operations and relate certain charges to costs, these are not the only elements to be taken into account for pricing purposes. Port investments are very costly, so it is particularly important to use them economically, and port charges have a function to perform in this respect. Similarly, the benefits derived by the user from the port installations, place an upper limit on the price to be charged.

The committee seems to have missed out some important data they should have identified for study and guidance in the revision of the tariff. They left out issues like port user costs and the alternatives available to port users, and cost at competing ports. GPHA is in competition with other ports in the sub-region, for example Cote D'Ivoire, Togo and Benin for the landlocked countries' trade. The Authority is resolved in its mission to improve on its efficiency and offer the best service in the sub-region, at a competitive tariff rates. This indicates that GPHA is mindful of the fact that it is in a competitive business with its neighbours and therefore when reviewing its prices it should involve comparative pricing. The charges for transit cargo must be made comparable or less than those at competing ports.

Frankel (1987,pp.60-61) suggest that, the preparation or revision of port tariffs requires a broad study of the ports' performance and objectives, including data on the following:

- Port operations performance
- Port cost structure and finances
- Port user costs and the alternatives available to port users
- Cost at competing ports.

Dr Chris Whitaker, the Chief Executive Officer of Melbourne Port Corp. (MPC) has this to say: " The cost to ocean carriers of using Melbourne has been of concern to MPC for several years. However, a recent deal negotiated with Victoria's office of the Regulator General that will lead to the termination of berth hire charges over a three-year period should offer significant savings" (Fossey, 2000,p.97)

The committee then submits a draft report to management and GPHA Board for discussion. After amendments, if the need be, a final report on tariff is submitted to management and GPHA Board. Approval is sought for the new Tariff from the Ministry of Roads and Transport. The implementation process of the approved tariff

involves the education of port users on the new tariffs. Frankel (1987, p.65) refers to changes that has taken place in shipping and intermodal transport technology, which have affected the procedures used to design, formulate, and assess new tariffs and to revise existing tariffs. Some of these changes are;

- New organizational structures have evolved as the diversity of operations and the complexity of the financial activities of the port increased.
- Port staff functions have increased, and separate financial, accounting, data processing, planning, marketing, and engineering departments have been created.
- The responsibility for tariff formulation has been removed from accounting departments and assigned to standing committees, which coordinates inputs from various sections of the management structure.

The GPHA Tariff Review Committee, as mentioned earlier on, had the financial manager as the chairman. The marketing officer should have been the chairman, since pricing is a marketing function and it is high time ports begin to put things in their right perspectives. Though GPHA has moved a step ahead by removing the responsibility for tariff formation from the accounting department and assigned it to a standing committee, there is still much to be done.

The Port does face some constraints in fixing or reviewing the port tariff:

- Lack of records on cost information and procedure on which previous tariffs were based.
- Due to the depreciation of the cedi⁴, the shore handling charges, which are normally quoted in cedis, become irrelevant within a short time.

⁴ This is the currency of Ghana. At the time of writing, about 7,000 cedis are equivalent to one US dollar.

- Sometimes, the approval procedure from the ministerial level takes a long time. For example, a tariff put together in 1988 by the port authority became applicable in 1991. Related to this point is the fact that it is also not easy to change tariffs. The tariff, which became operational in 1991, was not reviewed till 1997. Meanwhile, the longer the period over which short-run costs estimates must be made, the less relevant they are to actual conditions at any point within that period.

It is important to mention here that this does happen in most ports. According to Philippine Port Authority (PPA) they bat for equal tariff rates for both domestic and international ships because the disparity between the levy against the use of port facilities between foreign and domestic ships is over 50 percent. Meanwhile the domestic ships use about 75 percent of the port facilities. The point worth noting here is that PPA recommended hiking the domestic tariff to equal half of the foreign tariff, but even within two years it was still pending approval

4.3 THE STRUCTURE OF PORT DUES AND CHARGES

The intent of this section is not to discuss at length the various components of the Tema Port tariff structure. Rather, it is to provide an overview of the existing port tariff structure. This will facilitate an in-depth discussion on the proposed tariff structure for the privatized port chapter five.

The pricing structure consists of a number of charges, type of charges and charging base. UNCTAD (1975,p.21) indicates that a port tariff structure should facilitate a clear, informative and consistent presentation of information to the port users and other interested parties. Different charging bases result in ports structuring their tariffs in different ways and efforts have been made over the years to harmonize these structures (Alderton, 1999,pp.130-131) to facilitate inter-port comparisons. There is increasing desire on the part of port users for greater transparency in the

billing of port services (ESCAP, 2001). This indicates the need for more easily understood and comparable tariff structures. Suggested approaches to achieve simplification include reducing the number of charges and/ or reducing the number of variables in the basis for each charge.

The prices charged by ports, however great the differences in detail are, fall broadly into two categories user charges and service charges. The user charges include dues levied on the ship for each call, conservancy dues, wharfage and storage fees which cover sheds and warehouses. Bennathan & Walters (1979, pp.21-22) indicated that service charges include charges for the use of labour and ancillary equipment, which vary with the cargo, carnage charges, mooring and berthing charges, pilotage, towage and so on.

Tema Port has established a tariff structure, which is contained in a published schedule with thirty- six (36) pages in the port tariffs Regulations 1997 for seaports of Ghana. The tariffs are organized in six schedules namely: (Port Tariffs, 1997, pp.ii-iv)

- FIRST SCHEDULE: Vessel Handling Dues and charges
- SECOND SCHEDULE: Stevedoring
- THIRD SCHEDULE: Shore Handling/Lighterage
- FOURTH SCHEDULE: Lighterage and Baco operations
- FIFTH SCHEDULE: Hire of cranes and other equipment
- SIXTH SCHEDULE: Slipway and Dry dock charges.

To make this tariff structure relatively simple, useful remarks of how the pricing system is applied are provided in the tariff book. Table 1 shows some of the charges in Tema Port, their calculation basis and who should be responsible for the payment.

TABLE 1. Categories of Port Tariffs, their charging basis and assessment

<i>Name of charge</i>	<i>Calculation Basis</i>	<i>Assessed Against</i>
Harbour dues	L .O .A ⁵ of vessel/duration of stay	Shipowner/agent
Port dues	Weight ton/container unit/vehicle unit	Shipowner/agent
Pilotage	Gross Tonnage (GT)	Shipowner/agent
Towage	Per tug movement based on distinct GT classes per day	Shipowner/agent
Storage	Per day	Shipper/receiver
Stevedoring	Weight ton/ container unit	Shipper/receiver/Shipowner
Shore handling	Per ton/unit/package/TEU Stuffed/ TEU Empty	Shipper/receiver/Shipowner.

Source: Adapted from Port Tariffs of Seaports of Ghana, 1997.

Harbour Dues:

Some of the charges as presented above in Table 1. differ in their basis of calculation as compared to other ports. The charging base of the harbour dues for example in Port of Rotterdam is the GT⁶ of the vessel. (Port Tariffs, 2001). It also takes into account the type of service carried out by the vessel (tramp, liner service, short-sea/feeder vessel). The type of vessel and the amount of cargo to be discharged and loaded has also been considered. Moreover, the tariff offers the possibility to obtain frequency reductions and special rates for laid up vessels, bunkering vessels, cruise vessels, etc. The Rotterdam harbour dues tariff contains no time element.

⁵ L.O.A. refers to length-over-all.

⁶ For all vessels only the International Tonnage Certificate, 1969 will be accepted as a basis for the calculation.

In comparison to Tema Port, the harbour rent is presently based on the L.O.A. of the vessel. The rent calculation also contains a time element. The basic rate is set for the first 24 hours, a supplement of 50 percent of the basic rate is added for every subsequent 12 hours of port stay.(See Appendix A). Clearly, when vessels stay long in the port, assuming they are not retained because of the port's inefficiencies, they should pay more. But the penalization should be reasonable, in order not to unduly chase away vessels with large cargo consignments. 50 percent is too much, 25 percent seems more reasonable.

The total harbour rent collected in Tema Port in 1999 was US\$1,083,000.00. This represents some 10 percent of total aggregated revenue from harbour and port dues on ships and cargoes. The above comparison is just to emphasis the diversity in the structure of port tariffs from port to port, although a common framework can be discerned. This is as a result of the differences in their pricing policy objectives.

What is the most suitable charging base for the harbour dues/port dues tariff? Should it be GT, deadweight tonnage, L.O.A. or the vessel's volume? This issue will be discussed later when considering the proposed tariff base for Tema Port.

