

## 4.3 Freight Shipping

### 4.3.1 Container Vessels

#### (1) BASIC SERVICES AND ENGAGED VESSELS

There are only 4 companies which are operating a total of 28 container vessels in the Philippine domestic shipping as of year 2000. Those are based in Manila and Cebu serving liner shipping service connecting major cities in the country. The container vessels transport various types of commodities which are suitable to contain in containers. Major commodities for container are fruits and vegetables, corn, animal feeds, live animals, chemicals, manufactured goods, and other general cargoes.

The four companies which are operating container vessels are Sulpicio Lines Inc. (11 vessels registered in Cebu), Lorenzo Shipping Corporation (6 vessels in Manila), Solid Shipping Lines Inc. (10 vessels in Manila) and Aboitiz Shipping Corporation (1 vessel in Cebu).

The characteristics of container vessels are as follow:

- Average vessel size is about 3,900GT, the largest vessel is 8,598GT and the smallest is 915GT.
- Most of container vessels are old with more than 20 years. Average vessel age is 28 years as of year 2004.
- Most of vessels are equipped with ship gears because not all ports are equipped with proper container cranes.

**Table 4.3.1. Profile of Container Vessels**

Shipping Co.	No. of vessels	Total GT	Ave. GT	Ave. Age <sup>1)</sup>
Aboitiz Shipping Corporation	1	2918	2918	34
Lorenzo Shipping Corporation	6	39851	6642	24
Solid Shipping Lines, Inc	10	37353	3735	22
Sulpicio Lines, Inc	11	28851	2623	35
Total	28	108974	3892	28

Source: Updated MARINA database 2003

Note: 1) As of year 2004

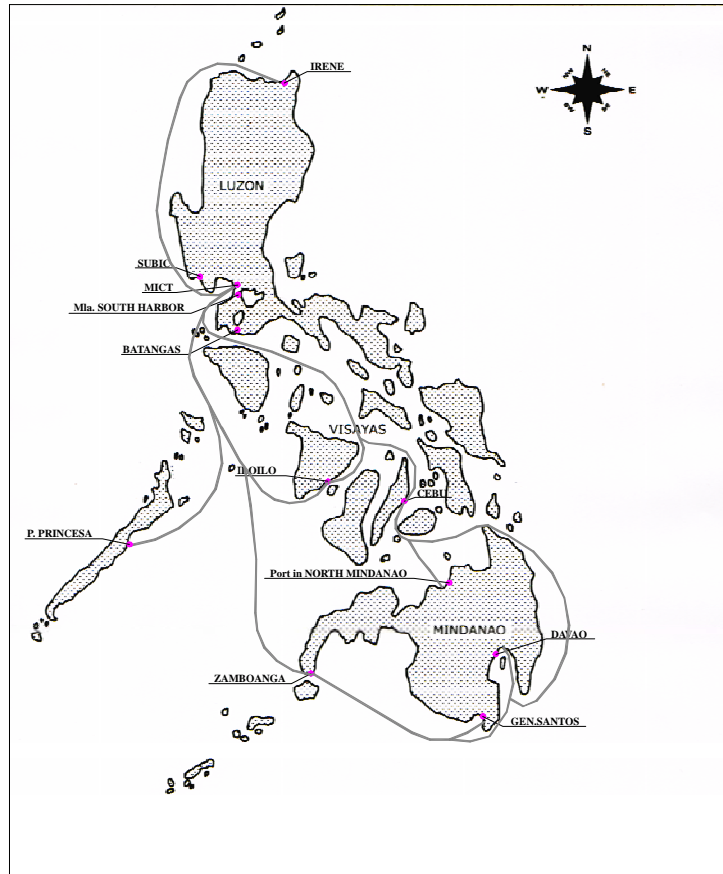
#### (2) SERVICE ROUTE NETWORK

Liner vessels operate mainly on primary routes connecting between Manila and Cebu and other major cities in the country such as Iloilo, Bacolod, Dumaguete, Cagayan de Oro, Davao, General Santos as shown in Figure 4.3.1. Typical route of liner container vessels are as follows:

- Manila – Cebu – Iloilo – Bacolod – Manila
- Manila – Cebu – CDO – Manila
- Manila – Davao – Cebu – Manila
- Manila – Cebu – Dumaguete – CDO – Manila
- Manila – Dumaguete – CDO – Bacolod – Iloilo – Manila

