

## 7.5 Appraisal of the Project

### 7.5.1 Viability of the Project

The results of the FIRR calculation are summarized in Table 7.5.1. More details of the calculation for the infrastructure and superstructure are shown in Table 7.5.2 and 7.5.3, respectively.

**TABLE 7.5.1 Results of FIRR Calculation for the Short Term Plan**

	original	reve.10% down	cost 10% up	reve.10% down cost 10% up	weighted ave. interest rate
Infrastructure Project	5.6%	-	5.6%	-	4.8%
Superstructure Project	23.2%	19.6%	19.9%	16.3%	9.8%

Since the FIRR exceeds the weighted average interest rate in all cases of the both projects, these projects are deemed to be financially viable. Especially in the superstructure project, FIRR is much higher than the weighted average interest rate. This result is caused by the enough level of tariff and exemption of the initial investment for the infrastructure.

### 7.5.2 Financial Soundness of the Port Management Body

Projected financial statements and financial indicators for each management body are shown in Table 7.5.4 and 7.5.5.

#### (1) Profitability

The rate of return on net fixed assets exceeds the average interest rate of the funds from 2003 in the infrastructure project and 2005 in the superstructure project.

#### (2) Loan Repayment Capacity

The debt service coverage ratio exceeds 1.0 except for the term from 2009 to 2016 in the infrastructure project and from 2005 in the superstructure project. Negative cash ending caused by the above unsatisfactory results in the infrastructure project will decrease and change over to zero by cash excess in the following year by the end of the project life. This temporary cash shortage can be covered by the internal resources of the management body and will be made up by cash excess in the following year.

#### (3) Operational Efficiency

The working ratio keeps below 50% from 2005 in the infrastructure project and 2006 in the superstructure project. The operating ratio keeps below 70% from 2005 in both projects. This means that the operation will be efficient.

**TABLE 7.5.2 Result of the FIRR Calculation  
for the Infrastructure Project in the Short Term Plan**

Original Case	5.6%	
Sensitivity Analysis 1	-	Revenue 10.0%Down
Sensitivity Analysis 2	5.6%	Cost 10.0%Up
Sensitivity Analysis 3	-	Revenue 10.0%Down, Cost 10.0%Up

Unit: 1,000US\$

Year	Revenue		Cost			Revenue - Cost	Net Present Value		
	Operating Revenues	Total	Investment	Expense	Total		Revenue	Cost	Difference
2000	0	0	0	0	0	0	0	0	0
2001	0	0	43,729	91	43,820	-43,820	0	43,820	-43,820
2002	0	0	43,550	91	43,641	-43,641	0	41,327	-41,327
2003	9,098	9,098	16,924	292	17,215	-8,117	8,159	15,438	-7,279
2004	9,098	9,098	4,960	749	5,709	3,389	7,726	4,848	2,878
2005	9,098	9,098	0	1,153	1,153	7,945	7,317	927	6,390
2006	9,098	9,098	0	1,153	1,153	7,945	6,929	878	6,051
2007	9,098	9,098	0	1,153	1,153	7,945	6,561	831	5,730
2008	9,098	9,098	0	1,153	1,153	7,945	6,213	787	5,426
2009	9,098	9,098	0	1,153	1,153	7,945	5,884	746	5,138
2010	9,098	9,098	0	1,153	1,153	7,945	5,572	706	4,866
2011	9,098	9,098	0	1,153	1,153	7,945	5,277	669	4,608
2012	9,098	9,098	0	1,153	1,153	7,945	4,997	633	4,364
2013	9,098	9,098	0	1,153	1,153	7,945	4,732	600	4,132
2014	9,098	9,098	0	1,153	1,153	7,945	4,481	568	3,913
2015	9,098	9,098	0	1,153	1,153	7,945	4,243	538	3,706
2016	9,098	9,098	0	1,153	1,153	7,945	4,018	509	3,509
2017	9,098	9,098	0	1,153	1,153	7,945	3,805	482	3,323
2018	9,098	9,098	0	1,153	1,153	7,945	3,604	457	3,147
2019	9,098	9,098	0	1,153	1,153	7,945	3,413	432	2,980
2020	9,098	9,098	0	1,153	1,153	7,945	3,232	409	2,822
2021	9,098	9,098	0	1,153	1,153	7,945	3,060	388	2,673
2022	9,098	9,098	283	1,160	1,443	7,655	2,898	460	2,438
2023	9,098	9,098	0	1,153	1,153	7,945	2,744	348	2,397
2024	9,098	9,098	0	1,153	1,153	7,945	2,599	329	2,270
2025	9,098	9,098	0	1,153	1,153	7,945	2,461	312	2,149
2026	9,098	9,098	0	1,153	1,153	7,945	2,331	295	2,035
2027	9,098	9,098	0	1,153	1,153	7,945	2,207	280	1,927
2028	9,098	9,098	0	1,153	1,153	7,945	2,090	265	1,825
2029	9,098	9,098	0	1,153	1,153	7,945	1,979	251	1,728
<b>Total</b>	<b>245,649</b>	<b>245,649</b>	<b>109,446</b>	<b>30,051</b>	<b>139,496</b>	<b>106,152</b>	<b>118,532</b>	<b>118,532</b>	<b>0</b>

