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Importance of freight rate restoration for the improvement of customer service level

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IMPORTANCE OF FREIGHT RATE RESTORATION FOR THE IMPROVEMENT OF CUSTOMER SERVICE LEVEL

By

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Declaration

I certify that all the material in this dissertation that is not my own 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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Abstract

Title of Dissertation: **Importance of freight rate restoration for the improvement of customer service levels.**

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The dissertation is a study of rate restoration and the impacts on customer service levels.

A brief look is taken at the present and past environment in shipping, especially considering the Ceylon Shipping Corporation Ltd. The geographical advantage, national economy and Port of Colombo as a hub port are examined. Cargo movement and the market share for CSCL are also analysed.

The role of liner conferences and the importance of joint ventures are investigated. In the latter part other main factors like competition, freight structure and freight market are examined thoroughly by considering their importance to the topic.

It is necessary to be cost conscious to survive in today's competitive environment. Hence, the structure of the cost elements is examined. In particular, besides the main cost elements, other factors like empty container movements are analysed.

Other key areas are also examined and discussed, including the present trend in supply and demand, and the impact on small shipping companies like CSCL are investigated. The performance of the feeder service is examined by considering its ability to capture a market share in the Indian Sub Continent. Finally, the importance of having strong financial stability to improve customer services is discussed. In order to do so, the need for rate restoration is emphasised in the conclusion.

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List of Abbreviations

ANL	-	Australian National Line
APL	-	American President Line
BAF	-	Bunker Adjustment Factor
CAF	-	Currency Adjustment Factor
CFB	-	Central Freight Bureau
CGM	-	Compagnie Generale Maritime NV
CMA	-	Compagnie Maritime de Affreterment
COSCO	-	China Ocean Shipping Company
CSCL	-	Ceylon Shipping Corporation Ltd
DWT	-	Dead Weight Tonnage
EDI	-	Electronic Data Interchange
FEFC	-	Far East Freight Conference
FOB	-	Free On Board
GDP	-	Gross Domestic Product
GNP	-	Gross National Product
GP	-	General Purpose
HFO	-	Heavy Fuel Oil
IPBCC	-	India Pakistan Bangladesh Ceylon Conference
IFO	-	Intermediate Fuel Oil
IMO	-	International Maritime Organisation
MDO	-	Marine Diesel Oil
MOL	-	Mitsui OSK Line
M/T	-	Metric Ton
NOL	-	Neptune Orient Line
NVOCC	-	Non Vessel Operating Common Carrier
NYK	-	Nippon Yusen Kaisha
OOCL	-	Orient Overseas Line
P&O	-	Pearl and Orient Line
QEQ	-	Queen Elizabeth Quay

SCI	-	Shipping Corporation of India
SWOT	-	Strengths, Weaknesses, Opportunities, Threats
TEU	-	Twenty Equivalent Units
THC	-	Terminal Handling Charge
UK	-	United Kingdom
UN	-	United Nations
UNCTAD	-	United Nations Conference on Trade and Development
USA	-	United States of America
USD	-	United States Dollars

Chapter 1

1. INTRODUCTION

1.1 BACKGROUND

Shipping is a risky business and to survive in today's competitive environment, shipping lines are most concerned about the revenue. Freight rates have become a very common topic and there are lots of ongoing discussions today due to the fact that they have decreased dramatically. Many shipping companies are following cost-effective measures, because it is practically impossible to earn profits under this rate fluctuation situation. Alliances/Mergers and acquisitions have come into the field aiming to reduce the unit cost and to increase the revenue. Ceylon Shipping Corporation Ltd is a liner shipping company involved in container transportation. It has faced a lot of difficulties during the last decade. Not only the small companies but even the giants in the industry have suffered during that time.

Customers who are wishing to get quality service, are most important to any industry. In order to provide such quality, shipping lines need to get sufficient income. That is why freight rates become so important today.

1.2 OBJECTIVES OF THE DISSERTATION

The objective of this dissertation is to analyse the market trends and the internal/external factors, which influence shipping companies. Ceylon Shipping Corporation here represents all other shipping companies which suffered because of low freight income and high cost during the last decade.

At the beginning the dissertation describes the past and the present environment in shipping in Sri Lanka, especially in the context of CSCL.

Being an international business, shipping deals with factors which influence its success or failure. Chapter 3 analyses these factors and describes how it affects shipping companies.

Cost is also important to any company as well as revenue, because profit is the balance between them. Chapter four discusses the cost elements including other common topics today like empty container movements and unused capacity. These are really big problems to every company because these costs make a major contribution to the total cost of the company.

It is necessary to understand the present trend/changes in shipping and how other companies react to these changes. At the same time it is important to increase a company's market share under this situation. Therefor chapter 5 describes the above idea briefly.

1.3 RELEVANCE OF THE TOPIC TO THE CSCL

This study discusses all internal and external factors, which have affected the corporation during the last decade. It also analyses the key areas and future trends. This paper gives an idea about the whole industry and the reasons to follow cost effective measures. As a small company, CSCL has also tried to reduce costs in several ways, but there is no significant effect on the profit side. Everybody in the industry realises that there must be some changes on the revenue side as well. Putting the freight rates back to the previous level is necessary at this time to the CSCL.

1.4 RESEARCH METHODOLOGY

This study has been carried out mainly by means of library research, lectures delivered by the resident and visiting lecturers of the World Maritime University, personal observations, information gathered during field studies and winter vacation in Sri Lanka. Apart from the above, the author has made personal contacts with shipping lines, shippers and also the India, Pakistan, Bangladesh and Ceylon conference. Newspapers, periodicals, journals, magazines, Internet and e-mail

facilities available at World Maritime University were very much used to collect the latest information.

1.5 DIFFICULTIES ENCOUNTERED

The author has found it very difficult to get information about the freight rates offered by other shipping lines. Sometimes it was also very hard to collect data from the Ceylon Shipping Corporation because some information could not be published. The author tried to get information about the rate restoration, step by step with the amounts and the effective dates. However this study had to be limited due to lack of information. The field study to London was very useful regarding this study, because it helped the author to contact the IPBC conference members.

Chapter 2

2. AN ANALYSIS OF THE SHIPPING ENVIRONMENT IN SRI LANKA, WITH EMPHASIS ON CEYLON SHIPPING CORPORATION LTD.

2.1 HISTORY AND PRESENT SYSTEM EXPERIENCED IN CEYLON SHIPPING CORPORATION LTD. (CSCL)

CSCL was started as a joint public/private company in 1969 and was later converted into a state corporation by act of parliament in June 1971. In 1980, CSCL operated 8 conventional vessels to the U.K and the European continent, Red Sea ports, Singapore and the Far East. In June 1980, it created the first ever fully containerised service in the whole of south Asia. CSCL gained an excellent reputation and was able to provide a reliable, safe service to its customers, and not only in Sri Lanka but in the whole Indian Sub Continent. CSCL won the star performance award in 1994 and 1995 awarded by the Port of London Authority, and also the 6th Asia award in 1985 awarded by the Trade Leaders Club. (Source: CSCL report)

In the beginning a conventional vessel took 150 days to complete a round voyage from Sri Lanka to Europe and 5 conventional vessels were operated to offer a monthly service. But after the fleet was modernised in 1980 a container vessel took only 44 days for the round voyage. The shortening of port time, less damage and pilferage to the cargo as well as shorter transit time, benefited both shippers and owners. After introducing the fully containerised service to Europe and the U.K, CSCL received commendation from customers, both in Sri Lanka and Europe. By introducing container vessels, the foreign exchange saving also increased.

The following table illustrates the foreign exchange saved by CSCL taking preference through the Central Freight Bureau in the export trade to CSCL and directing all state departments and corporations to use CSCL vessels for their

imports. Both exporters and importers could pay the freight charges in local currencies, which resulted in an increase in foreign exchanges during that period. (In Sri Lankan Rupees)

Table 1 - Foreign Exchange Savings during 1972 to 1986

Year	Rs. M
1972	8.225
1973	9.617
1974	45.824
1975	67.103
1976	60.415
1977	96.565
1978	130.444
1979	156.873
1980	225.307
1981	217.183
1982	246.086
1983	143.299
1984	292.164
1985	403.881
1986	325.773

(Source: CSC Annual Report 1986/1987)

In 1983, CSCL started a new service to the West Coast of the USA and Canada, jointly with Maersk Line in Denmark. Another service was started in 1984 with the National Line of Australia (ANL) to Australian ports. At the end of 1984, CSCL owned 8 container vessels (2759 TEU), altogether having a fleet of 21 ships (268,543 DWT) (CSCL report).

CSCL was converted into a government limited liability company in 1992 and registered under the Companies' Act of 1983 in the name of Ceylon Shipping Corporation Limited. This was in order to provide a more efficient service in the

competitive shipping market. Thereafter, CSCL started to operate a common feeder service between the Indian Sub Continent, calling at Cochin, Madras and Singapore and vice-versa. The CSCL`s European service continued to grow and showed excellent profits and it was further expanded during 1985 by chartering 4 vessels, which made it a uniform service on a 14 days frequency with 4 sister vessels, each of 1075 TEU capacity. CSCL continued to assist the trade by providing better freight rates for traditional and non-traditional products.

Until 1997 CSCL operated services between South Asia and Europe, South Asia and the United States East Coast, South Asia and the Far East with foreign collaboration. During that period, it faced severe competition on all trade routes operated by CSCL and the steady increase of vessels` charter hire in the European service. Despite this it continued by operating a full fleet of faster vessels (average speed 16.5 knots) to match the competition in the South Asia/Europe service.

CSCL has made slot charter arrangements with other lines like Norasia Line and CMA in the Far East market to reduce costs since 1995. However, CSCL was unable to participate actively in the trade due to high slot rates quoted by the carriers, and CSCL had to choose and pick cargo, which at least generated revenue to cover cost.

2.1.1 Current business activities of CSCL

In 1997 CSCL decided to off-hire 5 time chartered vessels, which were operating on the South Asia/Europe service due to the financial losses. Currently CSCL is operating a joint service with the Shipping Corporation of India (SCI) and ZIM Israel from South Asia to Europe and commands 15% of the market share in the said trade. It also performs the Far East service with a slot charter arrangement with CMA, Norasia and NOL on container carriage and space charter arrangements with MOL in the car carrier business.

The Corporation has two small vessels which were built in 1983 and they are currently being chartered out for government supply contracts, and CSCL has

become a non vessel operating common carrier (NVOCC) in the main trade (South Asia/ Europe).

2.1.2 The main business scope of CSCL is in the following sectors.

1. South Asia / Europe container service.

   1.SCI

L.B. Shastri	-	1640TEU
Indira Gandi	-	1640TEU
Rajiv Gandi	-	1640TEU

   11.ZIM

Zim India	-	1400TEU
Zim Shanghai	-	1400 TEU

   111.YML

Ming Comfort	-	1984 TEU
Ming Universe	-	1984 TEU

2. South Asia / Far East service on slot charter arrangements with Norasia, CMA and NOL.

   1.CMA

Villede Libra	-	2975 TEU
Villede Capella	-	3538 TEU
Sagith	-	3538TEU
CGM Pascal	-	2900 TEU

   11.Norasia (N/A)

   111.NOL (N/A)

3. Carriage of vehicles from Japan, under pure car carrier arrangement with Mitsui OSK Lines Ltd.
4. MV. Lanka Mahapola and MV. Lanka Muditha is chartered out and continues to operate profitably.
5. CSCL works as a casual caller agency and represents the interest of the Sri Lankan Army.
6. Acting as receivers' agents and also co-ordinator to the Commissioner General of essential services, for wheat, fertiliser, sugar and rice vessels.

The Far East / Colombo service and the pure car carrier arrangement on third party vessels have brought low profits to the corporation, because the companies which the CSCL has slot charter arrangements with are not dedicated, fully fledged services and operate on a marginal contribution basis to cater for the government sector imports.

2.2 GEOGRAPHICAL ASPECTS

Ceylon Shipping Corporation is the national carrier in Sri Lanka. The country is situated in the Indian Ocean. The island is geographically located at a point where East meets West, exactly 32 km away from the south coast of India between Northern latitudes 5° 55`and 9° 50`and Eastern longitudes 79 ° 40`and 81° 52`, comfortably accessible from any point on the globe. It has a rich heritage and is known to have a maritime history of over 2000 years. Many seafaring nations in the world have had trading relations with the country dealing specially in merchandise such as spices, ivory and textiles. Today it is well known for its aromatic tea, precious stones and finished garments. Due to the geographical location, the country plays a vital role in the shipping business, and CSCL is giving a considerable contribution to the development of the country.

Sri Lanka is an island, situated in an ideal position. So it can be a benefit to both the Port of Colombo and CSCL. Due to the location, the corporation has customers all over the world, which helps it to carry out business successfully. The corporation has a good opportunity to improve the services and increase the number of customers taking this as an advantage. Presently, the corporation has services in Europe, the USA, Far East, Pakistan, Bangladesh and India. Large numbers of exporters in Sri Lanka export cargo to many areas in India like Bombay, Madras, Calcutta, Cochin, Tuticorin and Javahalal Nehru Port. The same applies to importers also. The transport cargo volumes to and from the Indian Sub Continent have grown continuously since 1986. This growth has increased sharply from 1991.

2.3 PORT OF COLOMBO AS A HUB PORT.

The Port of Colombo is situated on the main east-west sea-lane across the Indian Ocean. Due to its geographical location, the port of Colombo has an advantage regarding the sea borne traffic of the South Asian region. In 1997, the Port of Colombo handled 1.678 million TEU and 70%-75% of the Ports volume is transhipment cargo. It has deep draught facilities (14m maximum) to host mega carriers, and 95 % of imports and exports are moved through the Port of Colombo (Containerisation International, July 1998c, p.65). It is the only port in Sri Lanka, which can handle containerised cargo.

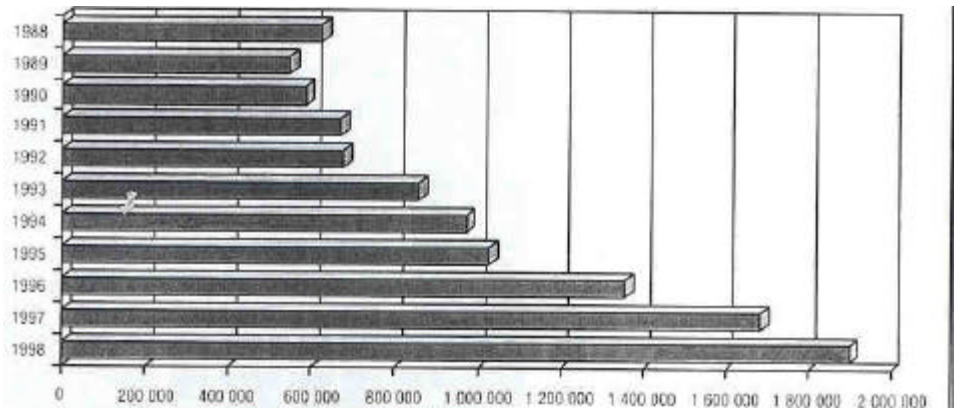
Table 2-Transhipment Statistics via Colombo in 1996

TO/FROM	TEU
Bombay	89,233
Cochin	74,463
Tuticorin	77,306
Madras	81,809
Calcutta	19,661
Chittagong	26,358
Total	**368,830**

(Source: ISL)

The Port of Colombo has to compete with Aden, Salalah and several Indian ports, but southern Indian ports are not capable of accepting even second-generation container vessels. The volumes handled through the Port of Colombo have grown dramatically during 1988-1998 and comparatively it is in a leading position in the Indian sub continent and Middle Eastern Gulf region.