- Manila – Iloilo
- Manila – CDO
- Manila – Davao
- Manila – General Santos

**Figure 4.3.1. Service Route of Liner Container Shipping**



Source: Port Master Plan Study, JICA 2004

### (3) OPERATIONAL CHARACTERISTICS AND PROBLEMS

- Most container vessels are very old and continuously aging. Older vessels need to be replaced for safety and for more efficient operation.
- Most of container vessels have ship gear because adequate container cranes are not provided at most of ports in the country. Therefore, productivity of cargo handling is low and it will increase freight cost.
- According to the analysis on operation data of 3 sample container vessels, load factor of cargo is very low (8-25%).
- Container vessel is operated as liner calling at several ports. Therefore, comparing to the direct shipping service, it needs more travel time at sea and time for waiting for berthing and cargo handling at port, and load factor are different by section. It reflects to higher freight rates.

**Table 4.3.2. Load Factors of Sample Container Vessels**

Sample (Route)	Route	GT	Annual Container Load Factor (%)
Vessel 1	Manila-Cebu-Iloilo-Bacolod-Manila	5,589	13.9
Vessel 2	Manila-CDO-Manila	5,954	25.3
Vessel 3	Manila-Davao-Manila	8,598	8.1

Source: MARINA 2003

## 4.3.2 General Cargo Vessels

### (1) BASIC SERVICES AND ENGAGED VESSELS

Most of general cargo vessels are operating as tramp service based on the demand of goods to be transported. Major commodities transported by general cargo vessels are cement, iron and steel, fertilizer, transport equipment, logs and lumber, agricultural products such as sugar, paddy and rice, wheat, and other general cargos which are not suitable to contain in containers.

The characteristic of general cargo vessels are as follows:

- There are 854 general cargo vessels engaging in the domestic shipping in the Philippines of which 98% are steel-hull, while the remaining are fiber glass and ferro cement vessels.
- Average vessel size is small about 622GT. By hull type of vessel, average size of steel vessels is relatively bigger about 628GT, while that of fiber glass and ferro cement are 25GT and 552GT, respectively.
- Average age of general cargo vessel is about 22 years as of year 2004. By hull type of vessel, average age of steel vessels is 24 years, while that of fiberglass vessel is 15 years.
- 54% of total general cargo vessels are registered in the Luzon Area. The shares of Visayas and Mindanao are 31% and 14%, respectively.

**Table 4.3.3. Profile of General Cargo Vessels**

Hull	No. of vessels	Total GT	Ave. GT	Ave. Age <sup>1)</sup>	% of Liner
Steel	841	528070	628	22	1%
Ferro Cement	5	2758	552	11	0%
Fiberglass	7	172	25	15	0%
Others	1	381	381	34	0%
Grand Total	854	531381	622	22	1%

Source: Updated MARINA database 2003

Note: 1) calculated as of 2004

**Table 4.3.4. Registry of General Cargo Vessels**

Hull	Luzon	Visayas	Mindanao	Total
Steel	457	259	125	841
Ferro Cement		5		5
Fiberglass	6	1		7
Others		1		1
Total	463	266	125	854

Source: Updated MARINA database 2003

## (2) SHIPPING COMPANIES

There are 403 shipping companies which operate general cargo vessels. Of which 61% own and operate only one vessel, most likely managed as family business. There are only 10 shipping companies which operate more than 10 vessels.

**Table 4.3.5. Shipping Companies Operating General Cargo Vessels**

No. of Operating Vessels	No. of Shipping Companies	Total No. of Vessels	Total GT	Ave. GT
1 vessel only	247	247	131,312	532
2-5 vessels	136	367	233,930	637
6-10 vessels	10	73	32,230	442
11-20 vessels	8	114	92,408	811
21 vessels & more	2	53	41,500	783
<b>Total</b>	<b>403</b>	<b>854</b>	<b>531,381</b>	<b>622</b>

Source: MARINA 2000

**Table 4.3.6. List of Shipping Companies with More Than 10 General Cargo Vessels**

Shipping Companies	No. of Vessels	Vessel Type	Registry
Candano Shipping Lines, Inc.	28	Steel	Legaspi
Asian Shipping Corporation	27	Steel	Manila
Loadstar Shipping Co., Inc.	19	Steel	Manila
Northern Mindanao Transport Co., Inc.	17	Steel	CDO
North Front Shipping Service, Inc.	16	Steel	Manila
Island Integrated Offshore Service, Inc.	14	Steel	Manila
Premier Shipping Lines, Inc.	14	Steel	Cebu
Majestic Shipping Corporation	12	Steel	Batangas
Mediola Reynaldo	11	Wood	Manila
Tacoma Integrated Port Services, Inc.	11	Steel	Manila