Port Dues on Cargo

The port dues on cargo have presently been set on a commodity basis. The charging unit is either the weight ton, the container unit or the vehicle unit as the case may be. (See Appendix B) The port dues on cargo are a major source of revenue for Tema port. In 1999 port dues generated revenue equivalent to 36.4 billion cedis or US \$9.1 million. This is about 6.5 times more than the aggregated revenue from the harbour rent and the mooring and un-mooring charges.

Since the dues on cargo cannot be related to any specific port cost, they are more of a tax; therefore, Tema Port is charging too much for dues on cargo. Consideration must be given to a redistribution of port charges, where the new pricing policy will shift

from cargo-based charges to charges on ships, if the former cannot be abolished. Moving to ship-based and berth-based charges is likely to lead to greater efficiency. Singapore, Antwerp and Dubai do not charge port dues on cargo as this has been incorporated in the tariff for port dues on vessels.

Pilotage

For safety reasons pilotage in Tema Port is compulsory. Tema port has the advantage of offering a fairly short and not too complex entry and exit. Most ships thus require a pilot for less than one hour, both for entry and exit. This easy approach to the port should be reflected in the tariff for pilotage. Vessels between 30,000 and 40,000GT pay Tema US\$ 650 per entry or exit against US\$280 in Singapore which has a relatively difficult approach. As pilotage tariffs are cost based, the difference between the two ports above is mainly due to a lack of economies of scale in Tema Port. The higher tariff levels in Tema is also the result of a lesser level of operational and organizational efficiency, resulting from inherent local factors such as poor communication and lack of adequate training of pilots. The port also lacks the appropriate number of pilots

The available revenue and cost data from the finance department reveals that the combined pilotage and towage activities generated a healthy surplus in 1999. The revenue totaled 11.6 billion cedis (US\$4.4 million). Regrettably, the expenditure is aggregated for all the vessels handling services together and not for pilotage and towage separately. They amounted to a total of 4.2 billion cedis (US\$1.6 million). Clearly these revenue and cost figures point at a highly positive financial result for vessel handling services in Tema Port, at least US\$2.8 million.

From these high financial results, one can conclude that a reduction in these charges could be considered in future. The pilotage revenue in Tema Port is not only

determined by the number of ships calling, but also by the size of the vessel and the type. (See Appendix C)

Towage

Towage in most ports is not compulsory, in Tema Port however, towage with one tugboat is compulsory for all vessels below 1000GT and with two tugboats for all vessels over 1000GT(See Appendix D for details). The decision to use none, one, two or more tug boats remains with the harbormaster because of the related safety aspects. He needs to decide on a case-by-case basis taking into account all relevant factors at the time of the vessel’s entry into the port or her departure. The towage tariff in Tema Port is applied per movement carried out. It is an incremental tariff based on distinct GT classes. But how do these charges compare with those of the West African port range? The answer to this is given in Table 2

Table 2. Comparison of Towage charges in the West African Ports range

<i>Port</i>	<i>Towage charges (US\$) Sample of seven vessels</i>	<i>Index Tema=100</i>
Tema	13,320	100
Nigeria Ports	11,105	83
Cotonou	11,407	86
Lome	11,114	83
Abidjan	Not available	n.a.
Freetown	Included in harbour due	n.a.

Source: Shipowners and Agents Association (Unpublished interview) 2001

The towage charges in Tema Port for the sample of seven vessels are higher than in the directly competing ports. In the absence of separate cost data for the towage cost and revenue centers of Tema Port it is difficult to make any firm statement on the operating margin of towage tariffs. In view of the revenue and cost data, already

discussed on pilotage, there could be some scope to reduce the level of the towage charges and thereby improving the competitive position of the Ghanaian ports.

An interview of some of the port users indicated that they felt they were being overcharged for the towage fees since the number of tugs used did not commensurate with the charges paid. Tema Port should therefore consider a new tariff structure, which will offer a tariff per movement/GT of the vessel irrespective of the number of tugs the harbour master decides to deploy.

4.4. CUSTOMER PERCEPTION ABOUT THE PORT CHARGES

Today's liberalized world has created a competitive buyers market with increased customer awareness and selectivity to the extent that the customer is the BOSS, what economists' term as consumer sovereignty. What he wants he gets, unlike in the past, where sellers were dictating to the buyers. The winning port is therefore the one that maintains the closest relationship with its users and satisfies their needs quickly and completely. Therefore, in a discussion of port pricing, the customer's perceptions about the port charges become a critical issue to consider.

Canamero (2001, p.1) states "Many studies have found that port users regard prices as a factor, among others, to be taken into consideration when making logistics decisions (i.e. selecting a port, route, etc)". The UNCTAD (1975, pp.29-32) document discusses some requirements of a sound pricing structure from the users' point of view. The port users would appreciate a pricing system that is clearly understandable and comparable between ports. They also require a pricing system, which is as stable as possible and would prefer being informed well in advance of any price change.

Often, it is common to hear port users objecting strongly to any increase in port charges. From time to time it even catches the attention of the media. An example is

reported in the March 1990 issue of the Containerization International journal with the Headline, “Shipowners Protest Higher Bangkok Charges”. (“Shipowner Protest”, 1990, p.65) The shipowners argue that Port Authority of Thailand’s (PAT) profit is already sufficient. But PAT responded that it has a goal of achieving a commercial 15 percent rate of return on capital employed and its tariff restructuring is part of this strategy. Again, the shippers and shipowners argued that gate charges were not justified because container-packing costs at the time were greater outside than within the congested Klongtoey Port area, even though the outside facilities are more efficient.

In the case of Tema Port, shipping agents have been complaining that, Tema port is more expensive in terms of stevedoring charges than other ports in the sub-region. In addition most ship owners use their own equipment (ships’ gear, etc.) to supplement operations, coupled with the additional problem of not getting enough export to offset costs. Tables 3.shows tariffs of some ports in the sub-region for 1998, where Tema Port operates. As mentioned earlier on, some are competitors, competing for the landlord countries of Burkina Faso and Mali’s cargo.

TABLE 3. Port charges (1998) USD (Full container vessel 29,700 DWT)

<i>Port</i>	<i>Expenses</i>
Dakar	3,500
Abidjan	9,852
Lome	5,632
Cotonou	5,000
Takoradi	4,650
Tema	6,123
Apapa	32,309

Source: Shipowners and Agents Association (Unpublished interview), 2001.

Table 3 shows the total money spent by ship owners at the various ports. It does not provide a detailed breakdown of the components in terms of towage pilotage, harbour dues, dues on cargo stevedoring charges etc. But it shows the differences in expenditure for the same ship type (29,700DWT) at the various ports of call.

TABLE: 4. Container Yard charges USD (Dry container dis-charge 1998)

<i>Port</i>	<i>20-Full</i>	<i>40-Full</i>
Dakar	52.62	80.93
Abidjan	28.50	42.22
Lome	81.10	160.00
Cotonou	78.46	124.96
Takoradi	113.16	220.51
Tema	109.00	195.00
Apapa	197.01	333.69

Source: Shipowners and Agent Association (Unpublished interview), 2001.

As shown by Tables 3 and 4, Tema Port is one of the most expensive ports in the sub-region. The comparison is only limited to the port charges without considering differences in the performance between the ports. Tema port will have to invest in container handling equipment. The government's policy of privatizing the port to make it a landlord port is therefore in the right direction. Furthermore, ship owners/agents are not satisfied as mentioned under towage with the compulsory usage and subsequent charging of two tugboats for vessels above 1000 GT. According to F.F. Dennis (personal communication March 26 2001)

“ Present system okay, but does not match with the services provided. We are not happy with the graduation of tariff, especially the procedure where shipping lines are taxed to pay for two tugs whilst in actual fact they always use only one”.

CONCLUSION

Though privatization may necessitate ports to change the structure of the charges and possibly the levels, for the use of the infrastructure and supply of services, Tema Port already had some issues to address with its pricing structure as discussed in this overview section, the privatization therefore goes to reinforce its implementation.

Tema Port is not using fully the general principles of formulating and reviewing tariffs as discussed in this chapter. Tema Port often faces the problem of the need for approval of tariff changes, which involves lengthy processes. This negates the advantages of a marginal cost based tariff. Tema Port is conceived generally as being expensive. Presumably, an abnormally high tariff level of a port indicates a trend to exert market power and employ unfair trade practices. Consideration must be given to reducing the levels of the dues on cargo, pilotage and towage while an upward revision of the harbour rent is appropriate. The privatization and the restructuring of the pricing structure and levels are timely and this is dealt with in the next chapter.

CHAPTER FIVE

5. ANALYSIS OF THE PRICING SYSTEM FOR TEMA PORT

At the time of writing this research report, the status of the Ghana Ports and Harbours Authority (GPHA) had remained unchanged. The draft landlord ports Act had as not yet been approved. All these events are likely to occur within the next year and when this happens, the challenge, when developing the new tariff structures and levels would be to design a tariff that is adequate to meet the requirements of the existing Port Authority and allows a smooth devolution to the new Port Authority.