Figure 1- Port of Colombo throughputs 1988-1998 (In TEU)



(Source: Containerisation International Yearbook data and Sri Lanka Ports Authority)

Table 3- Indian Sub-Continent/Middle East Gulf Throughputs of Selected Ports 1995/1998 (In TEU)

	1995/1996	1996/1997	1997/1998(Est)
Indian Sub-Continent			
Bangladesh			
Chittagong	250867	290330	N/A
India			
Calcutta	103042	95937	118055
Chennai	227488	256485	274950
Jawaharlal Neru (JNP)	339136	423148	520000
Kandla	N/A	N/A	N/A
Kochin	96044	N/A	N/A
Mumbai	517533	583415	600000
Tuticorin	68619	88769	90000
Visakhapatnam	8446	13117	15850
Pakistan			
Karachi	550650	55347	555000
Sri Lanka			
Colombo	1028746	1356301	1628000
Mid-East Gulf			
Bahrain (Mina Sulman)	99445	N/A	N/A
Iran			
Bandar Abbas	167167	237174	305447
Bandar Khomeini	6602	19790	26383
Iraq			
UmmQasr	N/A	N/A	N/A
Kuwait			
Shuaiba	51500	N/A	N/A
Shuwaikh	172396	N/A	N/A
Oman			

Port Sultan Qaboos	95605	100853	108800
Qatar			
UmmSaid/Doha	37420	45391	50776
Saudi Arabia			
Dammam	278300	307184	348800
Jubail	15368	13710	15697
UAE			
Dubai (Port Rashid)	2073081	2247024	N/A
Dubai (Jebel Ali)	N/A	N/A	N/A
Fujairah	558247	403259	N/A
Khor Fakkan	581763	665046	720000
Mina Zayed(Abu Dhabi)	245952	142797	N/A
Port Khalid (Sharjah)	52866	56016	60000

(Source: Containerisation International, Feb.1998a, p.419)

Port congestion, lower productivity and inadequate infrastructure are the problems inherent to the Port of Colombo. This leads to poor vessel turn around times and berthing delays. But the Port of Colombo wants to maintain its position as a hub port in the Asian region and is trying to improve its facilities in many ways. In order to do this, it improves berthing facilities, container handling, both container terminals and container handling equipment and also computer facilities. In particular it concentrates on maintaining good relations between the mother vessels and feeders to avoid berthing delays as a hub port. It offers competitive tariffs to its customers.

In order to improve port facilities, the Port of Colombo has decided to increase the number of gantry cranes and also additional transferor-type yard cranes, with an eight height stacking capacity for empty containers. It also plans to develop the Queen Elizabeth Quay (QEQ) but it is still negotiating with the Port Authority and South Asia Gateway Service (SAGS), a P&O Ports led consortium. (Containerisation International, July 1998c, p.65)

Sea transport is the cheapest mode of transport, providing the lowest cost compared to other modes of transport. The port cost is included in the total transport cost and the time in port also is included in the total delivery time. So the transport cost per unit of cargo should be low and time in port is also a very important element. The customers around the CSCL hope to get lower transport costs and also without delays. So the efficiency of the Port of Colombo is closely linked with the activities of

the Corporation. So if CSCL can offer lower rates, taking advantage of the Port of Colombo as a hub port in the south Asian region, it can no doubt increase its market share.

2.4 NATIONAL ECONOMY

Sri Lanka is a developing country. The economy is dependent on farming, mining and manufacturing. The main exports are tea, rubber, coconut products, textile/garments, gemstones, petroleum products and graphite. The garment industry brings the biggest earnings of foreign currency to Sri Lanka. Shipping is not only carrying cargo, it also has to deal with marketing, traffic forecasting and investments for the line. So a clear understanding of the economic situation is very necessary for any shipping company.

Gross National Product (GNP) and Gross Domestic Product (GDP) can be considered as the principal indicators, which measure the economic performance of the country.

The World Bank's definition of GDP reads " Gross Domestic Product measures the total final output of goods and services produced by an economy".

GNP reads " Gross National Product measures the total domestic and foreign out put claimed by the residents" (World Development report, 1983)

GDP composition by sector in Sri Lanka in 1994

Agriculture: 23.8%

Industry: 24.7%

Services: 51.5%

The total value of exports was $ 4.095 billion (F.O.B) in 1996, including commodities like textiles and apparel, tea, petroleum products, diamonds, other gems and rubber products.

The main trading partners by value are given below.

USA- 34.8%

U.K - 8.9%

Germany- 6.9%

Belgium - 5.9%

The total value of imports was $ 4.872 billion (F.O.B) in 1996, primarily consisting of commodities such as textiles, machinery and equipment, transport equipment, petroleum, building materials and sugar.

The main trading partners by value are given below.

Japan 11%

India 8.5%

South Korea 6.8%

Hong Kong 6.8%

Taiwan 5.2%

Singapore 4.9%

	1997(1 st half)	1998(1 st half) in US$ billion
GDP	6.1	5.1

(Source: 1. http:www.emulateme.com/economy/Srilaeco.htm)

(Souce: 2. Asia & Pacific Review)

1998 was a difficult year for the economy of Sri Lanka due to the South East Asian currency crisis. Many countries in the region experienced negative export growth: China -2%, Thailand -7.7% and India -12.8%. Sri Lanka's export growth rate has been 6.4% in 1997 and 4.7% in 1998 and was positive in USD (Board of Investment in Sri Lanka). But the economic performance of Sri Lanka remains stable in comparison to the rest of Asia because the devaluation rate in Sri Lankan Rupees against USD is much lower (29.84 % for 6 years period) than other East Asian countries.

Table 4- Currency Devaluation during 1992 - 1997

Year	1992	1993	1994	1995	1996	1997
Rupees/USD	43.83	48.38	49.41	51.25	55.27	56.92

(Source: Asia and Pacific review 1998)

Shipping is an international business. So the company which engages in shipping needs to consider the national economy as well as factors which influence the national economy. Due to the financial crisis in South East Asia, both volumes and freight rates for containerised and break bulk exports from Sri Lanka have fallen rapidly.

The needs of the people are changing and increasing. In 1978 the government of Sri Lanka decided to change their economic policy and opened its economy by deregulation. Because of liberalisation of the economies in most countries, tremendous amounts of capital started to move across national boundaries searching for investment opportunities. A large number of industries is emerging in these countries. Liberalisation of trade results in an open market situation brings more players and competitors to the market. The open economy and liberalised world economy can be considered as the key driving forces in the growth of international trade. If there is an economic growth in a country, it creates customers to the international market and it also creates customer needs to transport cargo. This then helps exporters to export their goods to other countries and importers around the world have an opportunity to import their cargo from other markets. The company, who engages in both imports and exports, can get this opportunity on to their side. Generally economic development and transportation are parallel in any country and especially sea transport makes a considerable contribution. The liberalisation of the economy in Sri Lanka means great potential for the liner companies. From the economic point of view, government is the responsible body for the economy of the country, which manages the country politically and intervenes in the economic activities.

As far as CSCL is concerned, it is more or less in a position to provide transport services to its customers, taking this economic advantage.

2.5 CARGO MOVEMENT

The economy of Sri Lanka is highly dependent on export earnings and the import of essential items. Due to the introduction of liberalised trade policies, the level of

economic activities has been influenced by the high volume of import cargo. The performance of import/ export trade leads to an improvement in the shipping sectors of the island. A significant increase can be seen in containerised cargo during 1989-1995. And most of the exports and imports were in containers rather than break bulk cargo. CSCL, being mainly involved in liner shipping, was a major player.
The following data show the performance of the trade during that period.

Table 5- Cargo movements during 1989 - 1994

Exports M/T	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**
Liner cargo (A)	1072172	1193959	1223070	1127792	1233797	1432998
Bulk cargo	295529	312819	365034	236400	372521	388759
Containerised (B)	760637	821410	844183	886784	1030825	1193184
B/A %	70.94	68.79	69.02	78.63	83.54	83.26
Imports M/T	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**
Liner cargo (C)	2574057	2813401	2808064	2966037	3435446	3575503
Bulk cargo	2996386	3153141	3226787	3581779	3922472	4204562
Containerised (D)	761200	933381	972939	1175772	1399872	1627502
D/C %	20.57	33.17	34.64	39.64	40.75	45.52

(Source- Sri Lanka Port Authority)

Table 6- Major Exports and Imports in 1994 (1000 M/T)

Exports	**Volume**	**Imports**	**Volume**
Tea	264	Food stuffs	770
Rubber	70	Wheat	864
Desiccated coconut	48	Fertiliser	438
Naptha	97	Cement	638
Wheat bran	201	Crude oil	1857
Others	1042	Others	3225

Due to the nature of the cargo, it is understood that the majority of export cargo was transported in containers while the majority of import cargo was transported as break bulk. According to the nature of the cargo, the way of transport (container/bulk) and the transport areas are different.

In 1994, the major import and export countries by volume were:

Export	**Import**
South Korea	Japan
Japan	India
Singapore	China
Taiwan	USA
Indonesia	UK

The distribution pattern of exports and imports shows that South Korea, Japan and India were the major trading partners in 1994.

For the shippers, the switch from break bulk to containerisation involves a good deal of inconvenience and the type of facilities required in a container terminal are very different from those of a traditional general cargo terminal.

Table 7- The Structure and the Growth of Exports from Sri Lanka (1995/1996/1997)

Traditional and Non Traditional Exports	1995 (In frt.)	1996 (In frt.)	% growth/ reduction	1997 (In frt.)	% growth/ reduction
Tea	773963	831950	7.5%	931905	12.01%
Rubber	74141	78527	5.92%	69979	-10.88%
Desiccated coconut	69930	62542	-10.56%	64840	3.67%
Fibre	100302	78829	-21.41%	82117	4.17%
Garments	581557	552507	-5.0%	647437	17.18%
Fresh Coconut	16913	13583	-19.69%	15356	13.05%
Total	2671714	2738607	2.5%	3102047	13.30%

The total sea borne exports (In freight)	**1996**	**1997**	**% growth/reduction**

Total	3175972	3461204	+8.98%

(Source- Central Freight Bureau, 1997)

The total sea borne exports of principal commodities increased during 1996 and 1997 and the major commodities like tea, rubber and coconut have continuously contributed to the export trade during the period 1994-1997. However, except for these commodities, garments also became a major commodity during that time. This is because of the government's liberalisation policy along with the government's decision to open garment factories with the collaboration of other governments to solve the unemployment problem in the country. This was a real solution for unemployment and exports also increased rapidly during that time. So it is understood that there are cargoes for exports in the country and also that a majority of these are containerised. CSCL should have an opportunity to cater to these cargoes because the corporation is involved in container shipping.

According to the current statistics, the movement of cargo for the month of May 1998 increased by 10.42% in comparison to the same period for the previous year.

Table 8- The Beakdown of the Commodity Movement for May 1997/1998

Commodity	May 1997 (frt.)	No. of TEUS	May 1998 (frt.)	No of TEUS	%
Tea	75685	2859	77698	2938	2.66
Rubber	6760	350	6117	319	-9.51
Desiccated coconut	6454	530	4285	344	-33.61
Garments	47367	1926	62424	2518	31.79
Fibre	6004	383	7401	430	23.12
Cinnamon Oil	642	84	511	64	-20.41
Coconut Oil	271	16	132	08	-51.29
Plumbago	423	21	486	27	14.89
Charcoal	433	27	207	12	-52.19
Sundries	97675	4573	107635	4887	10.20
Total	241675	10775	266896	11547	10.42

(Source- CFB news letters)

Commodities like tea, garments, fibre, plumbago and sundry items recorded increased in 1998 while the movement of rubber, desiccated coconut, cinnamon, coconut oil and charcoal recorded decreased in the same period. The cargo movement changes as time passes because it follows customer needs. The company who is involved in shipping, needs to identify customer needs and try to adjust according to that. As per the given statistics, it is clear, that there is a good market for garments. The exporters who export garments prefer to use hangertainers but the corporation does not have enough hangertainers to satisfy their needs. So the corporation needs to adjust its container fleet according to the current environment, otherwise the loss of market share cannot be stopped.

2.6 MARKET SHARE

The government supports the shipping industry in various ways. Cargo reservation and preferences are the most common ways. The fleets of some countries, especially developing countries, are unable to compete for cargoes in the international freight market. So cargo reservation is used in these countries. In the cargo reservation, the government reserves a certain portion of exports and imports for the national carrier. The UNCTAD Code of Conduct for Liner Conferences, in force since 1983, suggested the cargo sharing principle by giving 20% of the trade to the third countries, with 40% reserved for the exporter and another 40% for the importer. Cargo sharing can be considered as a measure of limiting competition in the freight market, and can also be considered as a guarantee for the automatic supply of cargo, which leads to a demand for the national carrier.
In cargo preference, the government intervenes and allocates the cargo, giving first priority to the national carrier.

The introduction of an open economic policy and liberalisation of the shipping industry, had a negative impact on the national carrier. Due to the restriction of the preferential treatment to the line, and also due to the emergence of severe competition, CSCL lost its market share. Vessel operations on the main lines turned out to be non-economical due to the poor loading factor of the vessels.

Table 9- CSCL Market Share (in%) for the Period of 1993-1998

West bound	1993	1994	1995	1996	1997	1998
Karachi	21.03	15.64	19.62	11.0	2.2	-
Bombay	14.59	8.35	10.83	6.0	2.4	.5
Colombo	15.37	22.15	8.95	6.9	3.8	3.7
Cochin	3.38	7.32	1.5	.25	.1	-
Tuticorin	36.31	32.11	21.41	9.4	1.0	-
Madras	6.7	2.08	2.6	1.7	1.2	-
Calcutta	12.47	5.72	6.46	2.8	.7	-

East bound	1993	1994	1995	1996	1997	1998
Felixstowe	18.02	22.46	20.02	7.52	3.2	3.0
N. continent	10.66	15.11	18.38	5.5	1.8	1.5
Scandinavia	9.47	9.25	15.69	5.0	1.7	.1

(Source: Authors Compilation)

This table is based on the total trade in TEU for the selected ports and the number of containers carried by CSCL during 1993-1998 for the same ports.

It shows significant loss of market share during the above period, and at the same time the corporation lost its position in the industry. During the past years, CSCL has experienced many changes, but every effort gave negative impacts to the corporation.