Source: MARINA 2000

## (3) OPERATIONAL CHARACTERISTICS AND PROBLEMS

- Steels vessels are as old as 22 years on the average. Older vessels need to be replaced for safety and for more efficient operation.
- Productivity of cargo handling is low due to inadequate cargo handling system at port.
- According to the shipper interview survey, availability of shipping service is very critical for their stable business activities. Sometimes shippers have big losses due to delays on shipping.

### 4.3.3 Dry Bulk Carriers

#### (1) CHARACTERISTICS OF SERVICE AND ENGAGED VESSELS

In the MARINA's vessel database, there is only one bulk carrier. In the Philippines, shipping service for dry bulk cargoes are relied on barges. Therefore, in this section existing services by barges are analyzed.

Barges are operated as tramper service based on the demand of goods to be transported. Major commodities transported by barges are wheat, copra, cement, fruits and vegetable, animal feeds, and other general cargoes.

The characteristic of bulk carriers are as follows:

- Only one bulk carrier with 3,443GT is operated by Philippine Sinter Corporation. The vessel was built in 1972 in Japan and registered in Cagayan de Oro.
- There are 178 barges engaging in the Philippine domestic shipping. Of which 97% is steel-hull vessel, while the few remaining are fiber glass and ferro cement vessels.
- Average size is about 543GT. Average age is about 22 years as of year 2004.
- 72% of total barges are registered in the Luzon Area, mainly in Manila (76%). The shares of Visayas and Mindanao are 9% and 18%, respectively.

**Table 4.3.7. Profile of Barges**

Hull	No. of vessels	Total GT	Ave. GT	Ave. Age <sup>1)</sup>
Ferro Cement	2	657	328	27
Fiber Glass	1	538	538	6
Steel	175	95520	546	22
Grand Total	178	96715	543	22

Source: Updated MARINA database 2003

Note: 1) calculated as of 2004

**Table 4.3.8. Registry of Barges**

Hull	Luzon	Visayas	Mindanao	Total
Ferro Cement	2	0	0	2
Fiberglass	0	0	1	1
Steel	127	16	32	175
Total	129	16	33	178

Source: Updated MARINA database 2003

#### (2) SHIPPING COMPANIES

There are 115 companies which operate barges. Of which 74% own and operate only one vessel. There are only 3 shipping companies which operate more than 6 vessels.

**Table 4.3.9 Shipping Companies Operating Barges**

No. of Operating Vessels	No. of Shipping Companies	Total No. of Vessels	Total GT	Ave. GT
1 vessel only	85	85	46,273	544
2-5 vessels	27	71	38,173	519
6-10 vessels	3	22	13,569	617
Total	115	178	96,715	543

Source: Updated MARINA database 2003

### (3) OPERATIONAL CHARACTERISTICS AND PROBLEMS

- Barges are operated as tramper and engaging mainly on costal shipping based to/from major cities such as Manila, Cebu, etc.
- Most of barges are old and continuously aging. Older vessels need to be replaced for safety and for more efficient operation.
- Productivity of cargo handling is low due to inadequate cargo handling system at port.

#### 4.3.4 Tankers

##### (1) BASIC SERVICES AND ENGAGED VESSELS

The Philippine imports crude and refined petroleum products from foreign countries. 92% of total domestic consumption is imported. Of which 81% is crude and 19% is refined petroleum. Domestic tankers are mainly engaging on the distribution of petroleum over the country. Types of refined petroleum for domestic shipping are clean products (e.g. diesel, gasoline, kerosene, jet fuel) and black products (fuel oil). In 2002, about 7 million MT of refined petroleum was produced at refinery plants and shipped over the country where oil depots are located. Crude petroleum mainly supplied to power plants and large-scale industries and so on (1 million MT).

There are 3 major petroleum companies in the Philippines: Petron, Pilipinas Shell Petroleum and Caltex Inc. and with estimated market share of 38%, 33% and 10% respectively. The remaining 10% of the market is served by new players led by Total Philippines, PTT Philippine, Unioil, Seoil and Eastern Petroleum.