In the light of the new structure of the port when the privatization comes into effect, De Monie, a port financial consultant of International Port Consulting Ltd. has proposed a pricing system for implementation by Tema Port. It is the aim of this chapter to critically analyze the proposals of De Monie and to offer alternatives to the pricing system to make it more appropriate to the specific situation of the Ghana ports.

The task of developing new tariffs must take into account detailed business plans for the new Port Authority. It will also depend on the new economic and financial objectives of the Port Authority as defined by its new role and the legislative instrument governing it. An overview of the new role of the port authority and the new regulation of port charges would therefore be considered before analyzing the new proposed tariff.

5.1 REDEFINITION OF THE ROLE OF THE PORT AUTHORITY

The role of the public port authority will decline as the role of the private sector increases, but there are certain functions that cannot be easily transferred to the private sector. The most important is the obligation to act as an advocate of the

public interest. Falknor (2000, pp.11-12) highlighted three divisions of responsibility of the port authority as being those that has proven to be most effective in past privatizations.

- Port activity regulator- establishment and enforcement of safety, security regulations.
- Port marine services provider- providing and maintaining, tugs, pilots, mooring services, dredging, navigation aids etc.
- Government liaison.

De Monie (1994,pp. 5-6) in his analysis, mentioned the two main preconceptions being propagated in both private and public circles, as to whether there is still a need for port authorities when there is increased private sector participation in the ports or not. He indicated that some private sector representatives defended the view that landlord companies with limited liability status should replace port authorities. They also suggested that these companies should exclusively be driven by the profit motive. The opposition parties are defenders of the comprehensive port authority, even if the actual operational activities such as cargo handling, towage, mooring or ship-handling would be entrusted to private operators.

Finally, De Monie concluded this argument by saying:

“ Privatization of ports does however fundamentally change the mission and functions of the traditional public port Authority. Instead of acting as the omnipresent and omnipotent body (responsible for everything but reputedly ineffective in most of it endeavors) a modern port authority acting in close cooperation with private sector companies, should effectively concentrate its efforts on the efficient performance of five fundamental functions”:

- The landlord and performance monitoring function
- The policy-making, planning and development function
- The traffic control, regulatory and surveillance function

- The marketing, public relations and promotion function
- The Human Resources Development function.

In the case of Tema Port, the draft Landlord Port Bill (Landlord Ports Bill, 2000,p.6) section 9 and 10 indicates clearly what the objectives of port authorities of the country should be, and the role of the new port authorities as landlord ports. Section 9 indicates that it should be the public interest objective of any port to perform its functions with a view to satisfy transport demand while ensuring fair and transparent competition between port users and enhancing the quality of delivery of services provided. They should also reduce costs and delays of transport, and also to minimize the economic value of public investments while preserving the environment.

Section 10 is as follows: “Port authorities shall operate their ports as landlord ports, and as such:

1. They shall (a) Plan, build, maintain and enlarge port facilities as appear to be necessary for efficient and operation of the port
(b) Develop port related estates; and
(c) Regulate the use of the port.
2. They shall deliver permits and license operators for the use of such facilities and estates, for the provision of additional facilities and equipment, and for the delivery of ship, cargo and other port services
3. Based on standard conditions published before any such agreement and through an open process, they shall enter into any agreement with such licensed operators for leases, concessions, build-operate-transfer schemes or other instruments as may be necessary for such satisfactory provision and use of facilities or equipment and satisfactory delivery of services
4. Provided however that if no operator proposes or accept to operate the services referred to in subsection (3) at reasonable, economic and efficient conditions reflecting the normal practice in ports and satisfactory to such

operator and to the port authority, the port authority may operate the service on its own forces.

The Bill is therefore giving the port an obligation to act as an advocate of the public interest. At the same time going through the Bill shows that the government expects the port to act as a trade facilitator. If Tema Port's policy is to be placed on a sound and consistent basis, there is a need for government to declare unambiguously where their priorities lie, and what they expect of the port. Though, the focus on the facilitation of trade is not incompatible with appropriate financial discipline.

In sum the new role of Tema Port as described in this section does not detract her from the need to maintain a framework for responsible and competitively neutral financial management. But it recognizes the interdependence of the constituent elements that comprise the complex of services consumed by users of the port, and would include, as well discharging the pure landlord role, clear acceptance of responsibility for the performance and future development of the port as a whole.

5.2. THE NEW REGULATION OF PORT CHARGES

With the approval of a policy to further improve the operation of the ports of Ghana, the government pledged, within the Ghana Trade and Investment Gateway Project (GHATIG), to reduce the cost of operations and shorten the turn-around time of ships (Meletious, 2000,p.11). The Landlord Ports Bill stipulates in its section 20 the principles of financial management that will apply to the landlord ports.

A port Authority, "... shall conduct its business on sound financial principles with the objectives of

- (a) Achieving a reasonable but not excessive rate of return on the fair value of its net fixed assets in operation

- (b) Of enabling it to provide a sustained efficient port service at minimum cost and without excessive charges to the users and to the traffic
- (c) Whenever possible of building its tariffs so that each vessel and cargo traffic or other port activity is charged for the costs attributable to it”.

Most significantly, it stated that a port authority should ensure that its net operating income is sufficient for the following:

- To meet interest payment on borrowing
- To provide for repayments to be made in respect of loans to the extent that such repayments exceed the year’s provision for depreciation charged to revenue account
- To provide for a reasonable proportion of the funds needed for expanding the port Authority’s assets and facilities and improving its services
- To provide reserves for replacement, expansion or other purposes
- To make such reasonable payments by way of dividends as the Board may think fit and as the financial situation of the port Authority and especially of its reserves will permit.

The following provisions of the Landlord ports Bill concerning charges is worth noting at this point:

- Section 52, subsection (1) “ A port authority may grant on its port or vessels dues, such rebates, discounts or other preferential advantages as it deems fit to categories of vessels or categories of traffic with the objective to encourage the use of such category of vessel or the development of such category of traffic”.

- Section 45 “ The owner, agent or master of every vessel which enters, leaves, uses or plies within a port shall pay to the port authority such port or other dues as the port authority may, with the approval of the Minister, from time to time prescribe”.
- Section 54, subsection (1) “ For the recovery of all rates payable under this Bill in respect of any goods, a port authority shall have lien on the goods until the rates are fully paid or until security has been constituted”.
- Section 69, subsections (1) and (3) “ Subject to the provisions of this part, a port authority may with the prior approval of the Minister, by legislative instrument, make regulations”:
 - (1) For prescribing a scale of rates, and the conditions under which these are to be levied in respect of;
 - (i) Port dues on vessels and goods respectively
 - (ii) The use of anchorages and mooring
 - (iii) Permission to vessels to approach or lie alongside any wharf, quay, pier, dock, land, building, or place
 - (iv) Wharfage, carnage, rent, warehousing, storage depositing, or demurrage of goods at or within any wharf, quay, pier, dock, land, building, or place
 - (v) Passengers landing and embarking
 - (vi) Any other facilities or services.
 - (3) “ All port dues and stevedoring charges shall be paid in convertible currency except that Ghanaian registered vessels may pay the equivalent in cedis”.
- Section 70, subsection (1) “ No tariff or charge thereto shall come into force until such tariff or change in tariff shall have been published in the Ghana Gazette, or in the Ghana commercial and Industrial Bulletin or in any

Bulletin published by authority and designated by the Minister for that purpose”.

- Section 32, subsection (1) and (2) “ Notwithstanding any provision of this Bill or any other enactment, a licensed operator may in relation to any facility or service provided by it pursuant to the conditions of the license levy such a maximum charges as may be prescribed under any regulation made under this Bill and in respect thereof:

- (a) Give any discount at such rate as it thinks fit
- (b) Impose interest on any sum outstanding
- (c) In the case of any package service provided by it levy such higher charges not exceeding such percentage of the prescribed charges as may be approved by the port authority

Sub section (2) states “Where, in respect of any facility or service provided by a licensed operator, no charges have been prescribed under any regulation, the licensed operator shall, notwithstanding the provisions of any enactment, be entitled to levy charges at the rate as may be approved in writing by the port authority after consultation with the operator”.

Issues and Analysis of the new regulation

- The port authority with the prior approval of the Minister regulates its own pricing system and that of the private operators. One point of interest is that there is no detailed provision on the procedure for regulating the private operators charges, for example how often the private operator can review his tariff, an idea of what can be termed as maximum charges, and how long the approving bodies (Minister and Port Authority) should take to approve their tariffs after submission. The approval procedure was also not indicated, and there is no clause on prevention of price discrimination. It will therefore be

necessary to guard against bureaucratic expansion, whether in the port or in the Ministry.