A company can increase its market share either by differentiation or cost leadership. What the CSCL tried in the past was both. A company should only follow one generic strategy, either cost leadership or differentiation, and any company which tries to follow both at the same time will be stuck in the middle (M. Porter, p.41). CSCL invested money in marketing and at the same time also undercut the freight rates. Now the corporation has become stuck in the middle.

The corporation has a very low market share compared to the other lines on every route, and it is loosing more and more rapidly. When it started to lose its market share, it also started to lose its reputation. Thus, it needs to increase its market share, but getting back the reputation is not so easy. CSCL is the national carrier which needs the government's support to get the company back to the previous position in the industry. In order to foster the national line, the government has provided assistance in the past by giving preferences to CSCL through the Central Freight Bureau (CFB) in the export trade, and also by directing that all state Departments and corporations use CSCL vessels for their imports. Now, there is no preference through CFB, but there is a rule, that all government departments and corporations should carry their cargo through CSCL. However, this does not imply that all government cargo is carried by CSCL. Most of them try to move from CSCL to other lines. So it is very important to understand, what weaknesses the company has and what it does not have to fulfil their requirements. The question for the corporation is, how to improve its market share and the loading factor in the current situation.

Chapter 3

3. FACTORS INFLUENCING INTERNATIONAL SHIPPING TRADE.

3.1 CONFERENCES IN LINER SHIPPING

Shipping is a suitable area of co-operation in international trade. For a country like Sri Lanka, which has sea around the country, linking the various parts of the nation is essential. It is economic to combine local shipping activities with international trade.

The conference system was started over a century ago and has been attacked strongly in developing countries, because it has imposed high freight rates on exports and imports in developing countries. This situation leads to the goods exported from developing countries having a high transport cost, which makes it difficult to compete with cheaper products coming from developed countries. The role of liner conferences and how they impact on the trade and also on the Ceylon Shipping Corporation are discussed below.

A liner conference is an organisation, which includes shipowners as members, who provide the shipping service on a given route with agreed conditions. The first conference was formed in 1875, the Calcutta conference, which fixed equal rates from each of the ports. The conference system spread very fast to other trades and in 1939 there were 21 conferences in the Far Eastern trade to and from Europe. Today there are about 300 conferences worldwide operating under the same practice and philosophy.

There are two types of conferences in the shipping industry; the open and closed conference. In a closed conference, the membership is restrictive and freight rates, market share and routes are fixed for each member in the conference. In a closed conference, the members cannot change their carrying capacity freely, but in an

open conference system they are free to do so. The tariffs are fixed by the open conference and there are no restrictions regarding the membership.

One of the main objectives of these conferences is to restrict competition between members and protect them from outside competition. These can be considered as semi-monopolistic associations, which control prices, and limit entry into the trade. Some conference agreements have regulations for sailings, for ports of call and for the pooling of net earnings. These conferences establish common freight tariffs for the members and help them to give quality and efficient services to their customers.

There are pooling agreements in some conferences, which are based on the net or gross earnings in the trade, and the members receive an agreed percentage of the pool. Ship owners bear all their operating and investments costs under the gross earnings arrangement. In this case the shipowners pool all gross revenue, but in the net earning arrangement, they pool only their net earnings. The main objective of these arrangements is to limit the competition and to guarantee a certain share in the trade. The shipowners like to establish an agreed tariff because it enables competition in quality of service. The liner conferences are formed to meet trade requirements, to avoid competition among members and to maintain tariffs in a stable condition.

Conferences take the following measures to protect themselves against outside competition.

- Loyalty rebates to secure a stable total demand.
- Membership restrictions.
- Market sharing arrangements.

There are some advantages and disadvantages in the conference system. Avoidance of wasteful competition can be considered as a main advantage. There is an assurance that the members have a good chance of realising a profit, and also, there are no rate wars among the members, because the freight rates are decided by the conference. Stability of freight rates helps manufacturers and merchants for future contracts, which leads to reduction of their risk and uncertainty in the trade.

Some conferences arrange regular and frequent sailings for their members, which enable them to increase the loading factors of their vessels. This also helps shippers to plan their supplies on a frequent and regular basis to the international market. The conference system applies equal rates to all shippers whether they are large or small. Economies of service can be considered as an advantage for shipowners to concentrate on providing a faster and better service. From the shipper's point of view, he cannot use his bargaining power to demand lower rates, even though he is a large shipper.

In a liner conference, a regular service is provided on a given route, whether the vessels are full or not, and vessels should sail on scheduled dates. But in the conference system, the members have some assurance for a certain share, because the 40/40/20 UNCTAD liner conference code reserves certain volumes of the trade for the member lines. It also reserves volumes of cargo for the national fleet and which has been opposed by western countries, because they believe this is another kind of protectionism. Protectionism can be considered as a bad thing for the whole shipping industry.

The low profitability in liner shipping is not totally a result of low freight rates but also of low efficiency. Low rates can be considered as a key factor, which stimulates trade, and low rates apply to low value cargoes. However, liner conferences still maintain comprehensive freight rates, and focus on customers and respond to market requirements.

The following factors are considered for setting freight rates.

- Value of the goods.
- Weight / measure ratio
- Nature of the cargo
- Claim record
- Ports served and their nature
- Quantities moving to a particular area
- Competitive factors
- Turn around facilities

CSCL is a member of the following freight conferences.

1. India- Pakistan- Bangladesh- Ceylon European Conference (IPBCC)

Areas

(a) Eastbound from the United Kingdom of Great Britain and Northern Ireland, and the Republic of Ireland, Norway, Sweden, Finland, Denmark, Poland, Germany, Holland, Belgium, France, Portugal, Spain, Italy and Croatia/Yugoslavia to ports in India, Pakistan, Bangladesh and Sri Lanka.

(b) Westbound from ports in India, Pakistan, Bangladesh and Sri Lanka to the United Kingdom of Great Britain and Northern Ireland and the Republic of Ireland, Norway, Sweden, Finland, Denmark, Poland, Germany, Holland, Belgium, France, Portugal, Spain, Italy and Croatia/ Yugoslavia.

Other members

Bangladesh Shipping Corporation
Compagnie Generale Maritime NV
Compagnie Maritime d`Affretement
Compagnie Maritime Belge SA
Contship Containerlines LTD
DSR/Senator Lines GmbH
Ellerman (Andrew Weir Shipping)
Hapag-Lloyd AG
Himalaya Express
Maersk Line
Pakistan National Shipping Corporation LTD
P&O Nedlloyd BV
Sea-Land service Inc.
Shipping Corporation of India
United Arab Shipping Co. SAG
Yang Ming Line
Zim Israel Navigation

2. The Sri Lanka/ Middle East conference
3. Ceylon / Australia conference

4. Ceylon/ Straits / Hong Kong / Japan agreement
(Source: Croner`s World Directory of Freight Conference, 1994, 1999)

In 1997, the conference lines moved 166,050 TEU in westbound traffic and 108,328 TEU east bound (Conference statistics 1998). The question for CSCL is whether the liner conferences are beneficial or harmful for the corporation. This is really a question for the whole seaborne trade. In some areas of the world, the role of shipping conferences is diminishing. CSCL mainly operates its vessels on the Asia/ Europe and Europe / Asia route, so being a member of the IPBC conference must be very important. The IPBC conference decides freight rates commodity wise on the Europe / South Asia route for all the members of the conference. But any conference cannot rule the freight market and rates are always under pressure. In actual fact, the freight rates are determined by the market, but sometimes different rates are applied by different members within the conference. This is a vast problem for the corporation. The freight rates are agreed by the members at the meetings but some of the members undercut and apply different rates to their customers. This is not the idea of the liner conference system and what it agreed at the meetings, should be applied. Everybody knows what is happening but it is difficult to prove in such an environment.

Shipping is a very capital intensive industry and the big alliances are much more globally orientated and looking beyond the regional trade. They do not need the conference system, because these large lines are multinational. Sri Lanka is a small country compared to other members in the conference but if the corporation cannot obtain its objectives being a member of the conference, what is the next step?

3.2 COMPETITION

In theory, there is no price competition between the members of a liner shipping conference. The conference system limits the competition from non-conference lines. Theoretically this may be true, but not practically. The objective here is to discuss five competitive factors and find out how they define the competition. Is it focusing on price or quality or what else? Is it related to customer needs?

Competition between liner operators is very strong and profits earned by liner companies are very low compared to other industries. The market for liner shipping is changing rapidly. So the companies who are engaged in the liner business need to adapt and respond to the new market demands.

3.2.1 Five competitive forces **(M. Porter, p.4-p.28)**

The following are the competitive forces, which affect the profitability of the industry.

a. Rivalry between existing competitors

This depends on market growth, overcapacity, product differences and the level of fixed costs. If the individual shipping line can obtain a cost advantage over its competitors or fellow conference members, it can offer low freight rates. The main element to obtain competitive advantage is low cost. Megacarriers who enjoy economies of scale can give lower prices.

The idea behind the formation of a shipping alliance is to reduce the cost among the parties. It also improves their service quality and capacity utilisation. So the overall aim of an alliance is to increase revenue and reduce cost. The liner operators formed alliances mainly on the transpacific, Asia- Europe and transatlantic trades, basically for slot sharing. The competition on these routes has increased because of these alliances and independent carriers. Major carriers like P & O and Nedlloyd, as well as NOL and APL, have merged during the last couple of years.

After introducing the liberalisation policy in shipping, many large shipping lines started to call at the Port of Colombo. Maersk, NYK, DSR, NOL, P&O, Nedlloyd, Evergreen and Hanjin shipping line are well-established mega carriers who commenced calling at Colombo. They have started an excellent agency network in the island with exclusive marketing activities. They have offered lower freight rates to the local customers, rebates and sometimes they prefer to waive terminal handling charges. As a result, major customers have left CSCL for the competitors, taking advantage of this price reduction. The corporation is not making money in its liner service at the present time and volumes have fallen rapidly to a bottom level

since the cargo has gone to other lines who are far more prepared to cut freight rates.

Competition in the westbound trade is very severe, not only from the conference carriers but also from non-conference competitors, who are very aggressive in the Far East / Colombo trade. Because of these outside competitors, the average freight rate has declined by almost 15%.

Big carriers, who are looking for expansion, prefer to strengthen themselves by partnership arrangements. K line has started a partnership arrangement with Yangming and COSCO. They currently provide three sailings per week between North Europe and Asia (Lloyd's Shipping Economics, p. 13, March 1999). By joining the alliance, OOCL is also offering six sailings per week on the same route (International Container Review, 1998). This is really a big threat for small carriers like CSCL, which usually offer one sailing per week, because CSCL`s fleet is not as big as its competitors.

Maersk Line is the world's biggest container line, operating about 120 vessels with a capacity of 340,000 TEU. They believe that it is important to have a sufficient size of fleet in order to achieve the benefits of economies of scale. This is true for all carriers who are ordering bigger and bigger ships. Large ships in excess of 6,000 TEU are already in operation on the Asia / Europe trade. This is a situation where such big ships can sweep up all the cargo if they call even only once per week.

The top 20 carriers, who are the major players in the container business, have built up their service network to achieve the economies of scale using large ships.

Table 10- Top 20 carriers according to liftings (in TEUS) for 1997 and forecasts for 1998

	1997	**1998**
Cosco	3250000	3500000
Evergreen /Unigory	3080000	3488000
Sea-Land Service	3055159	3200000
Maersk	2900000	3000000

P&O Nedlloyd	2320000	2500000
APL	1002280	2100000
Hanjin Shipping	1680000	2000000
NYK Line	1660000	1670000
OOCL	1500000	1600000
Mediterranean Shipping Co.	1400000	1500000
Mitsui OSK Lines	1350000	1410000
Hyundai Merchant Marine	1332925	1500000
Hapag-Lloyd	1100000	1300000
Yangming Marine Transport Corp.	1062000	1170000
CMA-CGM	1000030	1100000
Zim Israel Navigation	973388	1050000
K Line	850000	950000
CP Ships	670000	1100000
Safmarine & CBBT Lines	600000	675000
USAC	429304	475000

(Source: Containerisation International, November 1998f)

b. Threat of new entrants

This depends mainly on the economies of scale and cost advantage of the existing competitors. However, the liner conference system always limits and acts as a barrier to entry. Currently the mega carriers and alliances are benefiting from the economies of scale and cost advantage, but not the small lines or individual shipping companies. The one who wishes to enter the industry, also wishes to get the above benefits like the existing competitors. It is not a significant threat to big companies, but it can be considered as a big threat to small companies. CSCL is facing a difficult situation because of this severe competition and it is getting worse due to these new entrants.

c. Bargaining power of suppliers

There are many supply parties in the shipping industry.

- Shipbuilders, spare parts suppliers
- Bunker suppliers and stores
- Port services
- Cargo handling contractors
- Canal authorities
- Feeder services
- Inland services

- Insurance companies
- Repair yards

Bargaining power depends on various factors due to the nature of the supply. Basically it depends on the power of monopoly in the supplier industry. The suppliers who have large quantities can negotiate with the carrier to get better terms. Being a mega carrier or member of an alliance, shipping companies can use their power over the bargaining power of the suppliers. They can turn the disadvantage to an advantage.

Bunkers are very important supplies to the shipping industry and due to its importance, suppliers can use their bargaining power. Fuel prices are different in different ports (sometimes this difference is big, but sometimes only very little). The shipping companies schedule their services on a particular route and they can only use a limited number of ports within their route. Sometimes they can only compare the prices between limited ports and they have to buy fuel from those ports, whether it is cheap or not. This is a situation where suppliers can use their bargaining power.

Another reason is the cost of switching from one supplier to another. Shipping companies use the Suez Canal to go from south Asia to Europe because it is the cheapest and the shortest way. If any company wishes to skip this way, it has to spend more than before for bunkers because of the longer voyage duration. So these lines have to rely on the Suez Canal. This is really a major expense costing around USD 100,000 for a one way passage. So, in this case there is no choice to avoid the bargaining power of the suppliers. But the company which has a big fleet passes this canal several times per week, and can negotiate with the canal authority. So, everywhere there is a trend to remove the small companies out of the industry.

d. Bargaining power of buyers

Shippers are the most important people in the shipping industry, and the bargaining power of them highly depends on the cargo volume. Shippers can demand low freight rates and good quality. There is not much space for the bargaining power, if

the company can offer reasonable prices and quality services. However in particular the small companies are not in a position to forget about big shippers who contribute highly to their revenue. Normally some shipping companies offer much lower rates to their regular customers. This can be considered as a marketing tool to attract and retain them. Some shipping companies offer lower rates to big shippers because they do not want to lose them, even though the companies cannot reach their profit margin. Depending on how powerful the shippers are, they can use their power to negotiate with the shipping line. The same applies for the other side as well. Depending on how powerful the shipping companies are, they can offer lower rates to attract customers.

e. Threat of substitutes

Rail, road, air and pipelines can be described as substitutes for sea transport. Comparatively, sea transport is the cheapest mode of transport while air transport is the fastest mode. Road transport can be considered as the most flexible. So there are some advantages as well as disadvantages in all modes of transport. The biggest threat to sea transport is air transport. It usually carries high value cargo and also perishable goods. However, the customers who are looking to get the cost advantage may select sea transport. There is no special way to react to this threat but there is a possibility to improve the whole shipping industry by using modern technology, like Electronic Data Interchange (EDI).