Petron and Shell have refinery plants in Bataan (refining capacity of 180,000 barrels/day) and Batangas (110,000 barrels/day), respectively. Caltex closed its refinery plant in Batangas (75,000 barrels/day) in 2003 and shift to importing refined petroleum. Those companies have their own discharging terminals and depots all over the country (e.g. Petron has a total of 30 terminals and depots over the country).

The characteristic of tankers are as follows:

- There are 205 tankers engaging in the domestic shipping in the Philippine. Most of them are single-hull vessels. Of which 62% is small size with less than 600GT. Average tanker size is about 900GT.
- Average age of tankers is about 21 years as of year 2004. By size of vessel, average age of the tankers with 0-300GT is about 24 years, while that of 301-800GT tankers is relatively new about 17 years.
- 92% of total tankers are registered in Luzon.

**Table 4.3.10. Profile of Tankers**

Size	No. of vessels	Total GT	Ave. Age <sup>1)</sup>
0-300	61	11,147	24
301-800	78	37,951	17
801-Above	66	135,349	21
Total	205	184,446	21

Source: Updated MARINA database 2003

Note: 1) calculated as of 2004

**Table 4.3.11. Registry of Tankers**

Size	Luzon	Mindanao	Visayas	Total
0-300	52	2	7	61
301-800	71	3	4	78
801-Above	66			66
Total	189	5	11	205

Source: Updated MARINA database 2003

## (2) TANKERS TRANSPORT COMPANIES

There are 93 companies providing tanker transport services. Of which 57% owns and operates only one tanker with average size of 1,006GT. There is only one company which operates more than 10 tankers, Herma Shipping and Transport Corporation. The group of companies which operates 2-5 tankers accounts for about half of total transport capacity.

**Table 4.3.12. Shipping Companies Operating Tankers**

No. of Operating Vessels	No. of Shipping Companies	Total No. of Vessels	Total GT	Ave. GT
1 vessel only	53	53	53,340	1,006
2-5 vessels	36	109	94,527	867
6-10 vessels	3	26	25,857	992
11 vessels & more	1	17	10,793	635
Total	93	205	184,446	900

Source: MARINA 2000

## (3) OPERATIONAL CHARACTERISTICS AND PROBLEMS

- Most of tankers are old and continuously aging. Older vessels need to be replaced for safety and for more efficient operation. Oil companies as client of tanker operators is expressing the problems on aged tankers and service availability.
- Tankers are basically registered as tramp service but usually operating as scheduled service because their shippers are very limited oil companies. Generally tankering companies have transportation contract with oil companies, valid for 1-3 years.
- Caltex has closed its refinery plant in Batangas and Shell is also planning to shift into importing refined petroleum products instead of crude oil. Considering this situation, there are some room to make the distribution system of oil products more efficient, if new depots (rather than depot in Batangas) are developed to accommodate imported refined petroleum is developed for the Visayas and Mindanao.