- The Government has clearly indicated that in future it will back-out of major investments in basic and specific port infrastructures. Hence, Tema Port will have to provide the necessary funds to pay for such investments or have to come up with workable alternative solutions. These arrangements will provide opportunities for reforming the ports' pricing structure and levels.
- The principle that a port authority is allowed to earn a reasonable return on the fair value of its assets in operation cannot be faulted. It translates into the need to determine the minimum net income that Tema Port must generate to meet the requirements of the law, and more fundamentally to continue their business. De Monie (2000) has proposed a target of 15 percent return on the assets. But the difficulty lies in defining, beyond dispute, what is the fair value of assets and what represents the fair value best. Is it the historical value, replacement value, or the value creating capability of the assets? According to Cañamero (2001) different parties perceive the notion of fair value differently thus making the whole concept relative.

5.3. CRITICAL ANALYSIS OF PROPOSED CHARGES FOR THE PORT AUTHORITY

The Port Financial Consultant, De Monie, provided a draft report on the restructuring of Tema Port tariffs with calculations of various charges. But it is impossible to list and discuss all in a work such as this, so the author deems it fit to discuss the major charges, like harbour dues, dues on cargo, pilotage, and berth occupancy. The methodology applied in this section is to give an overview of what De Monie proposed for each charge item and follow it up with a critical.

5.3.1. Objectives identified by De Monie for the Tariff Restructuring

In restructuring the tariff, the consultant proposed a 15 percent rate of return. He stated that unless this target level is met, the port could not achieve the objectives of the landlord port bill. De Monie (2000 p. 49) therefore identified two fundamental but contradictory objectives as follows:

- The generation of cash flow. In the extreme, this may mean the maximization of the net cash flow to the detriment of other economic interests in the country.
- The maximization of the national economic benefits ports generate for the country. Facilities and services will be offered mainly with a view to stimulate to the maximum the country's economic development.

He also identified some complementary objectives as follows:

- Optimization of the utilization of the assets of the port authorities
- Establishment of the most competitive port authority tariff in the port range.
- Development of a simple and transparent tariff, easy to interpret and use.
- Maximization of the transit and transshipment flows through the port.

Analysis and Critiques

The Tema Landlord Port authority is being organized, as an autonomous financial entity required recovering its full cost to the largest possible extent. As a result, the authority is confronted with the question of whether full cost recovery of basic infrastructure investments through user charges is feasible. The authority hence De Monie, must bear in mind that, while eager to abide by the regulation provision of self-financing, and maximization of national economic benefits, increased port user charges may divert traffic flows to other routes, which might prove less economically efficient for the country as a whole. Simultaneously, he should aim to structure and

modulate the tariff in such a manner that the four complementary objectives could be realized to the maximum extent possible.

5.3.2. The Pricing Approach used by De Monie

De Monie used the combination pricing approach to develop the new tariff for Tema Port, as he indicates that, this offers the best chances to realize both the priority and the complementary objectives. The new port tariffs for the Port Authority of Tema have been conceived as a mix of performance-based and value-based strategies. He stated that, nevertheless, the prime aim of the exercise has never been other than the generation of sufficient cash flow. This will give the Port Authority a financial independence and long-term financial and operational sustainability.

Hence, Table 5 indicates the landlord tariffs that were developed by him on the understanding that some tariffs will be merged into a single tariff and that a new berth occupancy tariff will be introduced, Table 5 shows the tariff that he proposed and who is to pay.

Table.5. Proposed Tariff for Port Authority.

<i>Existing Tariff</i>	<i>Proposed Tariff</i>	<i>To be paid by</i>
Harbour rent	Harbour dues	Ship owner/ agent
Port dues on cargo	Dues on cargo	Shipowner/ agent
Mooring and Berthing	Berth occupancy	Ship owner/ agent
Pilotage	Pilotage	Ship owner/ agent
Storage	Storage and warehousing charges ¹	Party requesting storage
Towage	Towage charges	Ship owner/ agent
Rent	Rental tariff	Party signing the rental agreement
Cranes and Equipment	Cranes and equipment	Party hiring
Light Dues	Light dues	Ship owner/ agent
Anchorage	Anchorage charges	Ship owner/ agent
Fresh water	Fresh water	Party ordering
Shifting	Shifting charges	Ship owner/ agent

Source: Writer based on De Monie's Draft Report, 2000.

His working hypothesis is for the Port Authority to be able to generate 20 percent of total annual revenue from harbour dues, 45 percent by the port dues on cargo, 15 percent by the new berth occupancy fees, 15 percent by the lease rents and 5 percent by miscellaneous revenues.

Analysis and Critiques

De Monie stated nothing about adopting the competition-based strategy of pricing as part of his combination pricing approach. How can he satisfy his complementary objective of making the port authority tariff competitive if there is no clear indication

¹ This is storage and warehousing charges for facilities outside the port perimeter but in the ownership of the port authorities.

of including the competition-based strategy of pricing? The Port Authority's pricing decision should be affected by the competitors' cost and prices, and possible competitor reactions to the company's own pricing moves. (See Frankel's suggested factors discussed in Chapter 4.2) Though Tema port authority will be a regulated monopoly, it will be in competition with ports in the sub-region, like Abidjan, Lome and Cotonou. A customer who is considering using Tema Port will evaluate Tema Port's price and value against the prices and values of comparable ports in the sub-region. As already discussed (See Chapter 4.4) customers are complaining that Tema Port is more expensive than some of the competing port in the sub-region.

In addition, Tema Port's pricing strategy may affect the nature of the competition it faces (Ma, 2001). If Tema port follows a high-price, high-margin strategy, it may attract competition. A low-price, low-margin strategy, however, may stop competitors or drive them out of the market. Tema Port needs to benchmark its prices and quality against its competitors' offer. Tema Port can do this in several ways. It can get competitors tariff booklets. The marketing department can undertake marketing intelligence. It can ask customers (shipowners and shippers) how they view the price and quality of each competitor. Once Tema Port is aware of competitors' prices and offers, it must use them as a starting point for its own pricing.

Another important external factor that De Monie did not consider in the pricing approach is external environment. Tema Port must consider what impact its prices will have on other parties in the transportation chain, for example, the ship owners and the inland transport owners. Tema Port should set prices that give these parties a fair profit, and encourage their support to the effective running of the maritime transportation chain.

5.3.3. Port Dues on Cargo proposed by De Monie

De Monie suggested that there is a need to re-equilibrate the revenue that the Port Authority will receive from the general port dues on the vessel and the general port dues on the cargo. He then suggested that the port dues on cargo is to generate 45 percent of the authority's annual revenue

In 1999, the port dues on cargo generated revenues of 36.4 billion cedis or 9.1 million US Dollars. (De Monie, 2000). This is about 6.5 times more than the aggregated revenue from the harbour rent and the mooring and un-mooring charges. De Monie also recommended that the port delete a lump sum charge on empty containers/ bolsters that exist in the current tariff. His argument was that no cargo is carried in these containers and shipping lines do not earn any direct revenue from their carriage.

On the contrary, they only incur extra cost for such re-positioning of containers. On the other hand he clearly stated that the deletion of this tariff will affect the annual yield potential and that port dues on cargo for full containers will need to be increased by some 27.5 percent. This would allow for the recovery of the port dues on cargo, empty containers and empty bolsters.

The assumption is that to make the above proposed percentages work out to achieve the financial objectives of the port at least the present traffic volumes must prevail.

Below are his proposed levels for the port dues on full containers and empty containers/bolsters.

Table 6. Proposal for port dues on container/ flats and bolsters.

<i>Containers/flats and bolsters</i>	<i>Unit not exceeding 20ft in length (USA \$ per unit)</i>	<i>Unit exceeding 20ft but not more than 40ft in length (USA \$ per unit)</i>	<i>Unit exceeding 40ft in length (USA\$ per unit)</i>	<i>Remarks</i>
Containers with cargo	36.72	69.12	79.92	Import/ export
Platform and bolsters with cargo	36.72	69.12	79.92	Import/ export

Source: De Monie, 2000.

Analysis and Critiques

The port dues on cargo are a major source of revenue for Tema Port. Based on the 1999 total aggregated revenue recorded for the Tema Port of US\$ 10,484,000.00, a 45 to 50 percent share would mean that the port dues on cargo would have to yield at least between US\$4,717,800.00 and US\$5,242,000.00, on the assumption that the 1999 traffic volumes would prevail. Then, the additional 15 percent extra revenue requirement (as proposed by De monie as the adequate rate of return) would push up this figure to between US\$5,425,500.00 and US\$6,028,300.00 per year. As previously indicated, the application of the existing port dues on cargo tariff on the 1999 traffic yielded USA\$ 9.1 million. Thus, there is scope for a reduction of the levels of the port dues on cargo and the 15 percent rate of return can still be achieved.