Competition is good for the shipping industry since it not only focuses on the price. Customers are demanding value, and to provide value shipping companies have to consider the cost, quality of service, frequency, transit time, voyage duration, range of port calls and feeder arrangements. Nowadays, many carriers offer sophisticated door-to -door services. So the best way to increase revenue is to upgrade the service quality to satisfy customers. However most of the customers in developing countries focus on price rather than other factors. The most efficient operators become price leaders in this situation and the small companies move out of the business. It is difficult to survive in the present competitive environment, so there is a need to adopt new strategies appropriate for the current market conditions. The

ones who can supply value for lower rates can be considered successful players in the shipping market.

Being biggest (8000 TEU) in capacity is not always a good solution, even though it minimises the operational unit cost. However it is not possible to do it all the time, when there is insufficient cargo.

One of the major routes is between Asia and Europe has increasingly been facing competition by outsiders for several years. CSCL, being a small company, operating its fleet between these two markets, needs to identify customer needs and try to adapt to the current situation.

3.3 JOINT VENTURE / SLOT EXCHANGE

Liner shipping, especially with container vessels, requires huge capital investment and know-how. Joint ventures successfully promote liner shipping by combining skills and strengths. The concept of a joint venture is to improve co-operation in the maritime field. Both developing and developed countries are getting economic and commercial benefits from the joint venture concept. Developing countries are mainly looking for finance, as well as managerial and technical expertise. However developed countries are primarily seeking employment of their vessels, pursuing new markets and tax benefits. A joint venture is an important element in the maritime field because it transfers maritime know-how from a stronger partner to a weaker partner, both hardware and software.

The oldest maritime joint venture in a developing country is Naviera Humboldt of Van Ommeren in 1970 (M. J. Muller, p.64). A joint venture was the most efficient way of allocating resources in shipping during that time. But that concept has changed to alliances and mergers. Those are also efficient and useful methods, but they are mainly co-operation partnerships between large carriers.

If one company can do something better than an other company and the second company can also do some other thing better than the first company, they can

combine their services to create a good product. Each company needs to analyse their SWOT (**S**trengths, **W**eaknesses, **O**pportunities and **T**hreats) before combining and that leads both parties to a better combination.

This paper does not focus deeply on maritime joint ventures. It focuses on the joint ventures that CSCL formed in the 90`s. A joint operation was started with the Shipping Corporation of India (SCI) on the Asia / Europe liner route. Before that time CSCL had joint operations with CMA and ZIM Line on the same route. However all these joint operations had not given the benefit that was expected, since CSCL considered only slot sharing between the partners. The real idea behind the joint venture concept is not only slot sharing as it could also be useful in other ways of co-operation. Under the agreement between CSCL and other parties, they allocated a fixed number of slots to each party in their vessels. This idea largely worked between SCI and CSCL. Both companies agreed to allocate a fixed number of slots between them, both eastbound and westbound, depending upon their demand. However this arrangement was only for a limited period and CSCL decided to charter out its fleet on that route since it did not give as good utilisation of vessel capacity as it expected.

At the time that CSCL started joint its operation with SCI, it had 5 time charted vessels operating on the South Asia / Europe route. First, the two companies agreed a slot exchange between the two fleets on the same route. It gave CSCL customers better service frequency for the ports of call, instead of 11 days frequency. After a certain period of this joint operation, it was realised that there was no significant increase of revenue or decrease in operational costs. The vessels that the corporation used for the South Asia/ Europe service gave the same low profits as before. The management of CSCL decided to off-hire these chartered vessels rather than lose money. However the corporation still wanted to continue its South Asia / Europe service under the slot hire arrangements with SCI and ZIM line, as it did not want to lose its customers on that route.

Now CSCL is carrying its cargo on SCI vessels, which allocate a fixed number of slots to CSCL. The number of allocated slots from the beginning was large and the

corporation failed to supply cargo for that allocation because at that time it failed to properly identify its demand from each port. Even now, CSCL fails to earn profits on its liner route under the agreements it has with other companies. So it is necessary to analyse its SWOT, particularly on that route and start a joint venture to gain the benefit of being a successful partner.

3.4 FREIGHT STRUCTURE AND FREIGHT MARKET

This refers to the earning flow of the shipping industry. It should be stable but most of the time liner rates are not stable. Liner companies are suffering insufficient returns on their huge capital investment. These lower freight rates result in shipping companies having lower profits.

A liner conference, which is the controlling body, fixes freight rates and publishes these as tariffs. The members of the conference agree to offer the same rate for the same commodity to the same destination. However the rates of individual commodities on the same route do not move in parallel. The individual shipping lines respond strongly to competition and their rates fluctuate more than conference rates. Conference rates are also not as stable as they were in the beginning of the conference system.

Freight rates are dependent on supply and demand. The demand for shipping is affected by the elasticity of demand for the commodities carried. The competition between existing carriers, and also competition by the substitutes, has caused change in shipping demand.

Liner rates are based on the value of cargo, on the stowage factor and on the competitive environment. They are quoted on the weight of the cargo or the measurement of cargo, whichever gives the higher revenue.

Except for the basic rate, there are some additional charges levied by the lines, which will be discussed below briefly.

1. Terminal Handling charge (THC)

2. Container service charge
3. Heavy lift charge
4. Currency Adjustment Factor (CAF)
5. Bunker Adjustment Factor (BAF)
6. Port congestion surcharge

There is a common rate for General Purpose (GP) containers and there are some additional rates for the extra dimensions, open top or open side containers. In 1973, after the first world oil crisis, BAF was introduced because the fuel prices were subject to fluctuations and the carriers were not prepared to take the variation of fuel prices and adjust the bunker surcharge to the basic rate. In the late 1960`s, the CAF was introduced because the freight rates were related to currency fluctuations (Farthing (1997), p.118). There is an additional currency adjustment if the freight rates relate to floating currencies. But most of the time there is no currency adjustment factor since the freight rate is charged in USD. BAF and THC are common additional costs for many shippers, but not other surcharges. Quoting freight rates is complicated because it has to consider the type, size and value of the commodity and the destination, despite the fact that there are fixed basic rates. Sometimes different rates apply for different shippers, even though other factors are common for them. Some shipping companies offer all inclusive door-to-door service freight rates, without mentioning separate charges. It is a better solution to make the procedure simple and efficient. There is also a price competition among the conference members, and some members have secret contracts with their shippers. Under those circumstances, most of the liner shipping companies suffer due to a fall in freight rates. Liner operators experienced difficulties in most of the trades during the 90`s and the rates in the Trans Pacific East bound, Asia/Europe and Europe/Asia routes fell by 10% in 1996 (ISL Statistics).

The following table illustrates the average freight of major commodities to major destinations for 1989 - 1997. (In USD / 20`)

Table 11- Average Freight of Major Commodities to Major Destinations for 1989-1997 (in USD/20')

Destination	Commodity	1989	1990	1991	1992	1993	1994	1995	1996	1997
UK	Tea	1353	1417	1400	1050	950	900	800	700	571
	Rubber	1086	1138	1275	1000	950	900	800	700	550
	D/ coconut	1200	1254	1325	1000	1000	900	800	700	550
	Garments	1525	1593	1500	1100	1000	900	800	700	550
	Fibre	441	461	900	1000	950	900	800	650	771
North continent	Tea	1842	1541	1400	1050	950	900	800	700	621
	Rubber	1227	1281	1400	1000	950	900	800	700	600
	D/ coconut	1434	1254	1325	1000	1000	900	800	700	721
	Garments	1822	1891	1500	1100	1000	900	800	700	596
	Fibre	666	692	900	1000	950	900	800	650	550
USA	Tea	3060	3145	3280	3280	3280	3280	1700	2991	1451
	Garments	2350	2435	2570	2570	2570	2570	2570	1980	1601
Far East	Tea	1430	880	880	800	700	700	752	752	671
Middle East	Tea	1250	1100	2025	1200	900	900	900	900	825

(Source: CFB annual report 1997)

The Asian currency crisis hugely affected that situation because it depressed the imports to the Asian market and resulted in the lowering of prices to find return cargo. The currencies in Indonesia, Thailand, South Korea and Malaysia were highly devalued against the USD in 1997-1998 making their goods competitive in the US market. This also significantly affected the Sri Lankan export freight market.

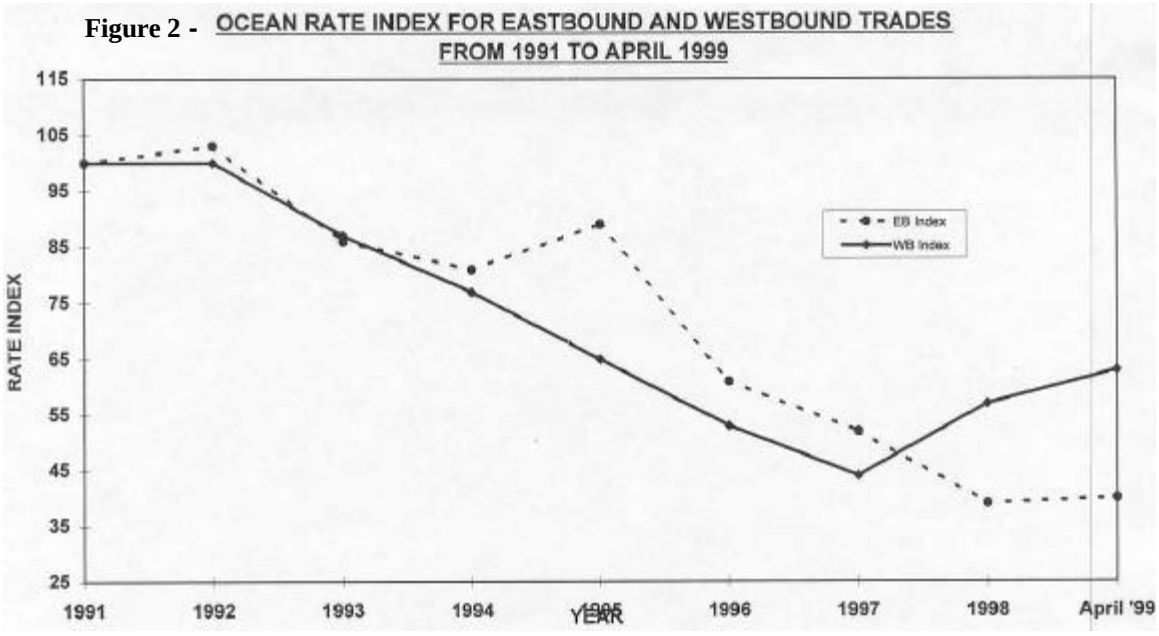
The above table does not imply that the freight rates for all commodities for all UK, USA, North Continent, Far East and Middle East destinations are the same. This gives only a general view of average freight rates for those areas. Again, it does not show all types of commodities to those areas. For instance, there are several types of fibre, like mattress, bristle ballots, machine twisted and hand twisted, and the freight difference between fibre mattress and hand twisted fibre is around USD 500 / 20`. The rates for the year 1997 are subject to terminal handling charges. i.e.USD

71/20´. Rates for the Far East are inclusive of 7.5 % CAF for the year 1995 and 1996 and inclusive of USD 50 / 20`BAF.

The difficult situation reflects on the past that lower value cargo is transported for very low freight rates in the Asian region. Most of the developing countries export low value cargo and import high value cargo, and high value cargo contributes more to the revenue of the shipping line. However the eastbound cargo movement is lower than the westbound. So high value cargo does not give any special contribution to Asian shipping lines.

The following graph shows the freight rate index for 1991 to 1999.

Figure 2 - OCEAN RATE INDEX FOR EASTBOUND AND WESTBOUND TRADES FROM 1991 TO APRIL 1999



(Source: Maersk Line, 1999)

The above graph shows the fallen freight rates during the period from 1991 to April 1999 for westbound and eastbound trades and eastbound rates are still declining. Comparatively, the average freight rates have fallen during that time. The reason for this is not only the Asian currency crisis, but also some other reasons. The containerised cargo increased by 12.1% and 10.9% in the Europe/ Asia and Asia/ Europe trades, even though there was a significant decrease in freight rates from

1995-1998 (Containerisation International, Various issues, 1996). This was affected by the changes in service structures. During that time alliances and mergers came into the picture, and mega carriers introduced larger ships, resulting in an increase of the tonnage. Over tonnaging is a situation that everybody suffers from and which has contributed to the fall in freight rates. But despite declining freight rates, the fleet is still expanding.

Under a freight rate restoration programme, the liner conferences decided to lift the rates by a very small percentage. Accordingly the Far East Freight Conference (FEFC) increased rates by $175/225 per 20'/40' container going eastbound routes with effect from May 1997 and $ by 175/350 per container going westbound routes with effect from July 1997 (Containerisation International, June 1997b). The IBPC also believes this is the right time to embark on a rate restoration programme. First, the minimum rate agreement between the members was set up, and the rates were raised by $100/20' and $150/40' on the eastbound and $75/20' and $125/40'on the westbound route. According to IPBC information, the rates out of Colombo have increased since 1998 since firstly the carriers are no longer prepared to carry cargo, which offers negative retention and secondly some carriers stopped calling at Colombo because of the cheap rates. The idea behind the rate increase is that the carriers focus on better retention on Far East cargo and will accept Colombo cargo only if it is comparable. This process is continuing and the aim is to increase rates again in the near future. It is too early to see the effect of that rate restoration. But if the conferences raise freight rates, then other lines are attracted into the trade. This is really a very complicated situation to analyse and nobody can predict the future trend with certainty. But, because of the declining trend in freight rates, rate restoration is necessary and important.

Chapter 4

4. COSTS

4.1 THE STRUCTURE OF THE COST ELEMENTS

The structure of the cost elements is very important for a shipping company as well as earning flow. The net profit of the company is determined by both costs and revenues. It is therefore necessary to analyse the cost structure, because cost is the name of the game today. Only large shipping companies and shipping alliances are earning profits, because they follow cost effective measures to overcome the current market situation. The fierce competition in liner shipping urges operators to look for cost reducing measures.

Cost can be divided as follows.

Fixed cost	-**Capital cost**	
	Interest	
	Repayment of capital	
Variable cost	**-Operating cost**	**-Voyage cost**
	Crew/manning	Fuel
	Stores/supplies	Port charges
	Repairs and maintenance	Cargo handling
	Insurance	Canal dues
	Surveys	
	Administration	

In this chapter, all fixed costs and variable costs will not be considered deeply. The chapter will concentrate on the cost elements, which affect the low profit on a voyage.