## 4.4 Shipping Service Competitiveness

### 4.4.1 Passenger Shipping Services

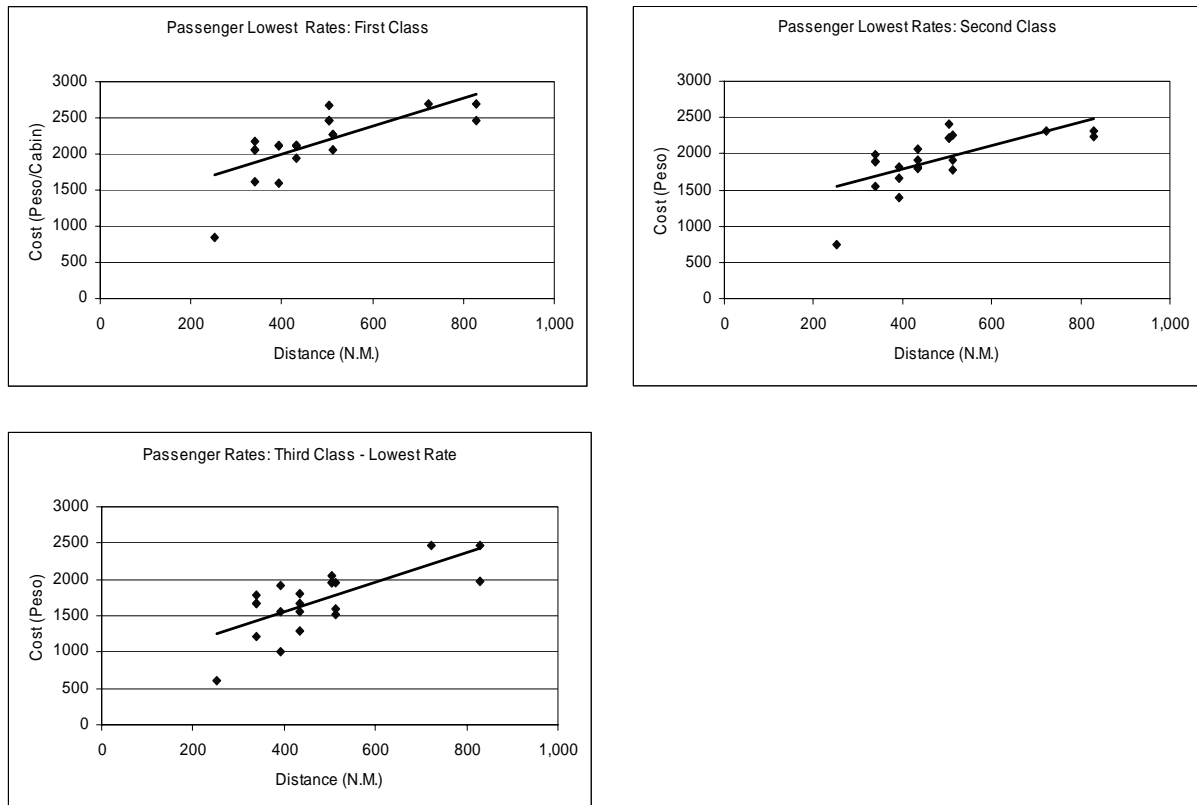
#### (1) PASSENGER SHIPPING RATES

Figure 4.4.1 shows the relationship between passenger shipping rates and route distance by class. Although passenger rates vary by shipping company and by class, it is directly proportional to route distance. Unit rate per mile is decreased by increase of route length.

The average passenger rate for the third class by route is as follows:

- Manila – Iloilo (340N.M.) : P1,400 (P4.1/pax-mile)
- Manila – Cebu (392N.M.) : P1,500 (P3.8/pax-mile)
- Manila – CDO (504N.M.) : P1,750 (P3.5/pax-mile)
- Manila – Davao (829N.M.) : P2,500 (P3.0/pax-mile)