In recent times there has been the realization that dues on cargo are actually no more than a simple tax on goods moving. Some ports have therefore re-equilibrated the charges on vessels and those on cargo for example the Port of Melbourne Authority (see Chapter 3.2.2). According to Tongzon (1993) there are also some opinions that the dues on cargo should even be abolished while the dues on ships are restructured. Goss & Stevens (2001, p. 131) writes that “ Antwerp is an interesting one since it has never charged any dues on cargo whatsoever, relying on a combination of ship dues and rents it earns as a landlord port”. So one may consider that since the arguments are fairly obvious, Tema port should reduce the due on cargo and restructure the harbour dues. However, the following points below must be critically considered.

- After re-balancing the tariffs on vessels and on cargoes, there is a need to provide for extra revenue to counteract any future relative decrease in the number of ships calling. Knowing that the new trend observed in ports now are “ fewer ships carrying more cargo”. In other words, the number of ships calls drops whilst the total cargo tonnage increases because of the emergence of bigger container vessels. (Ma, 1999,p.53).
- Though looking at historical and forecasted data (Tema Port statistics 1996-2000) traffic volumes increases each year. What is the guarantee that it will grow enough to make up for the 15 percent reduction in the port dues on cargo proposed? It is even possible that cargo volumes can decrease in future. Tema Port over estimated its demand forecasts prepared as part of its 1996-2001 corporate plan. The SAPS team reported this in their Final Report for Rehabilitation Project in the Republic of Ghana. (SAPS Final Report, 1997) They reported that they found through their research that Tema Port was too optimistic, especially for container cargo. This does not augur well for the assumptions made by De Monie.

- What will the response of vessel owners be concerning the 27.5 percent proposed increase for full containers? One must note that it is easier for ship owners to pass on to shippers/ cargo owners, increases in port charges, than to reduce cost to shippers as a result of savings made from port cost reductions.

The above observations are not meant to disagree with De Monie but to highlight the fact that there is a need for detailed research and analysis before the final conclusion is arrived at. In Tema ports' case, sufficient data is not available to check the above points raised, so caution should be exercised.

5.3.4. Harbour Dues Proposed by De Monie

De Monie identified the GT, L.O.A. and Volume charging bases and said good arguments can be found for the application of each of them. (De Monie, 2000,p. 66) He added that none of the three is fully satisfactory. He then proposed the GT basis for Tema Port as shown in Table 6. His reasons are that, in addition to the GT's own merits, it may eliminate the confusion around "harbour rent" which is based on L.O.A. Given that pilotage, mooring, berthing and shifting charges are already based on GT it is more convenient to adopt the GT also for the harbour dues.

Again, he specifies that the GT base rates make it rather easy to make older vessels pay higher dues than newer vessels. Such a tariff measure helps to increase the overall efficiency of the cargo handling in port by penalizing less suitable or obsolete vessels. He endorsed the already existing linkage of the harbour dues to a time factor.

The practice in Tema Port is to add a supplement of 50 percent of the basic due for every additional 12 hours after the first 24-hour period. So in his calculation to arrive at the figures Table 7, he included the supplementary harbour rents paid by the sample vessels that he used. The proposed rates below are to generate 20 percent of total annual revenue.

Table: 7. Structure for the proposed new Harbour Dues on Vessels Tariff.

<i>Vessel Type</i>	<i>Rate for the first 24-hours or part thereof (in USA\$)</i>	<i>Rate for every subsequent 12-hours or part thereof (in USA\$)</i>
Container and RoRo vessels		
Of less than 15 years	USA \$ 0.8 X per GT	USA \$ 0.2 X per GT
Of more than 15 years	USA \$ 1.2X per GT	USA \$ 0.3 X per GT
All other vessels except Container and RoRo vessels		
Of less than 15 years	USA \$ 1.0 X per GT	USA \$ 0.25 X per GT
Of more than 15 years	USA \$ 1.5 X per GT	USA \$ 0.375 X per GT

Source: De Monie, 2000.

Analysis and Critiques

When discussing the structure and the levels of the new harbour dues for Tema Port, the question earlier on asked in Chapter four of this work may be asked again. What is the most suitable charging basis for the harbour dues tariff? Should it be GT, deadweight tonnage, L.O.A. or the vessel's volume? To give an answer to this question, one needs to acknowledge the fact that it is impossible to accurately determine the cost of providing the general port infrastructure per individual port call as discussed earlier in Chapter two (see 2.2.1. Marginal cost pricing). It can only be

estimated with respect to the whole port for a well-defined period of time (typically an accounting year) Therefore, the charging basis applicable per vessel call, should preferably be one that takes account of the level of demand made by each vessel on the port's general infrastructure. Hence, most charging basis are a function of the size of the vessel as this parameter offers the best approximation of the demand made on the port infrastructure.

In the majority of ports, it is the GT unit, which has traditionally been applied, for example Rotterdam, Singapore and Antwerp. The author therefore agrees with De Monie for the adaptation of the GT unit for the calculation of the harbour dues.

The disagreement is with the basis for calculating the new harbour dues, which had the supplementary harbour rents paid by vessels inclusive. In the first place the 50 percent for every 12 hours after the first 24 hour is too much as mentioned in chapter four (see 4.3 under "harbour due"). It is too high, so about 25 percent seems more reasonable so that vessels are not chased away. The second issue with the supplementary harbour rent in the usage of the calculation is the fact that if in the future efficiency increases and the ships do not over stay to attract the supplementary rates, then the harbour due will not be able to meet the proposed 20 percent of the total annual income. Since the harbour dues are being revised upwards, coupled with the time factor linkage, long staying ships would automatically make a more suitable contribution, because it would be in line with their actual time use of the port's resources. Table 8 shows the above point.

Table 8. Harbour rent generated by vessels in a representative sample of seven vessels.

<i>Vessel and number of 12 hour periods spent in port after the initial 24 hour period</i>	<i>L.O.A</i>	<i>GT</i>	<i>Basic harbour rent paid (in USA\$)</i>	<i>Supplementary harbour rent paid (in USA\$)</i>
Oceanic Confidence (15 periods)	144	11031	300	2250
Egoli Star (0 periods)	167	14969	600	-
Kumasi (0 periods)	207	29572	850	-
Tanja Jacob (3 periods)	176	23847	600	900
Claes Maersk (0 periods)	190	20842	600	-
Elena G (3 periods)	145	10323	300	450
Valy (15 periods)	153	11136	600	4500
Total/	1182m	121720GT	3850	8100

Source: Writer on the basis of Tema data.

The total revenue from the harbour rent on the seven vessels amounts to US\$ 11,950.00 but a substantial extra revenue (US\$ 8,100.00) was generated by the supplementary harbour rents. The supplementary is even actually higher than the total from the basic harbour rent. So the usage of the present aggregated harbour rent revenue to calculate the new rates is wrong.

If efficiency improves and turn around time decreases or even if the 50 percent supplementary rate should be reduced to 25 percent as suggested, the targeted revenue to be generated by the harbour due cannot be met.

5.3.5. Berth occupancy charges proposed by De Monie

De Monie identifies two factors that justify the introduction of a new tariff, “ berth occupancy charge” in Tema Port. These two main features are: limited number of berths and secondly their common use function. He believes that this will ensure the recognition by users; the value of the berths and its efficient usage will be promoted. Two formulas were used to calculate the proposed berth occupancy charge as shown in the Table 9 as follows:

- The berth occupancy charge based on remaining amortization.
- The berth occupancy charge based on a predetermined yield requirement.

For a typical container berth, he estimated that the required revenue per meter of quay occupied per day should be US\$50.50. He went ahead to comment that the users are likely to argue that US\$50.00 is unacceptable and unbearable but this is the amount, however, that would be required by the Port Authority to meet its loan obligations and pay interest and principal for the investment exclusively made for the quay wall.

His suggestion is that Tema port may have to distribute part of the investment in the quay wall to other Tariffs, so that it can be reduced by one fourth, which will be US\$12.50 per meter of L.O.A. Some of the revenues from the port dues on vessels and cargoes and from the lease rental that the private terminal operator will have to

pay to obtain the operating concession for the container berths could also contribute to meeting the loan charges.

Table. 9 Levels of Berth Occupancy charges for two alternative approaches.