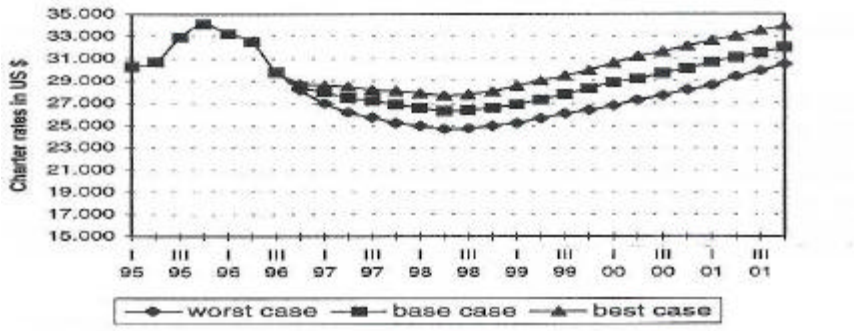
4.1.1 Capital cost

Capital costs are associated with the acquisition of vessels and vessels can be financed from a company's own funds or with borrowed money. Today there are many funding arrangements for ship acquisition. Bank loans and shipyard credits

are very popular today and leasing can be considered as the simplest way. Because of the funding point of view, the lessee does not need capital input and he is funded to 100% of the ship's value. The Leasing structure could be complex but from the operator's point of view, he does not have any contractual relation with the debt providers, which makes it simple for him. So this can be considered as a better solution for the shipping companies today. This is also an 'off balance' sheet finance and rentals are fully tax deductible (Motram, 1999). Many shipping companies use chartered vessels for a fixed period of time like 5 years or 10 years, because these companies are not financially strong enough to invest in new ships. Charter hire is a fixed cost for a voyage and the price is agreed as per the charter party agreement. Charter hire rates were around USD 12,000 per day for a 1200 TEU capacity vessel in 1997 and this was a large amount of money compared to the freight income during that time. If the company agrees with the shipowners as per the charter party agreement to charter-in its vessels for a fixed period, it has to pay the agreed charter hire for the total period of time. This is known as time charter.

In 1997 CSCL operated 5 time-chartered vessels on the South Asia/Europe route, and 2 of its own vessels were chartered-out. At the beginning the South Asia/Europe service gave considerable profits but later it gave negative results. Since the corporation was paying high charter rates but earning low freight revenue at that time and, decided to off-hire these vessels. Its two own vessels have given comparatively better results. One is used by the government for essential services and the other is chartered-out to another party. The following graph shows a rather low charter rate level during 1995-1998 and shows future increased rates for the container vessels. This trend will be better for the shipowners. It is very important to follow the market trend for charter rates before chartering in or out a vessel.

Figure 3 - Charter rates for container vessels of 3900 TEU



(Source: ISL)

4.1.2 Operating Costs

a. Manning cost

Manning cost is a large cost item for a shipping company varying from country to country. The Asian crews are cheaper compared to other regions and CSCL uses Sri Lankan crew for its own fleet. The following table illustrates the crew costs of different nationalities.

Table 12- Crew cost of different nationalities

	Master		2nd Officer		AB	
NATIONALITY	Tanker	Dry	Tanker	Dry	Tanker	Dry
Chinese	2,530	2,300	1,465	1,330	645	585
Croatian	6,000	5,600	2,300	2,150	1,100	1,025
Filipino	3,345	3,345	1,678	1,678	991	991
Indian	4,700	4,400	2,600	2,440	980	910
Polish	3,950	3,500	2,400	1,850	1,190	1,107
Portuguese	6,650	6,045	3,735	3,395	1,825	1,650
Russian	3,300	3,000	1,760	1,600	1,100	1,000
South American	N/A	N/A	1,900	1,900	700	700
Spanish	6,700	6,090	2,800	2,550	1,630	1,490
Sri Lankan	4,400	4,000	2,600	2,370	500	460
British	*£4600*	£4200	£2750	£2500	£1875	£1700

Typical wage costs- USD per month served (except where shown)

Includes basic wage, vacation and guaranteed/fixed overtime

British seafarers are shown in £

(Source: Precious Associates LTD)

There is a trend to decrease the crew size, due to higher crew costs and new technology. However it is a question from the safety point of view, how far it will be successful, by using the minimum number of crew.

b. Repairs and Maintenance (R&M)

Repairs and maintenance account for 10-15% of the total cost (Ignacy (1985), p.78). These costs include dry-docking, painting, annual repairs, surveys and current repairs. Experience shows that older ships cost more than new ships for repairs and maintenance. The following table gives an indication of the different R&M costs in USD per year. It shows that the R&M costs for container vessels are much higher than for bulk carriers or general cargo ships.

Table 13- Costs for repairs and maintenance

SHIP TYPE	SHIP SIZE	COST (1,000 USD)
Tankers	<10,000 dwt	164
	70-100,000 dwt	482
	>300,000 dwt	776
Dry bulk carriers	<10,000 dwt	134
	20-35,000	207
	100-150,000 dwt	286
General cargo ships	10-15,000 dwt	157
Container ships	2,000 teu	448
Reefer ships	350,000 cu.ft.	515

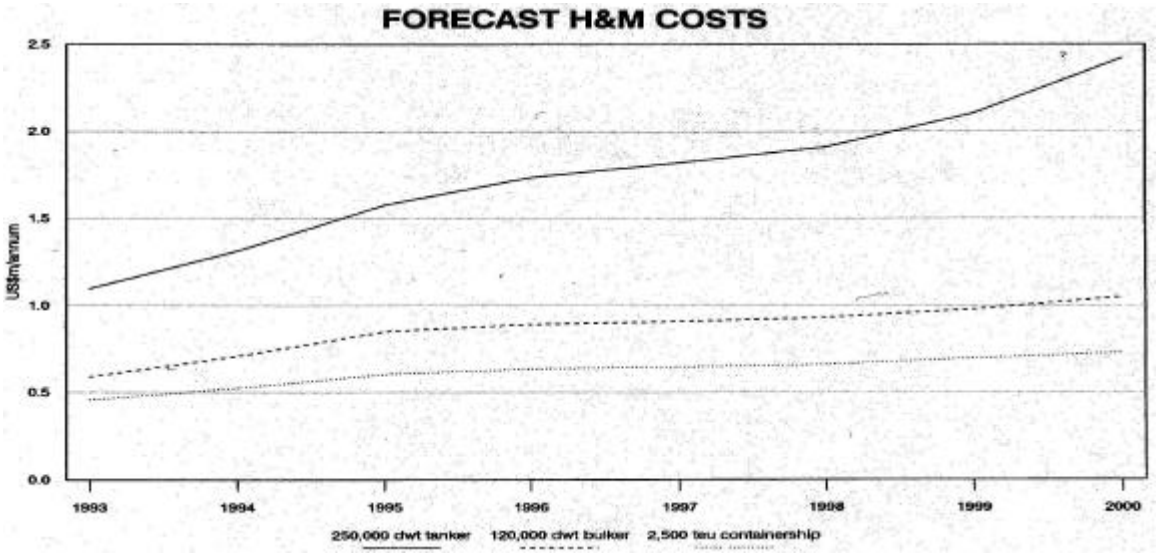
(Source: Drewery Shipping Consultants)

c. Insurance cost

Hull and Machinery insurance covers the physical damage or loss of hull or machinery, and the P&I cover the third party liabilities. The premium is determined by the size, type, age and the past claim record of the vessels.

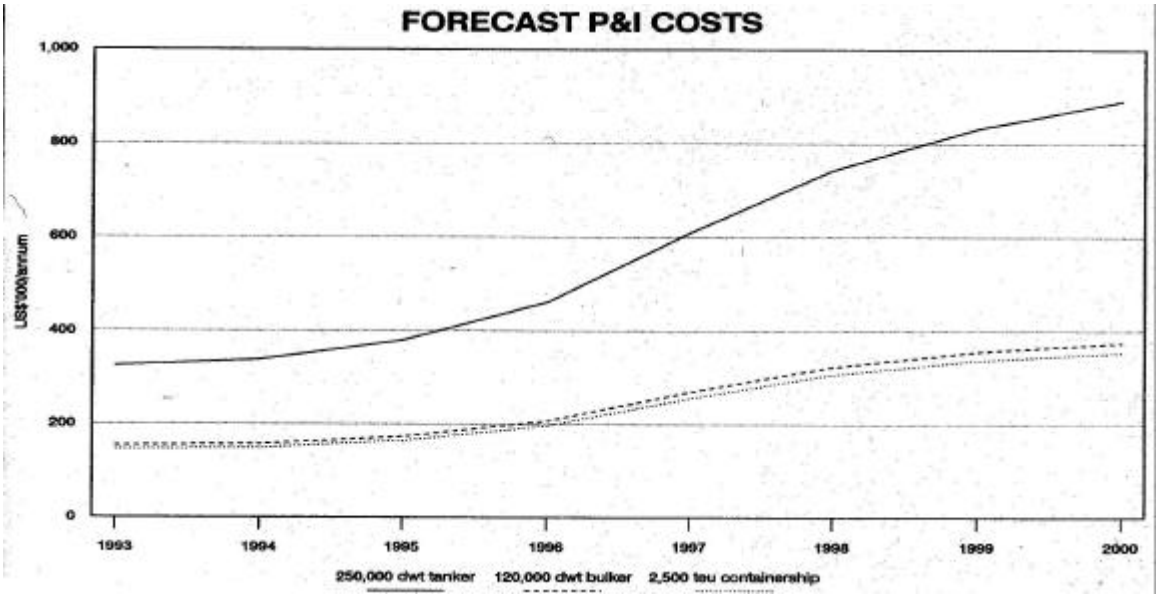
The following graphs illustrate the H&M and P&I insurance costs from 1993 and give forecasts for year 2000. There is a trend to increase both H&M and P&I costs in the future. However their predictions are not so accurate, because under the current H&M market, the premiums are going to be very competitive and low. Even though the increasing rate for container ships is lower than for tankers or bulk carriers, it is very important for the container shipping companies.

Figure 4



(Source: Drewery, The ships costs in the 1990`s)

Figure 5



(Source: Drewery, The ships costs in the 1990`s)

4.1.3 Voyage cost

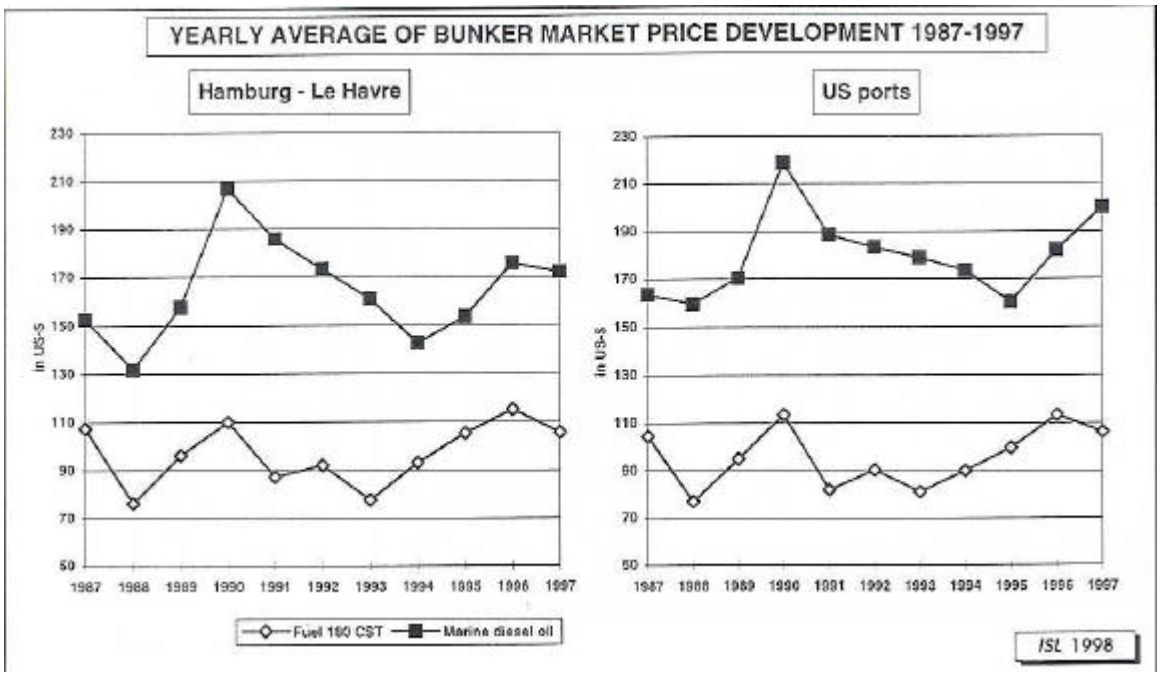
a. Fuel cost

Marine fuel can be categorised into three grades, i.e. MDO (Marine Diesel Oil), IFO (Intermediate Fuel Oil), HFO (Heavy Fuel Oil) and is referred to as "bunker" in shipping. Bunker prices depend on the world's oil price and fluctuate against the

market demand. They also vary from place to place. Rotterdam, Singapore, Houston, Los Angeles, Genoa and Fujairah can be considered as the world's busiest bunkering ports. Liner shipping companies that sail on a particular route are limited to a number of bunkering options. The bunker costs account for 12-25% of the total cost and depend on the fuel consumption (Ignacy (1985), p.78).

The following graph shows the bunker market price development during 1987-1997 in Hamburg and US ports. Both areas have the same trend during that period for both heavy fuel oil and marine diesel.

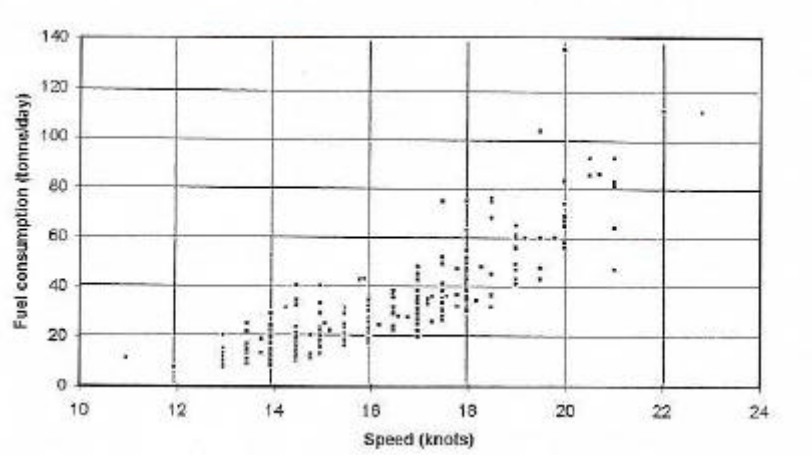
Figure 6-Bunker Market Price development 1987-1997



(Source: ISL)

The Fuel consumption is determined by various factors, such as size of the ship, ship's hull, the speed, the laden condition, type and the capacity of the main engine, type and quality of the fuel and the weather conditions. The relationship between speed and fuel consumption is greater than for other factors. The following diagram shows the above relationship for container ships. The fuel consumption increases as the speed increases and more vessels sail at an average speed (14-18 knots) to keep low fuel consumption levels.