**Figure 4.4.1. Passenger Rates for Ropax Vessels**



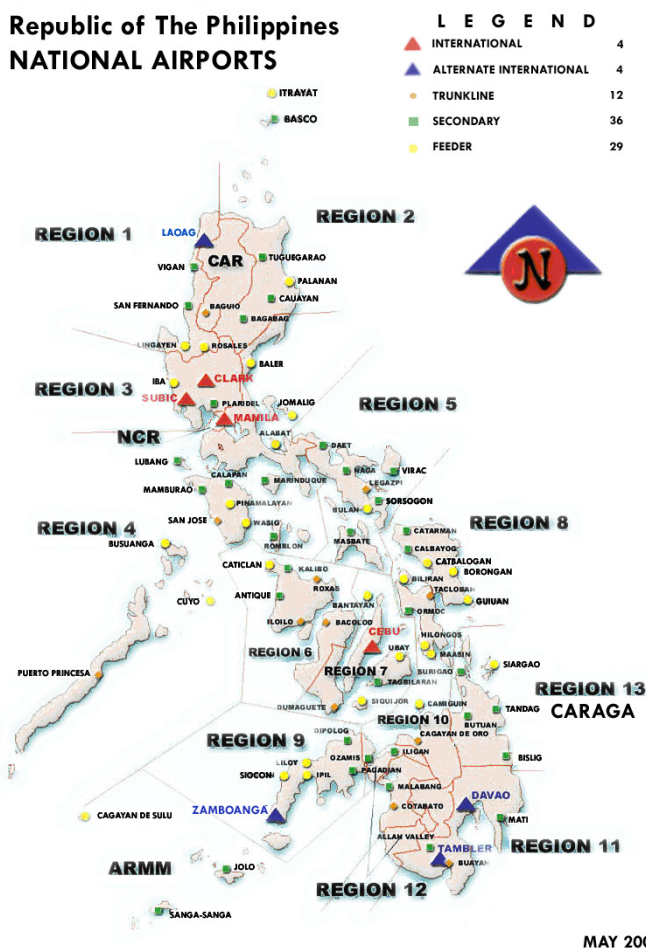
Source: MARINA 2003

#### (2) COMPETITION WITH AIR TRANSPORT

The Philippine airport system is composed of 87 airports, which are classified as international (8 airports), trunkline (12 airports), secondary (36 airports) and feeder (29 airports) as shown in Figure 4.4.2. The primary international airports are NAIA in Manila, Mactan in Cebu, Clark and Subic, while Laoag, Davao, General Santos and Zamboanga Airports serve as alternate international airports. Trunkline airport are served by jet aircrafts and secondary and feeder airports are mainly serviced by turbo-propeller type aircrafts.



Figure 4.4.2. Philippine Airport System



Source: Air Transportation Office

As shown in Table 4.4.1, air fare (economy class) costs about twice higher than shipping fare (third class) for Visayas and Northern Mindanao areas. In the short/mid-distance routes such as route within Visayas Area and route between Manila and Visayas-Mindanao, shipping rate is comparatively cheaper than air fare due to shorter route distance. Although travel speed is beyond comparison, domestic shipping passenger service is still competitive in terms of fare, particularly for short/mid-distance routes.

Table 4.4.1. Comparison of Services between Shipping and Air Transport

Routes	Shipping			Air Transport <sup>1)</sup>	
	Distance (N.M.)	Fare <sup>2)</sup>		Distance (km)	Fare
1st Class Cabin		Economy			
Manila – Iloilo	340	3,892	1,400	450	3,028
Manila – Cebu	392	3,663	1,500	569	3,048
Manila – CDO	504	5,067	1,750	781	3,868
Manila – Davao	829	4,705	2,500	969	3,818
Cebu – Iloilo	175	-	-	163	2,098
Cebu – Zamboanga	252	2,400	600	431	-

Source: Philippine Airlines and Shipping Companies

Note: 1) Economy class (2005), 2) 3<sup>rd</sup> class without meal (2005)

### (3) RORO SHIPPING WITH HIGHWAY NETWORK

The Strong Republic Nautical Highway (SRNH) is being promoted as an alternative inter-island transport system in some sections of national corridors. For example, there are two alternative ways to travel between Manila and Iloilo other than air transport. One way is taking the direct shipping service of Ropax (such as the Super Ferry) and the other way is taking RoRo-highway service of the western nautical highway through Manila-Batangas-Calapan-Roxas-Caticlan-Iloilo.

Table 4.4.2 shows the comparison of transport fare and travel time between direct shipping service and RoRo-highway service. As shown in Table 4.4.2, fare of RoRo-highway service is cheaper, competitive with Ropax service. In terms of travel time Ropax is relatively longer than RoRo-Highway system.

Service frequency should also be considered. Direct shipping service by Ropax is providing almost daily service, while RoRo service at Batangas-Calapan route is frequent (every 30 minutes from 1:00am to 11:30pm) and frequency at Roxas-Caticlan route is two trips a day.

**Table 4.4.2. Comparison of Services between Shipping and RoRo-Highway**

Mode	Class	Manila– Caticlan		Manila – Iloilo	
		Fare (P/pax)	Travel Time	Fare (P/pax)	Travel Time
RoRo + Highway	- Aircon Bus	820	14 hours	1,100	19 hours
	- Non-Aircon Bus	664		866	
Direct Shipping Service	- Third Class	-	-	1,675	18-21hours