<i>Port</i>	<i>Approach 1 Amortization Per meter of L.O.A per 24 hours.</i>	<i>Approach 2 Predetermined yield Per meter of L.O.A per 24 hours.</i>
Tema	USA \$ 6.13	USA \$ 4.30

Source: De Monie, 2000.

Analysis and Critiques

At present no berth occupancy charge is applied in Tema Port, presumably because the harbour rent is expected to cover the use of all vessel-related general infrastructures including the quay-walls.

It is appreciated that the occupancy charge can become a powerful tool to ensure that ship owners put sufficient pressure on the stevedoring, cargo handling and terminal operating companies in the port to improve the latter's handling performance and reduce the ship's time in port. This is easier said than done since operators in the port other than the ship owner's mostly cause delays at berth. (Alderton, 1999, pp.197-213)²

Among the list provided by this author, are some of the factors caused by the port operators and port authority:

- Planning- Investment in new berths without ensuring that back-up areas, port access and operating capabilities such as trained manpower, cargo-handling equipment and warehousing space are able to service these new berths.

² The author acknowledged that it was BIMCO who were represented on the UNCTAD working group who attended the April 1976 conference of experts who summarised the major causes of congestion in one of their 1976 Bulletins.

- Management- Lack of continuity in senior port management positions. Lack of adequate qualifications and provision for upgrading knowledge.
- Labour- Poor labour relations, leading to inefficient restrictive practices, strike etc. Problems caused by too much or too little labour, according to circumstances.
- Co-ordination- Lack of co-operation between different private and governmental organizations working in the port area.
- Maintenance- Inadequate maintenance policies, which result in a high proportion of equipment being out of service.
- Clearance procedures and documentation- Outmoded documentation requirements and processing methods, (either on the part of operators or customs)

All the above is to emphasize that ship owners can be penalized to pay more for berth occupancy charges through no fault of theirs. There must be enough competition to put operators on their toes and the port authority must be mindful of carefully determining the rates for the berth occupancy tariff as a function of the vessel's performance and the time she spends there.

Also, the charging levels of the berth occupancy have been calculated on the assumption that the average berth occupancy would be 65 percent. But the achievement of the 65 percent assumption depends on the demand for berths as well as on the efficiency with which ships at berth are handled. (Francou, 2001). There can be the risk of waiting.

Furthermore, De Monie has proposed annual lease rent to be paid by the terminal operator to the port authority, which is supposed to cover the cost of providing the berth as the case may be. The port authority would therefore be charging double for the provision of the same facility. The private terminal operator will incorporate the rent paid in the handling tariffs to be paid by the vessel operator. In this case the

vessel operator is paying twice for the use of the berth. Given the circumstances, there is no point in charging for them separately, especially when the consumers of sea transport must ultimately pay all such charges by being incorporated in the freight rate. If Tema Port should go ahead to charge both tariffs, then they are still assuming monopolistic powers and are not being customer oriented.

In view of all the complex issues surrounding the introduction of a berth occupancy charge it is recommended that Tema Port Authority keep to the traditional application of pilotage, towage and mooring separately. The much desired efficiency expected from the application of the berth occupancy charges can be met by the already existing time factor linked to the Harbour dues. The berth occupancy idea can be considered in the future when Tema Port builds specialized container terminals, not with their multi-purpose berths.

5.3.6. Pilotage charges proposed by De Monie

De Monie proposed a pilotage tariff, which can be applied if Tema Port decides not to go in for the berth occupancy charge. He acknowledges that the existing pilotage charges are too high (see Appendix C), but could not recommend a reduction because there is the need for further study of the underlining factors of the service's, operational and cost structure, possible changes in activity level of the pilotage activity and its future investment requirements.

He therefore proposed that Tema Port maintain in the first phase the present pilotage tariff structure but an application of additional charges when the pilot is delayed beyond the first 24 hours. The merit and main justification for billing the extra time spent by the pilots during the entry or exit of the port, according to him, is that the principle of "the user pays for the service he demands" fully applies. The pilotage supplement of 50 percent of the basic rate for every subsequent half hour was calculated based on time spent on pilotage for some sample vessels.

Analysis and Critique

Increasing the efficiency of the pilotage service is appreciated, but such an arrangement would work better in a port with efficiently run pilot services. Tema Port is likely to have problems because the system is not that efficient. The author therefore supports the recommendation of an immediate study of cost, operational and investment of pilotage service but does not agree with the introduction of the pilotage supplement. The pilotage charges are already too high.

The port should also remember that the ship operator might pass on any increase in pilotage charges to the cargo owner without causing the operator to improve the port asset utilization. It is not automatic that this kind of penalization charges will necessarily lead to any modification of the ship operator's behaviour. The charging of a supplementary pilotage charge should be suspended until the recommended study is completed and proper analysis has been made. Pilotage is a sort of monopoly service in Tema Port so; any unclear and very high charges may be construed as exercising monopoly power.

In conclusion, De Monie has done a great deal of work under the circumstances; however, it is not complete. Proposals have been made without having all the necessary data available. Again charges introduced, which are performance -based, attract penalties when schedules are not met but have no incentive for institutions that performed well. As regards the choice of the level of charges it is necessary not to cause under-utilization as much as possible while at the same time avoiding over-utilization. Neither of these alternatives is acceptable. Too much penalization and too high uncompetitive prices can chase away port users and that will result in under-utilization of the facilities or services. What is sought is a compromise between the two extremes.

Though the port has to satisfy financial commitment as prescribed by the Landlord Ports Bill, it still has to consider the interest of the port users and acknowledge that they are in competition. The port must have a second look at the new proposed tariff structure and levels taking into consideration the analysis made in this chapter and the suggested recommendations in the Chapter six of this project work.

CHAPTER SIX

6. CONCLUSIONS AND RECOMMENDATIONS

6.1. CONCLUSIONS

This paper is concerned with pricing in a privatized port. It involves assessing global pricing strategies, determining specific price actions toward principal and intermediate parties in the port system, and finally considering the extent of pricing regulations needed. The transfer of port services to the private sector has been accelerating over the past ten years. The usual form of privatization has been that of retaining the public port authority as a landlord having overall control of the port and, usually, retaining direct responsibilities for such matters as planning and safety. The private sector bodies provide such services as cargo-handling, receiving and delivering, storage and occasionally, processing and packaging.

The new distribution of roles between public and private actors, calls for an appropriate allocation of duties and responsibilities, of risks and rewards, to make the global transportation system work as efficiently as possible. Similar to steps being taken elsewhere, Ghana began a national port reform process in 1997 that culminated in the preparation of the Landlord Ports Bill, 2000. Since reliance cannot be placed on direct competition between ports in the sub-region, the bill was designed to have regulations for both the port authority and the private operators. Since Tema Port handled about 169,687 TEUs in 1998, there can be intra-port competition by the acceptable thresholds of volume of container traffic as has been described in this work.

Despite the possible intra-port competition, public regulation of those prices not determined in competitive circumstances is essential. The challenge for Tema Port Authority is to create a system for monitoring port competitive behavior that

addresses market performance. They can do this by relying on complaints from an aggrieved party, which requires them to set up an effective complaint system. Internal research can also be done via monitoring trade journals, newspaper articles, and perhaps designing questionnaires for the big customers for feedback. Such regulation can be achieved only if proper principles for pricing are observed. These principles have been described in this paper. It is clear from the range of ideas presented in the literature and discussed in this paper that there is no shortage of ideas or principles to follow and this is such a complex topic that it appears unlikely that there could ever be one simple panacea. There is no single pricing principle that would be universally applicable to all ports but perhaps a more flexible approach might be useful.

More work needs to be done on the proposed pricing structure for Tema Port by De Monie. The availability of information is very vital as one of the basic requirements for the preparation or revision of port tariffs. (See Chapter 4.2). Conclusions cannot be reached about what the pricing structure should be if information finding is still in process. The proposed performance-based pricing is expected to lead to a more efficient use of existing port facilities by providing incentives for faster ship turn around, by ensuring port facilities are used by those who want them most. It should not involve only punitive measures.

Tema Port is already conceived by customers as expensive so increasing tariffs, as a means of meeting the financial requirements alone is not appropriate. Consideration must be given to reducing the level of dues on cargo, pilotage and towage while an upward revision of the harbour rent is appropriate. Care must be taken so that customers are not chased away due to high prices. There is a lack of competitor's analysis in the formulation of the pricing structure. Comparative pricing is necessary since Tema Port is in competition with ports like Abidjan, Tog and Benin in the sub-region for the landlocked countries trade.

Marketing must be integrated into the corporate strategy of Tema Port with specific budget allocated towards marketing research. It is through marketing research that the required information will be made available to assist in exercises such as the formulation or revision of port tariffs.