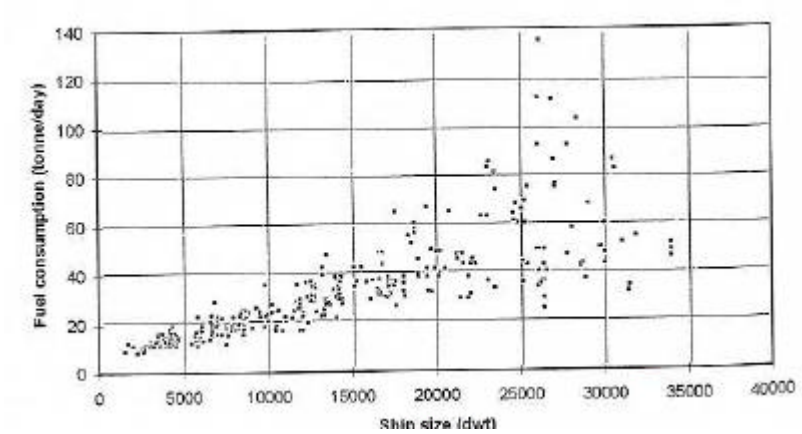
Figure 7- The relationship between the speed and the fuel consumption



(Source: Shipping, p.222, 1997)

The following diagram shows the relationship between vessel size and fuel consumption. It proves that larger ships need more fuel than smaller ships with most ships lying between 2500-15000 dwt capacity.

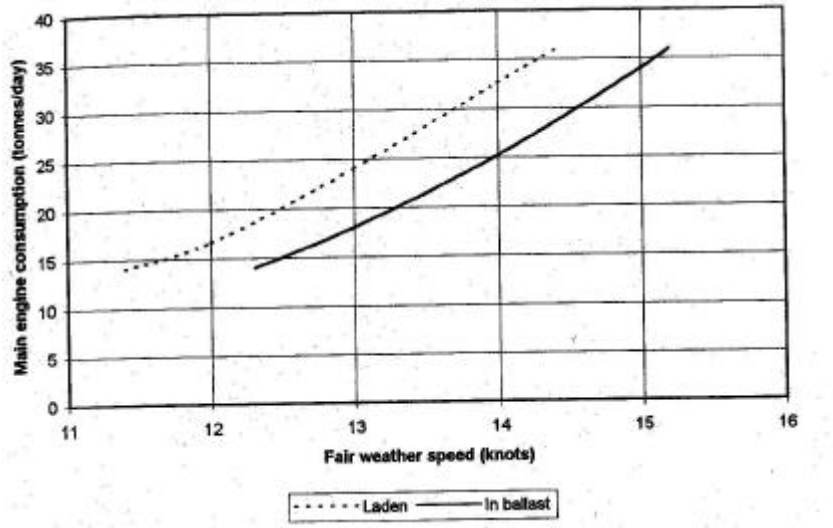
Figure 8- The relation between the vessel size and the fuel consumption



(Source: Shipping, p.220, 1997)

The following graph illustrates the relationship between main engine fuel consumption and speed. It shows that the main engine fuel consumption is higher in laden vessels than in ballast.

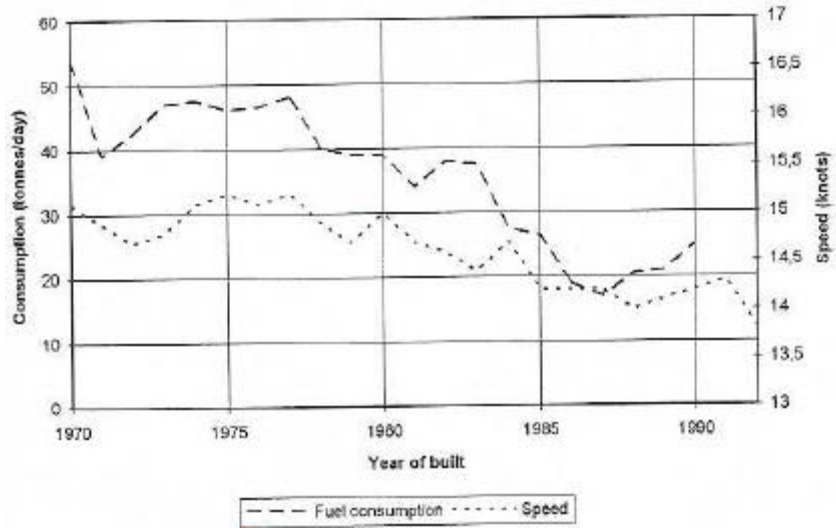
Figure 9- The relation between the main engine fuel consumption and speed



(Source: shipping, p.223, 1997)

The development of the average service speed and fuel consumption is given below. It shows that the fuel consumption for new vessels is lower than for older ones, and that both fuel consumption and speed have almost the same pattern according to the age of the ship.

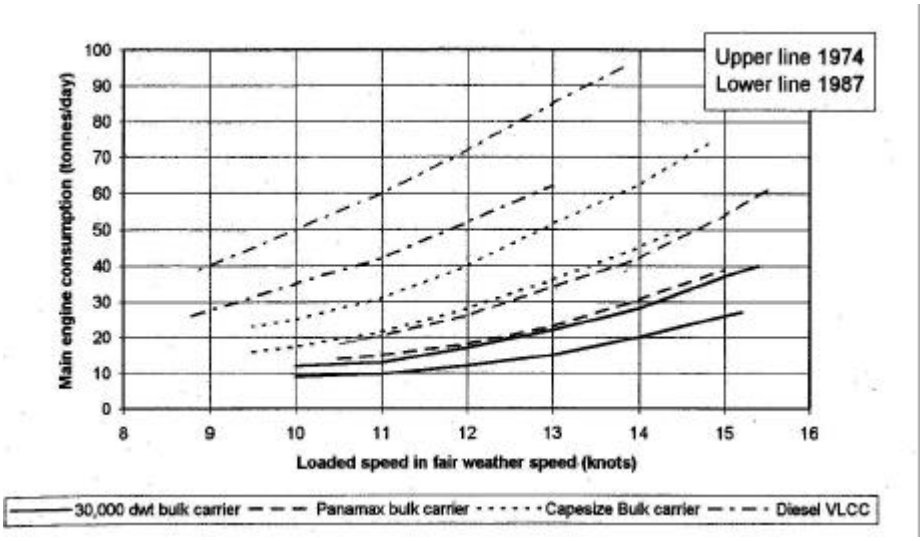
Figure 10- The development of the average service speed and fuel consumption



(Source: Shipping, p.223, 1997)

The following graph shows the speed and fuel consumption development of various ship types.

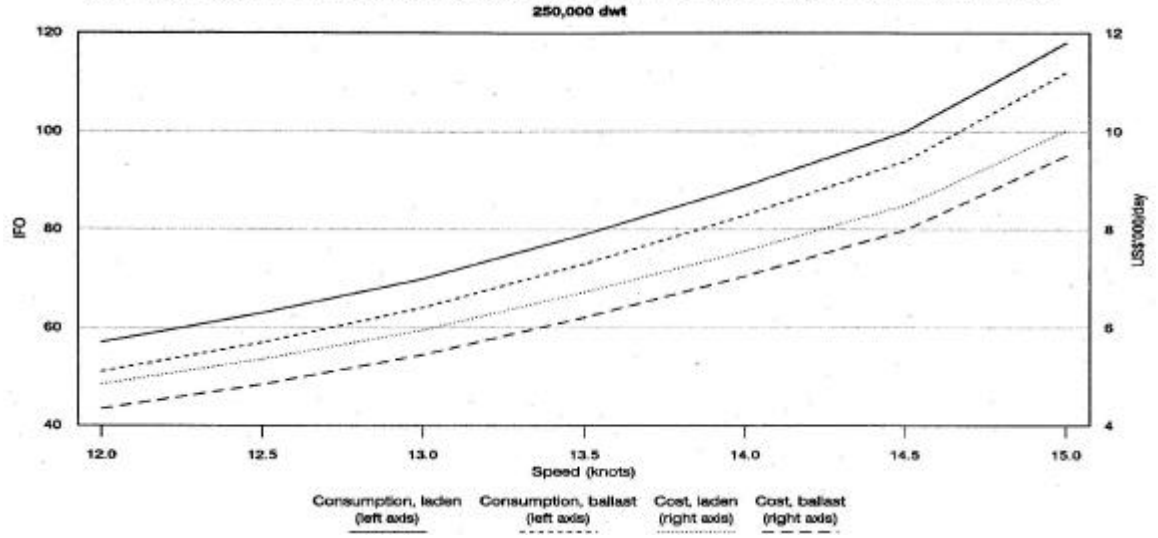
Figure 11- The speed and fuel consumption development of various ship types



(Source: shipping, p.225, 1997)

The bunker costs vary with the vessel performance as illustrated by the following diagram. It proves that fuel consumption and cost for laden ships are higher than in ballast, and increase with the speed.

Figure 12 - VARIATION IN BUNKER COSTS WITH VESSEL PERFORMANCE*



(Source: Drewry shipping consultants)

b. Port charges

Port costs is another important cost item of the voyage cost. It includes harbour cost, pilotage, tugboats and mooring crew. Port dues vary according to the time spent in port and also from port to port.

The port costs for container vessels in different ports are given below. There is a significant cost difference between some ports like Fortaleza and Buenos Aires for the same size of vessel.

Table 14- Container vessel (800 TEU) port costs (excl. cargo handling)

	USD
Buenos Aires	27,900
Rio de Janeiro	12,400
Baltimore	11,700
Montevideo	11,100
Philadelphia	9,800
Paranagua	9,800
Santos	8,800
Fortaleza	5,300

(Source: Hamburg- Sud 1994)

c. Cargo handling

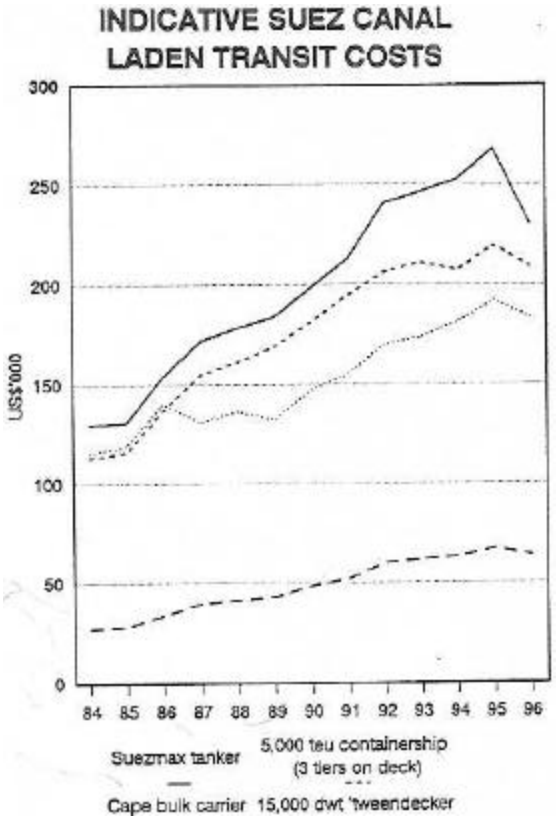
Cargo handling costs depend on the quantity and the nature of the cargo. This includes stowage, lashing, securing, tallying, weighing and transferring from warehouse to ship. Cargo handling costs also vary from port to port and the principal element is labour for handling cargo. In liner shipping, the company arranges the payment for cargo handling and recovers it from the shippers.

d. Canal dues

Canal dues are based on the particular tonnage of the vessels, and set up by the canal authorities. The Suez Canal and Panama Canal are the most common ones. Operators who sail on the South Asia/ Europe route have to transit the Suez Canal,

which is the major revenue earner for Egypt. Canal dues are a heavy burden for the shipping companies today, and increased during 1984-1995.

Figure 13



(Source: Drewry shipping consultants)

4.2 CONTAINER/SLOT RATIO

The above explained costs along with the structure are common for many shipping companies, and everybody has to face the market fluctuations for each cost item. Besides, the containers are playing a major role in shipping costs and everybody is talking about this as a big threat to the shipping company's profit. So, it is essential to analyse the required number of containers per slot in order to take cost-effective measures. Every shipping company engaged in container transport, spends huge amounts of money on container costs. This includes capital cost and maintenance cost. The container repositioning cost is a substantial addition to the total container cost and will be discussed later. First it is necessary to understand the container/slot ratio and the influential factors.

If the container /slot ratio is X and then,

X = Q/C*N = (1+R)U*C(N+Ta/S+Tb/S)

Q-The total number of containers required (in TEU)
C-Mean ships capacity (in TEU)
N-Number of ships
S-Ship's service interval (in days)
T-Container turn over time (in days)
U-Space utilisation ratio (% of C)
R-Container off service for repairs (% of Q)
T/S ³ 1

(Source: Logistics, Prof. Ma, 1998)

X implies the use of containers per slot and it should be minimised in order to reduce the container costs. X can be minimised by reducing the container turn around time (T), but it will result in increasing the container repositioning cost. It has been estimated that the minimum number of containers per slot is 1.9 (Evergreen), but a round-the-world service needs a higher container/slot ratio (Ma, 1998).

4.3 MOVEMENT OF EMPTY CONTAINERS /CONTAINER REPOSITIONING

This is a major problem associated with containers, not only for small shipping companies but also for larger ones. The major imbalances in trade make it worse and it is estimated that about 21% of all container movements worldwide are empty (Drewry 1992). All Asian operators are suffering not only from fallen inward cargo volumes but also from a huge imbalance in container movements.

The following table illustrates container movements since 1990 and gives forecasted figures up to 2010.

Table 15- World container movement (in million TEU)

Year	Loaded	Empty	Total	Empty/Total
1990	66	17	83	20.5
1992	80	20	100	20.0
1994	100	24	124	19.4
1996	119	28	147	19.0
1998	134	33	167	19.8
2000	152	38	190	20.0
2002	162	41	203	20.0
2004	171	44	215	20.0
2006	180	46	226	20.0
2008	190	48	236	20.0
2010	200	50	250	20.0

(Source: Containerisation International yearbook data, 1998)

Almost 20% of containers moved every year are empty. It is estimated that the current cost for moving empty containers is around USD 25 billion and the forecast is USD 50 billion for the year 2010 (Containerisation International, April 1999, p. 85). Everybody needs to reduce the repositioning costs by using certain effective measures. Being in an alliance or co-operation can reduce the cost by sharing the equipments. The repositioning cost for empty containers can be minimised by booking outward cargo to the maximum possible level. The marketing department, the container control department and the agents who arrange bookings are responsible for making the balance of positioning and repositioning of containers. There is also an idea to introduce folding containers in order to solve this problem (Containerisation International, April 1999, p. 85).