Source: DOTC 2003

#### 4.4.2 Freight Shipping Service

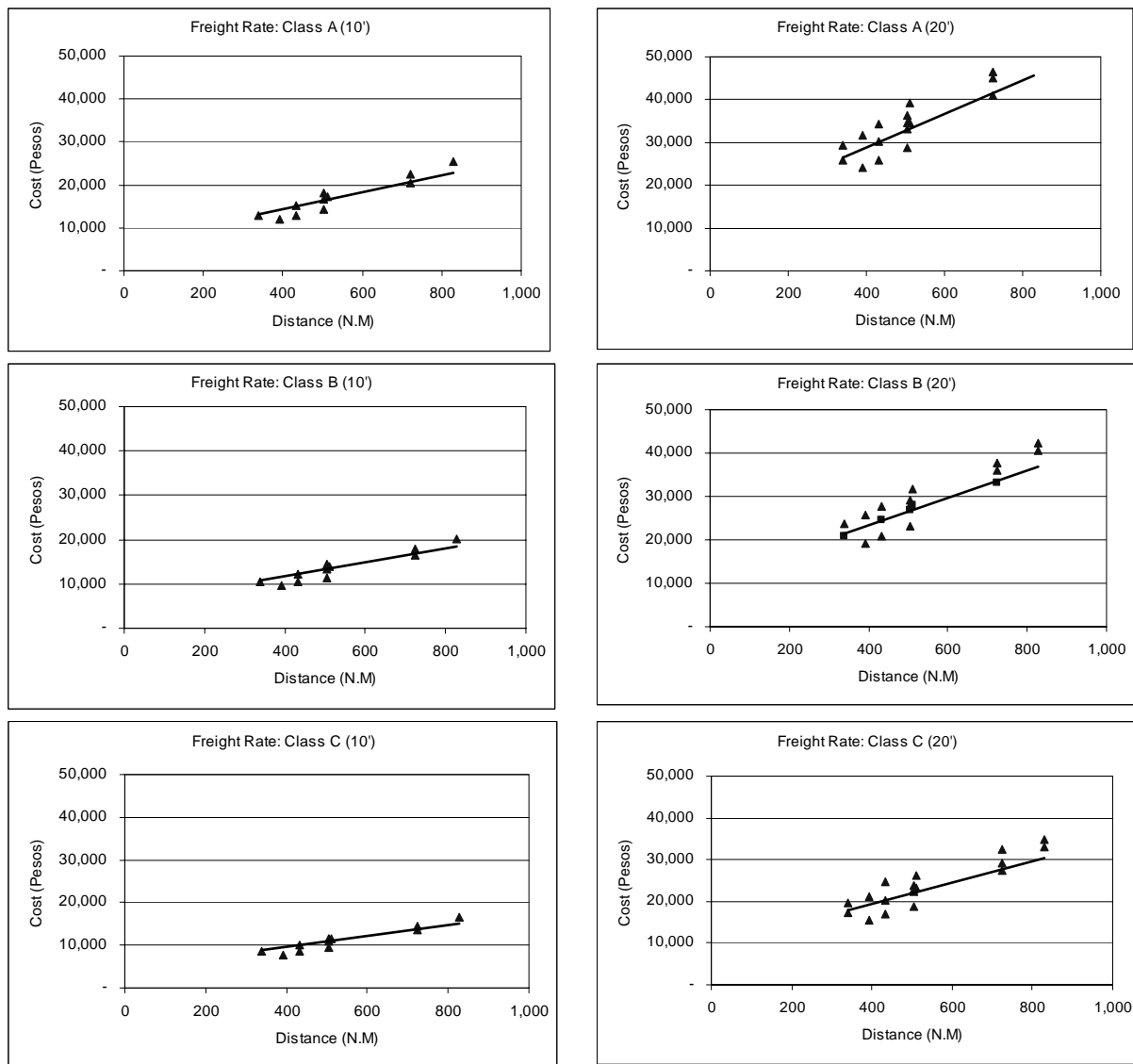
##### (1) CONTAINER SHIPPING

Figure 4.4.3 shows the relationship between container freight rates and route distance by container size. Container freight rates also vary by shipping company but it is directly proportional to route distance. Unit rate per mile decreases as route length increases.

The freight rate of 10 and 20 footer containers for Class A commodities is as follows:

- Manila – Iloilo (340N.M.) : 10' - P13,000 (P38/mile), 20' – P26,000 (P76/mile)
- Manila – Cebu (392N.M.) : 10' - P14,000 (P36/mile), 20' – P28,000 (P71/mile)
- Manila – CDO (504N.M.) : 10' - P17,000 (P34/ mile), 20' – P33,000 (P65/mile)
- Manila – Davao (829N.M.) : 10' - P 22,000 (P25/mile), 20' – P43,000 (P48/mile)

**Figure 4.4.3. Sample of Freight Rate of Container Shipping**



Source: MARINA 2003

Comparison with international and Indonesian rates, Philippine container rates are expensive as shown in the Table 4.4.3.