Finally, the Tema Port reform process and the subsequent restructuring of tariffs is a step in the right direction especially as the global economy is moving toward a free market society and privatization with the abolishing of subsidies and governmental control. Efficiency and performance will be the key to the survival of organizations. It is a complex procedure for a port to establish or change its pricing structure; frequent changes can be a source of confusion for port users. The pricing structure of Tema Port should be responsive to user demands while at the same time being sufficiently robust enough to meet both current and future pricing objectives. It is the author's hope that the management would take a second look at the proposed tariff structure and levels, and streamline the shortcomings as mentioned in this paper. While doing this, the management should consider the recommendations given in this paper.

6.2. RECOMMENDATIONS

The privatization programme has fallen behind schedule because of political disruptions, (a new government was voted into power just before the real implementation) so it is still at its initial stage of implementation and it is therefore premature for anyone to make any statements pertinent to the degree of any success achieved. What can be said, however, is that the serious project preparation that has been undertaken, the expressed strong commitment that has already been demonstrated by the government of Ghana and the management of Ghana Ports and Harbours Authority and the fact that there is not yet any evidence of resistance to change particularly by the labour unions and customers, provide a promising scenario for the project to adequately meet the targeted objectives.

The aim of these recommendations has therefore been to provide a better insight into some of the issues concerning the price restructuring process (pricing structure and levels) which the author feels are not being adequately dealt with. Below are the recommendations:

1. Research strongly proves that privatization has been effective for enhancing efficiencies and lowering costs, provided it is in a competitive environment. Tema Port should avoid the transfer of “public sector monopoly” to a private one. Since the traffic of the port meets the requirement of multiple operators in the port as discussed in this paper, it would be economically healthy that Tema Port encourages the operation of multiple operators to foster intra-port competition. The port has a role in ensuring that no private terminal operator monopolizes the country’s container trade. The port authority should beware of the kind of bid conditions they accept, and the kind of guarantees requested by the private operators.

It is better to avoid a monopolistic setting rather than using penalties introduced in the contract to penalize the parties to the agreement for failing to meet their contractual obligations. The effectiveness of these penalties is often limited because the parties will disagree as to the circumstances leading to the request for penalty. The civil justice system is usually slow in processing these claims and its judgments are frequently influenced by political and monetary considerations.

It should however be noted that if the port authority is not careful as to how many separate units they create for the sake of internal competition, there could be negative impacts resulting from over compartmentalization. The size of the facilities and the traffic should be sufficient to justify the risk of the private operator. The private sector’s argument for restrictions on competition

are generally linked to the need to recover the cost of their capital invested. This is especially common for concessions, which require initial capital investment where Tema Port authority would usually be required to guarantee traffic volumes.

It is recommended that about three operators be given concessions since the port handles about 169,687 TEUs per annum (see Trujillo & Nombela, 2000 analysis in Chapter 3.3). It is also recommended that the port authority do all it can to increase its traffic. Increasing traffic is achieved by increasing the market share in existing businesses and by entering into new businesses (Ma, 2001). The former requires an understanding of how to achieve competitive advantage and the sensitivity of potential users to changes in service quality and charges. The latter requires management to seek out potential markets and to risk in developing new services that will attract this demand. These initiatives must be complemented by more aggressive promotions and greater client orientation. These will ensure that there is enough competition as well as providing increase in traffic so that the private operators can stay in business.

2. While effective price regulation is a topic in itself, the concern here is that the port should clearly state which prices would be regulated, develop unambiguous procedures for adjustment and formally be committed to follow them. These were lacking in the Landlord Ports Bill, 2000 as discussed in Chapter five of this paper. Though the bill indicated that the port authority was going to be the regulatory body, everything was to be approved by the Ministry. In effect the Ministry will determine the basis for price and rate regulations.

In relation to the above, though the bill indicated that Tema Port must operate the commercial freedom to act like any other commercial company but whether it is totally free to act independently on issues where the government is pursuing a strategic aim in its (national) interest, is at least questionable. This particular aspect of continued bureaucratic interference needs immediate attention. The concept of the autonomous port must be well defined and implemented such that port charges are established and amended to satisfy the port requirements rather than those of the government.

Again, there was no identification of the specific services to regulate and to what extent. These regulations should detail the maximum amount that the port authority can charge its contractors, likewise the ceiling to be proposed for the private operators. Protest against discriminatory practices should be clearly stated. Tariff setting has to be seen in the context of a cost-benefit analysis for the user rather than in the setting of rigid ceilings and floors. The challenge before the regulator is to ensure tariff stability over a period of time, optimally balancing the cost to the user vis-à-vis the viability of the port terminal operator

If it is too late now to modify the Landlord Ports Bill to take account of the above pitfalls, then, it is suggested that the port authority:

- Adopt other legislative documents; to clearly deal with the issues raised above. For example, some of the above can be clearly stated in the concession agreement document.
3. The marketing of port services has received little attention in Tema port. There is only one officer in charge of marketing. The Management often neglects marketing research proposals. Budgets are made at the beginning of every year but approval for drawing down for marketing research is very

difficult. The Management is more interested in spending on advertisement imposed on the authority by the sector ministry or government. Traditional assumptions that most cargo is captive and that there is no need for promotion have prevented management from addressing marketing requirements. Where threatened by competition, (Burkina Faso and Mali trade) they increase market research, advertisements, and international relationships, but none of these have a direct impact on markets. In contrast, the direct marketing measures include discriminatory pricing, differentiation in the quality of service, and preferential access to port services.

In Tema Port the very procedure of fixing port charges does not make enough room for customer needs consideration. The procedure left out data gathering on port user costs and cost at competing ports. Initiating a price change must involve the anticipation of possible buyer and competitor reactions. The total port charges per ton of cargo handled must be compared with the total transportation costs for the cargo. Charges at the port must be made comparable to or less than those at competing ports.

These would introduce the value-based pricing strategy into the pricing structure and as well as efficiency.

4. The question of allocating the infrastructure charges between the ship and the cargo must be properly addressed. Insofar as the ship dues are closely related to the size and cost of the basic infrastructure required to accommodate them, it may be accepted that these have some relationship to the port's costs. There is, however, no relationship between cargo dues and specific port costs. Whilst it is obvious that they contribute to the port authority's revenue (see Chapter five), they are actually no more than a simple tax on goods moving.

The maintenance of pricing structures in which the charges levied are quite unrelated to the specific costs associated with the call of any particular ship

may be taken as evidence of monopoly power on the part of the port, whatever its financial results may be. The author supports the financial consultant's proposal that the dues on cargo are reduced and the dues on ships are re-structured.

There is no denial that infrastructure charges assessed against vessels would not ultimately be transferred back to shippers through the freight rates. But the ability to do so is dependent on the elasticity of demand and on the proportion of total costs attributable to freight charges. Where necessary, corresponding increases in liner freight rates should be accepted by the shippers. In order not to add to the non-transparency in the port costs, Tema Port should make the shippers aware of the actual costs involved. Consumers of sea transport may need to be informed that this revised pricing policy should have no effect on the cost of through transport but rather reflect greater efficiency.

It is appreciated that Tema Port Authority may lose if the improvements in berth productivity are not compensated by higher trade (traffic) levels both in the short and long run. But the rents to be received from concessions can be used to augment such lost in revenues.

5. Due to the growth in the interest of port users in the transparency of pricing structures, Tema Port must do more in that direction. The ship owners and Agent Association reported that they were less involved in the price restructuring process. But to be effective, the pricing policy must allow for frequent yet well-announced changes. The price change should be supported with a company communication programme telling customers why prices are being changed (either increased or decreased). A port considering a price change has to worry about the reactions of its customers.

There is a need for transparency in decision-making, so the port should provide information to all port stakeholders about the new proposed tariff structure as a result of the privatization process. As mentioned earlier in this paper, a presentation package should be developed, including organizing seminars and stakeholder analysis to provide the opportunity for a positive exchange of views, publishing and distributing to port users, materials and analysis, including constructive comparisons with neighbouring ports.

In conclusion, there is no such thing as a blue print for pricing in a privatized port. As far as the author is concerned, the conclusions and recommendations provided are meant as a contribution and are for the consideration of Tema Port management even as they evaluate approaches to establish the new pricing structure and levels for the privatized port. The recommendations can also be used by any other port, which finds it appropriate and applicable to its peculiar situation.