4.4 UNUSED CAPACITY

What is the reason for unused capacity? Lower capacity utilisation can be considered as the major reason which is related to supply and demand in the shipping market, which can be illustrated as follows;

Capacity utilisation = Demand/Supply

Demand depends on the cargo volume and the distance, i.e. ton-miles, and supply depends on the existing fleet, speed, cargo intake and operation days (Fairplay World statistics, 1996). The low capacity utilisation, the unused slots and the

movement of empty containers can be considered as separate parts of one problem. For a shipping company (owner), being unable to fill the ship is only a loss of freight but not a cost. However if any company has slot arrangements with some other companies, and is unable to supply containers for the agreed slots, it has to pay for all slots that they agreed. So these companies are really in trouble, because on one side there is no freight income and on the other side there is payment for unused slots. The slot arrangement that CSCL has with SCI is giving the same result, because CSCL sometimes fails to fill the agreed slots and has to pay for unused capacity. From the beginning, the parties had negotiations regarding this unused capacity, but CSCL had to pay for it all the time. This made the situation very difficult and the corporation suffered a lot without having enough revenue. The corporation is now in a situation where it has to find a solution whether to continue this South Asia/Europe service with SCI or give up the service.

4.5 CONTAINER REPAIRS AND MAINTENANCE

Container repairs and maintenance require lots of money, whether leased or owned. It is estimated that the total cost is around USD 2 billion per year including direct costs such as off-hire repairs, in-service repairs and indirect costs like idle time, storage costs, survey costs and trucking costs (Containerisation International June 1995, p. 49).

Any shipping company, which is in a position to reduce its unit transport costs significantly and, therefore, its required freight rates, gains a competitive advantage. Now CSCL is not in a position to reduce its transport costs, because it carries cargo under slot arrangements with other shipping companies. However as far as cost is concerned, it is realised that when CSCL carried cargo on its own vessels, it found it difficult to reduce the unit cost against the world trend for major cost items. It experienced high cost and low freight revenue during that time and also, being a member of the IPBC conference, it has to offer the same freight rates as other members, even though they have different cost structures. This is not a problem for one shipping company only, but most have taken cost-effective measures to reduce costs and at the same time their freight rates have become competitive.

Chapter 5

5. OTHER KEY AREAS

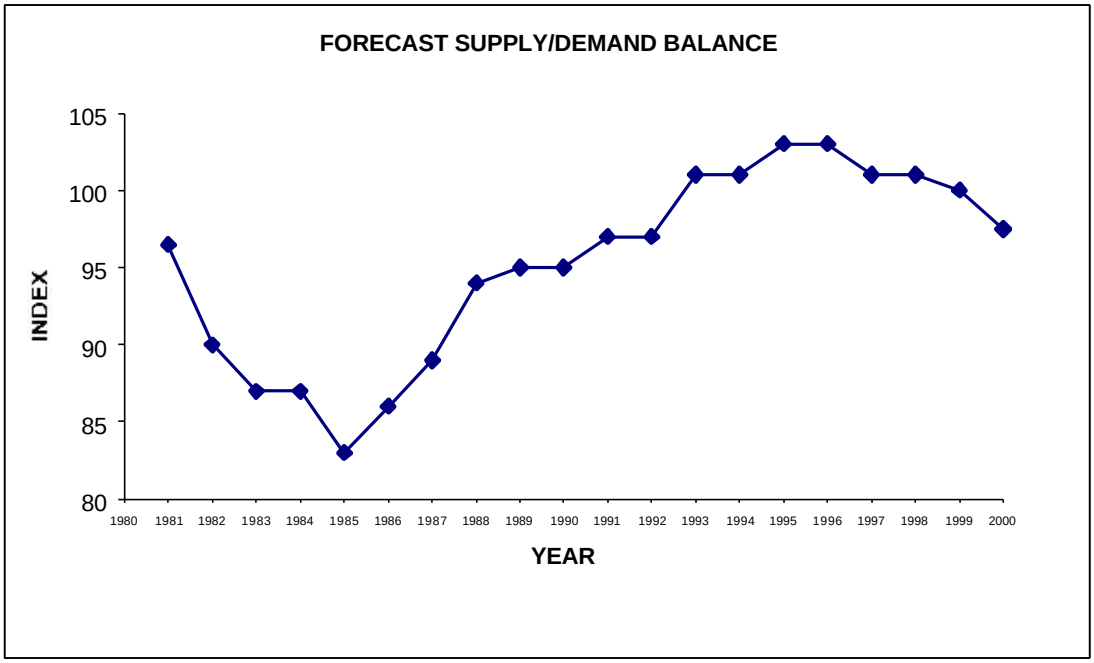
5.1 SUPPLY AND DEMAND BALANCE

What is the supply and demand balance? Is there a balance between these two factors? What is the reason for supply getting bigger and bigger? What are the impacts? These are the most common questions necessary to discuss under this topic.

The balance of supply and demand is simply the balance between ship owners and cargo owners. The world fleet is continuously increasing. Determining factors for fleet expansion are the high amount of new building deliveries and the low level of broken-up tonnage. Many shipping companies are investing huge amounts of money to increase their carrying capacity. According to Maersk Line's statistics, they had 93 vessels delivered in 1998 and had 105 on order at the end of the same year. Again they have ordered 83 vessels this year and decided to order another 66 vessels in next year 2000. All vessels have a capacity of over 999 TEU. Thus this is how supply is getting bigger and bigger. The size of supply is determined by the size of the ship, sailing speed, time in port, operation/maintenance ratio and the loading factor (Shou Ma, 1998). Some of these elements will be discussed under ship characteristics.

Maersk is not the only company ordering new vessels and also not everybody is ordering new tonnage. However it is very clear that the supply side is getting bigger. Over tonnaging is a situation where everybody suffers. There is no balance between supply and demand today. The following graph shows the supply/demand balance from 1980 and forecast up to year 2000. It shows a decreasing balance from 1996 to the year 2000. So it is not clear, why these big shipping companies are ordering new vessels in the present situation and also looking at future weak demand.

Figure14 - Forecast supply/demand balance 1980 - 2000



(Source: Shipping industry today, Maersk Line, 1999)

According to the conference statistics, freight rates from Colombo to Europe had fallen by about USD 600 per TEU in 1996/1997, because of the abundance of tonnage on the westbound trades from the Far East. Over tonnage can be considered as the major reason for the fallen freight rates during the last couple of years. Because of this continued supply of new tonnage, the possibility of declining freight rates can be expected in future.

5.2 TRADE IMBALANCE

This subject has already been discussed indirectly in the previous chapters, but considering its importance today, it will be analysed here again in connection with some statistics.

The following table forecasts the cargo volumes on the Trans Pacific, North Atlantic and Europe-Far East routes.

Table16- cargo volumes in different routes

Trans Pacific			
YEAR	**EB(,000)**	**WB(,000)**	**DIFFERENCE(,000)**
1996	4764	2929	1835
1997	4994	3070	1924
1998	5236	3213	2023
1999	5478	3374	2104
2000	5740	3541	2199
North Atlantic			
YEAR	**EB(,000)**	**WB(,000)**	**DIFFERENCE(,000)**
1996	1667	1679	12
1997	1772	1784	12
1998	1881	1894	13
1999	1999	2014	15
2000	2122	2138	16
Europe / Far East			
YEAR	**EB(,000)**	**WB(,000)**	**DIFFERENCE(,000)**
1996	2074	2855	781
1997	2292	3109	817
1998	2520	3300	780
1999	2784	3703	919
2000	3063	4048	985

(Source: ISL)

According to the above statistics, the volumes on the Trans Pacific route are considerably larger, and there is a trend to increase to the year 2000. Europe-Far East, the key area so far considered in this paper, has an increasing trade imbalance up to year 2000.

There are many reasons for this trade imbalance such as economical, political, technical and social factors. Recently a major trade imbalance was experienced on the Europe/Asia route and the Trance-Pacific route, because of the Asian currency

crises. Civil war, trade restrictions and government policies are common examples. For instance, the open economy policy in Sri Lanka affected the Sri Lankan export/import trade. Due to industrial development, cargo moved in value is higher than volume. China, Japan, Korea are exporting high value cargoes such as manufactured items. However most of the time they can not find sufficient value or volume of cargo to import. According to the Maersk Line, the biggest commodity going eastbound is waste paper. These factors limit the cargo movement from one side or increase it from one side. Each shipping company is facing this situation individually, but there is difficulty in maintaining a balance on both sides because most of these reasons are unpredictable. Sometimes the lines can change their route or temporarily skip the ports which create the unbalance. According to the conference statistics, eastbound cargo volume was down about 25% while westbound was up by 13% on the Europe/ South Asia route in 1998. This shows the present imbalance on the above route.

5.3 SHIP CHARACTERISTICS

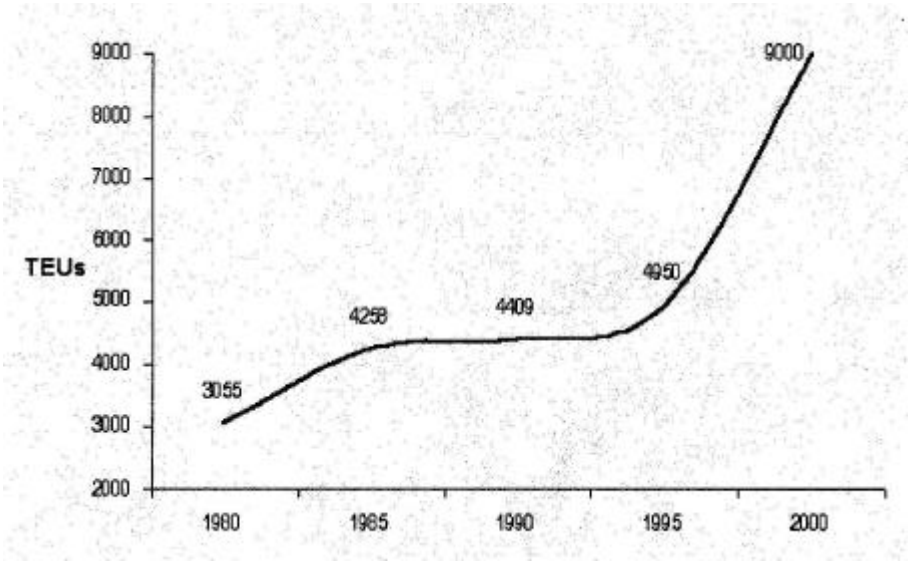
The size and the speed of the vessel are very important factors in shipping. What is the reason for ordering bigger and bigger ships? What is the reason for using fast ships? Simply that everybody wants to achieve economies of scale and to meet future demand.

5.3.1 Ship size

This is a very common topic today, because of the fast development of ship size. The first generation of the ship size, 1000 TEU, was introduced during 1967 - 1972 on the North Atlantic route. The second generation, 1500, TEU was introduced on the Europe-Australia route and the third, 3000, TEU on the Europe Far East route (Sidney Gilman, 1983, P.33). In 1980 the average ship size was 995 TEU but had increased by 2/3s to more than 1600 in 1996 (Drewery shipping Consultants, 1996, p. 49).

The following graph illustrates the largest container ships from 1980 with a forecast up to year 2000. It shows that the carrying capacity of the largest container ship was around 8,700 TEU (including empty containers) at the beginning of 1998.

Figure 15- the largest container ships from 1980 and forecast up to year 2000.



(Source: Data for 1980-1995: Drewery Shipping Consultants, 1996, p. 49 and data for year 2000: ECLAC forecast)

Maersk Line is a major player in building large ships and their first 6000+TEU vessel was built in the Odense shipyard in Denmark. However the actual size of these big ships is still under discussion by various people in the shipping sector. It was mentioned by Francis Phillips in the Lloyd's List of September 15th 1997, as 8,736 TEU. This does not imply that all major carriers are ordering bigger and bigger ships. Some of them have still not started to construct vessels with a capacity of 6000 + TEU, like Evergreen. If someone builds 8,000 teu ships, it does not mean that shippers will be prepared to give more cargo. Unless freight rates go down dramatically this will not happen.

Big ships have problems in ports due to technological and natural limits and diseconomies of scale. The water depth of ports limits the entering of big ships. Time in port is a very important aspect in shipping, and this time tends to be longer for larger ships. But due to the new technologies, new systems are being introduced to move containers within the ship's hull or to load and unload the ship from both sides (Jan Hork, 1998).

Cost is a very important factor in shipping as discussed in the previous chapter. From the cost point of view, the larger the ship the higher the daily cost.
The following table shows the daily costs per main category as a function of ship size.

Table 17- Daily cost per main category as a function of ship size

Ship Size In TEU	Capital Costs	Labour Costs	Fuel Main Engine	Fuel Auxil. Engine	Admin. Costs
400	6264	4300	1982	349	6049
800	10056	4300	3803	445	6719
1200	13264	4300	5568	513	7144
1600	16143	4300	7298	567	7462
2000	18800	4300	9001	613	7718
2400	21293	4300	10684	654	7934
2800	23656	4300	12350	690	8122
3200	25915	4300	14002	723	8288
3600	28085	4300	15641	753	8437
4000	30180	4300	17270	781	8572

(Source: Current issues in maritime economics, p. 116, 1993)

The carrying capacity of the larger ships is bigger and the unit cost is lower. So the larger ship operators can take the cost advantage and are able to offer lower freight rates. From the shippers' point of view, they benefit from the present environment. However lots of shipping companies are suffering today because of this oversupply which reduces the freight rate level. Now freight rates are coming close to the bottom, because of overtonnaging and the shipowners need to think about that. Theoretically big ships minimise the operational unit cost but, practically it is not possible to minimise unit cost all the time because there is insufficient cargo. Eleven of the twenty largest companies are based in Asia (Shipping Times, 17 November 1997). So small shipping companies in Asia are losing more and more because of the difficulty of competing with large companies. This could bring negative effects to small ports also. Because of the non-availability of deep draft facilities, it is possible that small ports will be dropped from the itineraries. Accordingly, the number of port

calls may be reduced. As far as concerned, the disadvantages of big ships outweigh the advantages. So everybody in the shipping sector needs to think about what a suitable size of vessel is, which really benefits everybody. It is obvious that the optimum size is different for different routes and for different operators, because the determinant factor of the optimum size is anticipated cargo flow for the given route. Finally, the optimum size for the ship can be described as the maximum size that the ship owner can fill and operate safely on the route and can turn round with reasonable speed in port (Alderton, 1995).

5.3.2 Ship speed

With the technological developments, the steamship and new engines have resulted in an increase in the speed as well as the bunker requirements. This has resulted in a reduction in the steel weight and has encouraged shipping companies to use new ships. Nowadays, some shipping companies are replacing the existing fleet with fast ships. Yangming and K line replaced eight 2054 TEU vessels with 19/20 knots service speed with vessels of 3,500 TEU capacity and 21/22 knots service speed (Containerisation International, October 1998d, p. 11). High speed can be considered as a marketing tool in liner shipping and operators are used to sailing at a higher than optimal speed. But optimal speed is the speed, which produces maximum profit.

Fuel consumption is higher in faster ships, but from the shippers' point of view, they prefer to use a fast service. Shippers need to transport their goods on an accurate date/time, looking for the fastest service available. It also saves container and inventory costs, although not significantly. As long as the bunker prices are cheap, the fast ship operators can benefit from the economies of scale.