**Table 4.4.3. Cross Country Comparison of Container Freight Rates**

Philippines	20,000 – 30,000 P/TEU for 400 n. miles 30,000 – 40,000 P/TEU for 800 n. miles
Indonesia	2 mill. Rp or 12,000 P/TEU for 400 n. miles 3 mill. Rp or 18,000 P/TEU for 800 n. miles
International	130 – 350 US\$ or 7,000-19,000 P/TEU MNL-HK (548 n.miles) 250 – 550 US\$ or 14,000-30,000 P/TEU MNL-SNG (1,300 n.miles)

Source: Indonesia – STRAMINDO (03); Philippines – DSDP Survey (04); International – World Bank Philippine Transport Sector Review, Draft (2004)

(2) GENERAL CARGOES SHIPPING

Freight rates vary by shipping company. There is a prescribe freight rate by MARINA which was effective until RA9295 is implemented (refer to Table 3.4.3). Table 4.4.4 shows the rates for some sample routes.

**Table 4.4.4. MARINA's Prescribe Freight Rate**

Distance (N.M.)	Prescribe Freight Rate (Peso)		
	Class A	Class B	Class C
0-100	188.71 + Dist. x 1.4266	151.05 + Dist. x 1.1408	122.69 + Dist. x 0.9288
101-300	155.44 + Dist. x 1.3311	124.35 + Dist. x 1.0645	101.06 + Dist. x 0.8669
301-above	122.16 + Dist. x 1.2363	97.76 + Dist. x 0.9873	79.43 + Dist. x 0.8044

Source: MARINA 2003

**Table 4.4.5. MARINA's Prescribe Freight Rate for Sample Routes**

Route	Distance (N.M.)	Freight Rate by Commodity type (P/ton)		
		Class A	Class B	Class C
Manila – Iloilo	340	543	433	352
Manila – Cebu	392	607	485	395
Manila – CDO	504	745	595	485
Manila – Davao	829	1,147	916	746

Source: MARINA 2003

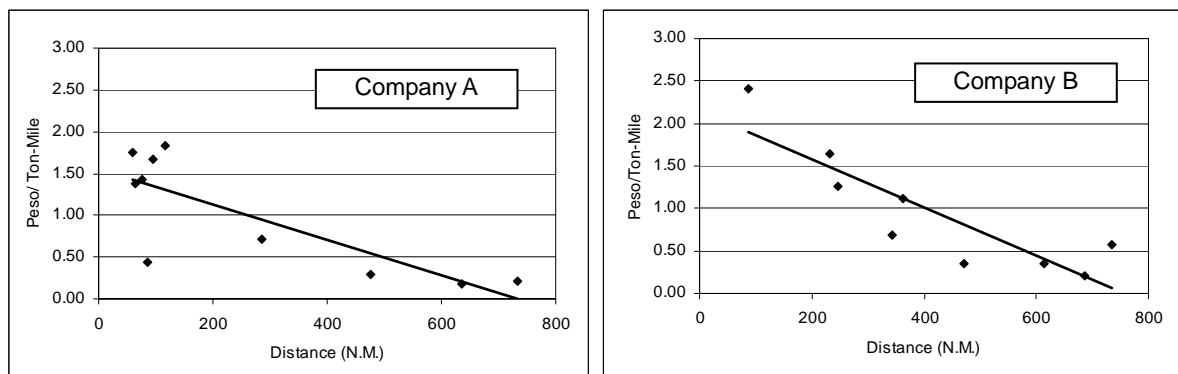
(3) TANKER SHIPPING

In inter-island transportation of petroleum, there is almost no competition between tanker shipping and other mode of transport. Required unit volume for shipping of petroleum is much more than the capacity of tank lorry. Tank lorry is more suitable for inland transport.

Tankers are usually operating as scheduled service based on transportation contract with oil companies. Therefore, it is very difficult to capture the freight rate of tanker shipping. For comparison, however, the operation and financial information of some sample tankers from two companies were analyzed as shown in Figure 4.4.4. The unit freight rate by route distance is as follows:

- Short-distance route (up 200miles) : P1.5-2.5/ton-mile
- Mid-distance route (200-400miles) : P0.5-1.5/ton-mile
- Long-distance route (over 400miles) : P0.2-0.5/ton-mile

**Figure 4.4.4. Sample of Freight Rate of Tanker Shipping**



Source: MARINA 2003