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APPENDIX A

FIRST SCHEDULE: VESSEL HANDLING DUES AND CHARGES

A. SHIP DUES	FOR THE FIRST 24 HOURS OR PART THEREOF	FOR EVERY SUBSEQUENT 12 HOURS OR PART THEREOF
I. HARBOUR RENT		
ALL SHIPS		
Where LOA does not exceed 50 meters	50.00	25.00
Where the LOA exceeds 50 meters but not more than 75 meters	100.00	50.00
Where the LOA exceeds 75 meters but not more than 100 meters	150.00	75.00
Where the LOA exceeds 100 meters but not more than 125 meters	225.00	112.50
Where the LOA exceeds 125 meters but not more than 150 meters	300.00	150.00
Where the LOA exceeds 150 meters but not more than 200 meters	600.00	300.00
Where the LOA exceeds 200 meters but not more than 250 meters	850.00	425.00
Where the LOA exceeds 250 meters	1,200.00	600.00
Baco Liner Barge (Per Barge)	20.00	10.00

REBATES

1. Vessels which call to work cargo and berth for 6 hours or less shall pay 50% of harbour rent.
2. Vessels calling for fresh water, bunkers or stores only shall pay 50% of harbour rent.

EXEMPTIONS: No Harbour Rent is due for:-

1. Hours a ship spends in port on Christmas day or on Good Friday.
2. A ship which fails to sail due to causes for which neither the Master nor the Agent is responsible and which the Harbour Master has certified that the delay in sailing was in the interest of the port
3. National/Foreign government ships not engaged in profitable ventures
4. Man-of-war
5. Ships berthing at the Valco Berth.

SOURCE:Port Tariffs Seaports of Ghana (Ghana Ports and Harbours Authority)1997

APPENDIX B.

II. PORT DUES ON CARGO	PER TONNE US\$	REMARKS	
(i) BULK CARGOES:			
(A) DRY BULK			
Grain	1.05		
Clinker	1.05		
Bauxite	0.50		
Manganese	0.75		
Gypsum	1.99		
Limestone	1.05		
(B) LIQUID BULK			
Crude Oil	1.25	Shipments from Tema to Takoradi is chargeable only at Tema	
Petroleum Products (Imports and Exports)	1.25		
(ii) NON-TRADITIONAL EXPORTS			
Dried agricultural products in bulk/semi-bulk eg, Cassava Chips, Cotton Seeds, Palm-Kernel Cake, Wheat bran pellets etc.	1.10	E.g. Cocoa Butter, Cake, Powder, etc.	
Fruits and Vegetables e.g. Pineapples, Banana, Mangoes, Cashew, Plantain, Yam etc.	1.50		
Sheanuts/Sheabutter	1.50		
Palm Oil	1.50		
Cocoa Products	1.62		
Non-traditional Exports not otherwise specified.	1.60		
(iii) OTHER COMMODITIES			
Coal, Coke, Patent Fuel	0.62	Including Bunker Coal	
Timber Exports	2.24	Food Stuff Produced in Ghana and shipped between domestic Ports	
Foodstuffs for consumption in Ghana	0.62		
Passengers	8.07		Per Passenger
Poultry/Birds	0.20		Per Live Bird
Livestock (Per Unit)	1.52		E.g. Cattle, Horse, Goat, Sheep
All Commodities not Otherwise Specified	2.49		

NOTE:

Port Dues with respect to Transhipment and Transit of commodities specified here shall be assessed at 60 per cent the rate specified.

APPENDIX B. CONT.

PORT DUES ON CARGO (CONTD.)

(iv) CONTAINERS/ FLATS/BOLSTERS ETC.	CONTAINER NOT EXCEEDING 20 FT. IN LENGTH	CONTAINER EXCEEDING 20 FT. BUT NOT MORE THAN 40 FT. IN LENGTH	CONTAINER EXCEEDING 40 FT. IN LENGTH	REMARKS
	US\$	US\$	US\$	
Stuffed Containers	34.00	64.00	74.00	Import/Export
Stuffed Platforms/Bolsters	34.00	64.00	74.00	Import/Export
Empty Containers	17.00	32.00	38.00	Import/Export
Empty Platforms/Bolsters	2.00	3.40	4.00	Import/Export

NOTE: Port Dues with respect to Transshipment and Transit Containers will be assessed at 50 per cent of the appropriate rates under this item.

(v) VEHICLES/TRAILERS	PER UNIT US \$
Saloon Cars, Estates	20.00
Mini Vehicles:-Mini Buses, Vans, Station Wagons, Cross Country Vehicles, Pickups, and others weighing up to 3,000 kgs.	45.00
Utility Vehicles:- Buses, Trucks, Tractors, etc.	63.00
Trailer Units	63.00

NOTES:

1. Vehicles/Trailers double or triple stacked will attract rates as per vehicle/trailer type for the number of vehicles/trailers in the stack.
2. Port Dues with respect to the Transshipment/Transit of Vehicles shall be assessed at 60 per cent the rates specified under this item.

(vi) PIPELINE CHARGES	Per Tonne ¢
Use of Pipeline (Berth No. 8, Tema Main Harbour)	9.00
Oil Pipeline, Tema	100.00

EXEMPTIONS FROM PORT DUES:

1. Cargo discharged and re-loaded from/to ship entering Port from stress of weather or for the purpose of undergoing repairs.
2. Mails.
3. Building materials and articles imported solely for port works at port of entry and certified by the resident engineer.
4. Personal baggage other than vehicles and animals/pets
5. Passengers transhipped within a Port

APPENDIX C

PILOTAGE CHARGES	PER MOVEMENT	REMARKS
ALL VESSELS, EXCEPT TANKERS & BULK CARRIERS ABOVE 20,000GT	US\$	
Vessels up to 2,000 GT	50.00	
Vessels above 2,000 GT and up to 4,000GT	80.00	Bulk Carriers Include container-bulk carriers
Vessels above 4,000 GT and up to 6,000GT	150.00	
Vessels above 6,000 GT and up to 12,000GT	280.00	
Vessels above 12,000 GT and up to 20,000GT	450.00	
Vessels above 20,000 GT and up to 30,000GT	550.00	
Vessels above 30,000 GT and up to 40,000GT	650.00	
Vessels above 40,000 GT	750.00	
Oil Rigs, Platforms and other Vessels of unusual characteristics	750.00	Irrespective of GT of Vessel/Craft

PILOTAGE CHARGES	PER MOVEMENT	REMARKS
TANKERS AND BULK CARRIERS ABOVE 20,000GT	US\$	
Vessels above 20,000GT and up to 30,000GT	1,200.00	Bulk carriers
Vessels above 30,000GT and up to 40,000GT	1,500.00	Include container
Vessels above 40,000GT	1,800.00	Bulk carriers

EXEMPTIONS FROM PILOTAGE DUES:

1. National or Foreign Government Ships not employed in profitable ventures.
2. Pleasure crafts of less than 10 GT
3. Ships in distress

OTHER CHARGES	US\$	REMARKS
1. Detention of Pilot		
-First 30 minutes	60.00	Or Part thereof
-Every Subsequent 30 minutes	75.00	Or Part thereof
2. Cancellation of Movement	75.00	Per movement cancelled within 1 hour of scheduled sailing time
3. Pilotage to Tema Dry-Dock	25.00	Additional to the relevant charges specified above, and is irrespective of GT of vessel

SOURCE: Port Tariffs Seaports of Ghana (Ghana Ports and Harbours Authority) 1997

APPENDIX D.

TOWAGE CHARGES ALL VESSELS, EXCEPT TANKERS & BULK CARRIERS ABOVE 20,000GT	PER MOVEMENT US\$	REMARKS Bulk Carriers Include container-bulk carriers
Vessels up to 1,000 GT	75.00	
Vessels above 1,000 GT and up to 2,000GT	100.00	
Vessels above 2,000 GT and up to 5,000GT	200.00	
Vessels above 5,000 GT and up to 10,000GT	350.00	
Vessels above 10,000 GT and up to 15,000GT	480.00	
Vessels above 15,000 GT and up to 20,000GT	600.00	
Vessels above 20,000 GT and up to 30,000GT	700.00	
Vessels above 30,000 GT and up to 40,000GT	800.00	
Vessels above 40,000 GT	900.00	

TOWAGE CHARGES TANKERS AND BULK CARRIERS ABOVE 20,000GT	PER MOVEMENT US\$	REMARKS
Vessels above 20,000GT and up to 30,000GT	1,200.00	Bulk carriers
Vessels above 30,000GT and up to 40,000GT	2,500.00	Include container
Vessels above 40,000GT	3,500.00	Bulk carriers

NOTES:

1. Towage with **ONE** tug is compulsory for all vessels below 1000 GT. And with **TWO** tugs is compulsory for all vessels over 1000GT
2. Towage when vessel is not under steam will attract **DOUBLE** the appropriate rate.

SOURCE:Port Tariffs Seaports of Ghana (Ghana Ports and Harbours Authority)1997