The carrying capacity of the fast ships is bigger, and also the service frequency. One sailing to a specific region per week is not enough today. So by using fast ships, the operators can give a better service frequency, transit time and voyage duration. Cosco introduced faster, 3500 TEU capacity vessels to reduce transit time between Xingang and New York, in order to attract more customers. They believe,

by increasing the service speed, they can give a better transit time to their customers (Paul Richardson, 1997).

The voyage duration of the Asia/Europe/Asia route was around 55-60 days for the CSCL vessels (Average speed 15 knots). Five container vessels were used on the same route and the service frequency was around 11 days. Small shipping companies really can not offer such kinds of service to the shippers any longer, due to the competitive environment. If they want to survive they need to adjust to the present environment. Innovation could be a good solution, but the main problem for small shipping companies, especially in developing countries, is the financial incapability.

5.4 FEEDER SERVICE

This is a very important area to be discussed for a country like Sri Lanka. The Port of Colombo is used as a hub port and there are feeder services to the Indian sub continent. Many shipping companies operate feeder services on this route, connecting Colombo as a transhipment port. Carriers have invested in agencies, including APL, P&O Nedlloyd, Sea Consortium and Orient Express Lines, which are common feeder operators using Colombo. In 1997 Sea Consortium carried around 245,000 TEU on its own vessels and 40,000 TEU on chartered slots connecting Colombo (Containerisation International, May 1998b). Maersk Line uses the port of Singapore as their hub port.

The following table illustrates the Colombo connection feeder services.

Table 8- Colombo connection feeder service

Sectors	No. Of Operators	Total Sailings Week	Total No. Of Vessel Deployed	Total Vessel Capacity	Average Vessel Capacity (TEU)
UAE					
Dubai	2	2	4	1,905	476
India					
Kandla	1	1	2	805	403
Bombay	4	4	6	2,386	398

Calcutta	3	2.5	3	1,180	393
Cochin	3	4	5	2,542	508
Tuticorin	4	6.5	6	2,913	486
Madras	4	6.5	9	4,149	461
Pakistan					
Karachi	1	0.5	2	1,457	729
Bangladesh					
Chittagong	1	1	1	524	524
Mongla	1	1	1	504	504

(Source: ISL)

It is very important to have feeder connections from the main route in other destinations. In particular liner operators and larger ship operators are used to having feeder connections. Giant vessels streamline the number of direct port calls, and hence increase the use of feeders. Large ships cannot call at small ports because of the non-availability of deep draft facilities, and use hub ports to deliver the cargo to their customers in such ports. Most of the time liner operators call at only one port in each region and cannot deviate from their main routes, needing feeder connections to serve their customers.

First CSCL used its own vessel (Lanka Muditha), having a capacity of 86 TEUs for containers and 100 MT for conventional cargo, for both the west coast and east coast of India. Later it used two time chartered vessels, each of 250 TEU capacity, and operated between the ports of Singapore, Madras, Colombo, Cochin and vice-versa. Still later, slots from various lines were used, but the cargo volume fell tremendously in a very short time (1995-1998).

The following table illustrates the cargo volumes during 1995-1998.

Table 19- CSCL cargo volumes during 1995- 1998 (in TEU's)

	1995	**1996**	**1997**	**1998**
EU/USA to T/S	1117	839	199	21
T/S to EU/USA	1851	1102	176	9

(Source: CSCL)

T/S ports are Tuticorin, Calcutta, Cochin, Madras, Mangalore and Chitagong. Not only the transhipment volume but also total volume for both eastbound and westbound sailings fell rapidly. It is very difficult to analyse the situation without having enough accurate information. However it is necessary to find out why CSCL lost its customers, especially in that area. In particular the corporation had to face higher rates for slot hire offered by various lines and resulting into losing its customers in these areas. This is the only reason which can be seen with the available details and there must be some additional, unseen reasons. However the corporation needs to concentrate on this, giving it its full effort, because if one day in the future CSCL may decide to give up its EU/Asia service, this is the only service area it can consider.

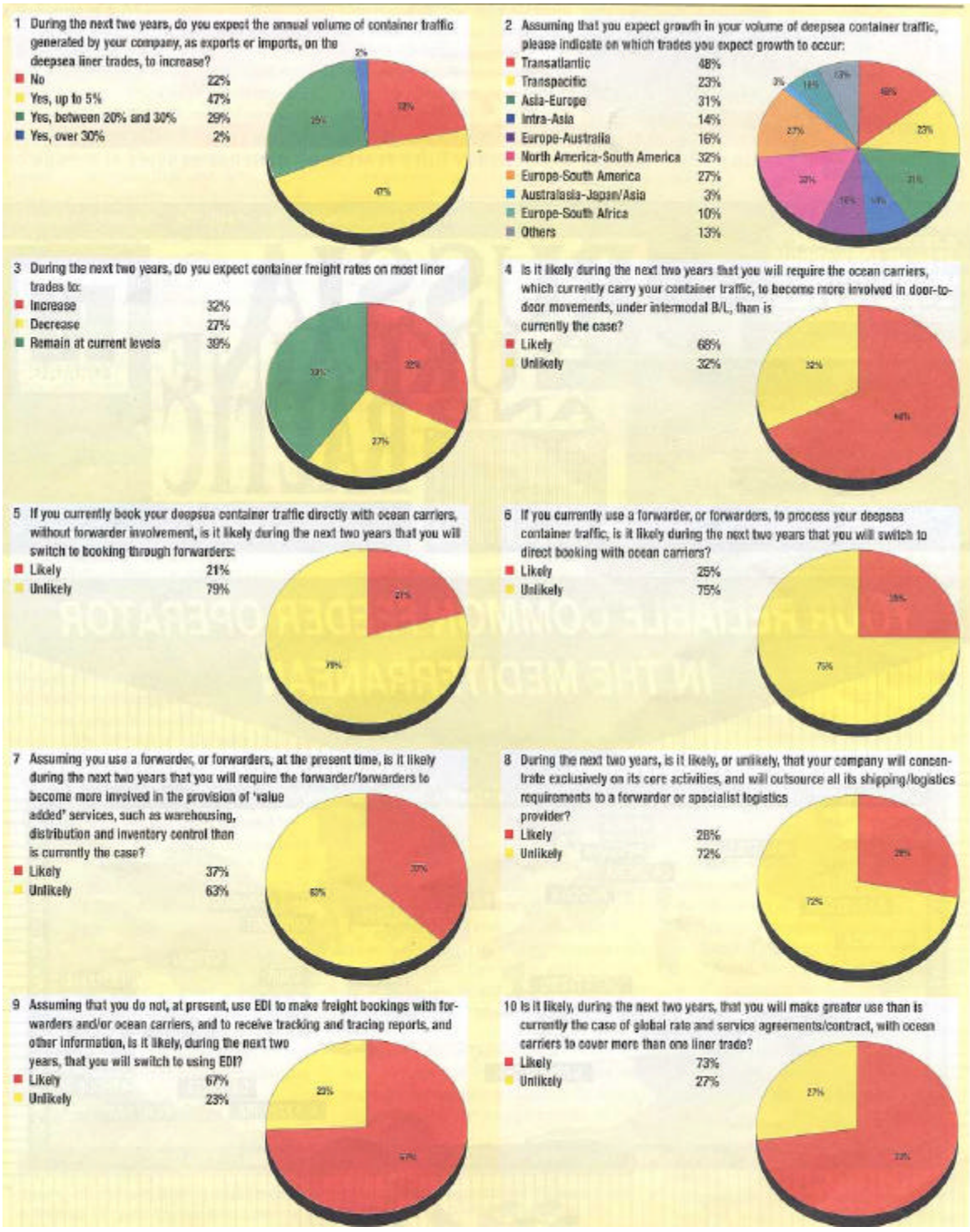
5.5 CUSTOMER SERVICE

Customers are playing a vital role in shipping and their requirements are changing today. The most important customers in liner shipping are the cargo owners. Normally, the shippers and consignees select their carrier, but freight forwarders and NVOCCs are also involved in selecting a shipping line. They are not only focusing on price being interested in reliability, quality, delivery time, possibility of getting and sending information and also global coverage. However, the freight cost is the basis and other factors add value. So the successful future of any company can be predicted by its ability to satisfy the customer's requirements.

The following table shows the results of questionnaires received from Argentina, Austria, Belgium, Canada, Cyprus, the Czech republic, Denmark, Finland, France, Germany, Greece, Hong Kong, Indonesia, Italy, Kenya, Malaysia, the Netherlands, Norway, Spain, Sri Lanka, Sweden, Trinidad, the United Kingdom, Uruguay, and the United States. The response from the shippers located on the European mainland (including Scandinavia) was 34%, from the US and Canada 33%, from the U.K 19% and from Latin America, the Caribbean, Mediterranean region, Asia and Africa 14%. As many as 31% of shippers expect growth in EU/Asia trade and 39% believe that the container freight rates will remain at today's level during the next two years.

Comparatively, the expected growth rate on the EU/Asia route is better than many other routes except Transatlantic and North America- South America, and lies in third place according to the rank. Considering the present freight rate, there is no space for further decline rather than remaining the same.

Figure 16- Results of Questionnaire sent to 1,000 shippers in June 1998



(Source: Containerisation International, November 1998g, p.79)

More shippers like to get a door-to-door service and also EDI facilities for cargo bookings. APL was the first shipping company that started to use the Internet to issue original Bills of lading to its customers. Not only this, customers can also print out their own freight invoices under APL's EDI facilities (Containerisation International, August 1997a). IT and EDI are the key tools for providing a better customer service.

In 1997, CSCL set up a new clearing and forwarding division in order to provide better a customer service. At the same time a customer service unit was started, which helps customers to get information on schedules, collecting B/L's and, paying freight charges faster than before. However compared to other shipping companies, and considering the development of new technology, CSCL is far behind its customer requirements. In order to provide a customer-oriented transport service, the freight rate plays an important role. Being a looser CSCL cannot offer better service. First it needs to cover the cost and make profit, and then the company is able to transfer its benefits to its customers. By considering the cost structure and the freight level, the importance of rate restoration is understandable in order to standardise the customer service. If the programme will be successful, the corporation can improve its customer service by

- Giving customers freight quotations, bookings and tracking service on the web site
- Printing B/L via the internet
- Publishing service schedules

Customers today expect and demand more than before. Their expectations are based on the freight they pay. By paying less, nobody will expect a better service. In order to obtain a quality service, they have to pay a reasonable freight rate. So what is needed today is a freight restoration. Finally, what the company earns it can be shared with its customers, by investing in technology to reduce their process steps through EDI.

Chapter 6

6. SUMMARY AND CONCLUSION

CSCL is a state-owned company and it has problems because of being a state owned-company. Changing the management strategy in a state owned company is impossible. It has to continue as a national carrier to support own exports and also for military needs. Besides these internal problems, every company has to face some difficulties to some extent, depending upon their strengths and weaknesses. The most common problems are declining freight rates, heavy costs and aggressive competition. Conference lines have some sort of stability in theory, but most of the time they are weaker.

Some sort of co-operation is necessary to achieve capital intensive demands in shipping and also under low freight rate conditions. Alliances/mergers are the right answer for solving problems in the industry, because these arrangements create stability in this uncertain market. Recent mergers are Maersk/SeaLand, P&O/Nedlloyd, the acquisition of APL by NOL and the purchase of CGM by CMA. The main reasons for companies merging and forming alliances are the desire to reduce unit costs and to increase revenue. This has resulted in large shipping companies. The top 20 carriers now control more than 1/2 of the world's slot capacity. The danger of over capacity, fluctuations in freight rates and the strengths of alliances are leading the industry, which has resulted in moving small companies out of the business.

There are a lot of different opinions about the shipping industry. Some people are arguing that the new generation of global alliances would not last long. Others believe, that compared to other industries, shipping is still rather fragmented and more consolidation is expected in the future.

Cost focus alone is not enough to return the industry to profitability. At the same time it needs to concentrate on the revenue side of the equation. Shipping lines have been suffering heavy losses during the last couple of years. They have no alternative rather than to raise freight in order to stabilise the trade. Accordingly, some shipping lines have revised their proposed shipping charges on shipments to the EU and USA. Conference lines have also decided to increase their rates. This rate restoration is still in its infancy, and the member lines are relatively optimistic about the programme to be implemented.

CSCL has some geographical advantages, because the port of Colombo is strategically located close to the main east/west shipping channel and the port has developed as a key hub for both the West Coast of India/Pakistan, southern India and Bay of Bengal markets. It is currently ranked 26th in the world' s container handling ports. So the Corporation has a good opportunity to capture a market share, especially in that area. This is the situation where it can match its strengths with the opportunities. But Colombo's status is likely to change, because Maersk/Sealand open their new hub at Salalah in Oman, even though the port of Colombo has taken some steps to respond to these changes in the near future.

Customers typically select the service that gives them the greatest value. Their requirements are for a wide range of options in respect of carriage arrangements and price. The key to winning the customers is to identify their needs, provide better service than the competitors do, which produces more value. One of the factors of competitive advantage is excellent door-to door capabilities, which is derived from information technology. In fact, from the service point view, it can be considered as one of the new ways to stand out from the competition. From the customer's point of view, their expectations are changing today, especially in terms of automated communication, which leads to elimination of the need for paper work. In the modern competitive business world, exchange of information is one of the key factors. An efficient and accurate information system will enhance the productivity of any company.

Finally, as a company or as an industry it is necessary to identify the strengths, opportunities, threats and weaknesses that influence its success or failure. It is important to think about how to respond to the changes resulting from alliances, other factors like declining freight rates, over capacity, heavy costs and at the same time, customer demands. Over capacity is the situation where too many ships are chasing too few cargoes. There should be a control on the supply side. Everybody who contributes in increasing the capacity, such as shipowners, shipyards, banks and governments, have the responsibility to secure the maritime sector by controlling their activities. Shipowners can control by ordering new ships, shipyards by building, banks by lending, and most importantly governments by their shipping policies. At the same time, the earning flow should be strong enough and stable, in order to improve the customer service level as well as the company itself. So rate restoration can be considered as the best solution for all companies, which have suffered during the last couple of years, to get into a position to offer value added services to their customers. In the shipping industry, the customers have become stronger than ever before. So the success of the company lies in how well the company is able to fulfil customer satisfaction.

Generally, not only in the shipping sector, but all other industries in developing countries are facing financial difficulties. They have valuable resources, better geographical locations, fine weather and the most important, human capabilities. Mixing these resources in a better proportion in order to produce the right thing is not impossible. It is obvious that these countries have natural resources, but natural and artificial barriers as well. Financial incapability is the main barrier against their development. Educated people are leaving their countries. The education system is not according to the country's requirement. Politicians only think about their power. These are the most common problems that make the situation worse. The whole system should be changed, but it is not an easy task and it takes a long time. However, the new generation of people is used to think in a better, practical and useful way. So everybody can expect these countries to change in the near future. It should be started and developed by each sector. In order to develop these countries the maritime sector has a large role to play and support from international organisations like the UN and IMO is expected. Presently, IMO is playing the most

important role for developing the maritime sector and this is highly appreciated by everybody in the shipping industry.

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