**TABLE 7.5.3 Result of the FIRR Calculation  
for the Superstructure Project in the Short Term Plan**

Original Case	23.2%
Sensitivity Analysis 1	19.6% Revenue 10.0%Down
Sensitivity Analysis 2	19.9% Cost 10.0%Up
Sensitivity Analysis 3	16.3% Revenue 10.0%Down, Cost 10.0%Up

Unit: 1,000US\$

Year	Revenue		Cost		Revenue - Cost	Net Present Value		Difference
	Operating Revenues	Total	Investment	Expense		Revenue	Cost	
2000	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0
2002	0	0	2,915	0	-2,915	0	2,915	-2,915
2003	0	0	47,592	9,098	-56,690	0	46,017	-46,017
2004	0	0	1,007	10,631	-11,637	0	7,668	-7,668
2005	27,501	27,501	0	13,910	13,591	14,709	7,440	7,269
2006	31,012	31,012	0	14,129	16,883	13,464	6,134	7,330
2007	34,840	34,840	0	14,349	20,491	12,279	5,057	7,222
2008	38,667	38,667	0	14,568	24,099	11,062	4,168	6,894
2009	40,486	40,486	0	14,672	25,814	9,402	3,407	5,995
2010	40,486	40,486	0	14,672	25,814	7,632	2,766	4,866
2011	40,486	40,486	2,932	14,672	22,882	6,195	2,694	3,501
2012	40,486	40,486	0	14,672	25,814	5,029	-1,822	3,206
2013	40,486	40,486	0	14,672	25,814	4,082	1,479	2,603
2014	40,486	40,486	0	14,672	25,814	3,314	1,201	2,113
2015	44,985	44,985	10,442	14,672	19,870	2,989	1,669	1,320
2016	44,985	44,985	0	14,672	30,312	2,426	791	1,635
2017	44,985	44,985	0	14,672	30,312	1,969	642	1,327
2018	44,985	44,985	15,422	14,672	14,890	1,599	1,069	529
2019	44,985	44,985	2,932	14,672	27,380	1,298	508	790
Total	599,859	599,859	83,241	238,079	278,538	97,448	97,448	-0



















#### (4) Appraisal

Based on the above indicators, it can be judged that financial soundness of the both port management bodies can be secured.

#### (Reference Data 1 - Financial Analysis for the Whole Project in One Body)

The whole project in one body including the infrastructure and superstructure development by a private sector can be financially analyzed by using the basically same prerequisites for the superstructure project as mentioned in chapter 7.3.4. Results of the analysis are shown in Table 7.5.6 to 7.5.8.

**TABLE 7.5.6 Results of the FIRR Calculation for the Whole Project in One Body**

	original	reve.10% down (Case 1)	cost 10% up (Case 2)	reve.10% down cost 10% up (Case 3)	weighted ave. interest rate
Infrastructure + Superstructure Project	12.2%	10.4%	10.60%	8.8%	10.55%

The FIRR does not exceed the weighted average interest rate in Case 1 and 3 and the debt service coverage ratios come short of 1.75 for the term from 2005 to 2013. Judging from these results, it is difficult to deem the project to be financially viable.

#### 7.5.3 Appraisal

As a result of the above analysis, both projects for the infrastructure and the superstructure turn out to be feasible. However, the whole project including the infrastructure and superstructure development by one body (private sector) is not deemed to be financially feasible according to the results of the FIRR calculation.

#### (Reference Data 2 - Financial Analysis for the Master Plan Project)

The master plan project, including the short term and long term development, is financially analyzed in the same manner as above. The results of the FIRR calculation are summarized in Table 7.5.9. More details of the calculation for the infrastructure and superstructure are shown in Table 7.5.10 and 7.5.11, respectively.

**TABLE 7.5.9 Results of FIRR Calculation for the Master Plan**

	original	reve.10% down	cost 10% up	reve.10% down cost 10% up	weighted ave. interest rate
Infrastructure Project	4.83%	-	4.83%	-	4.78%
Superstructure Project	23.1%	20.2%	20.5%	17.8%	9.5%

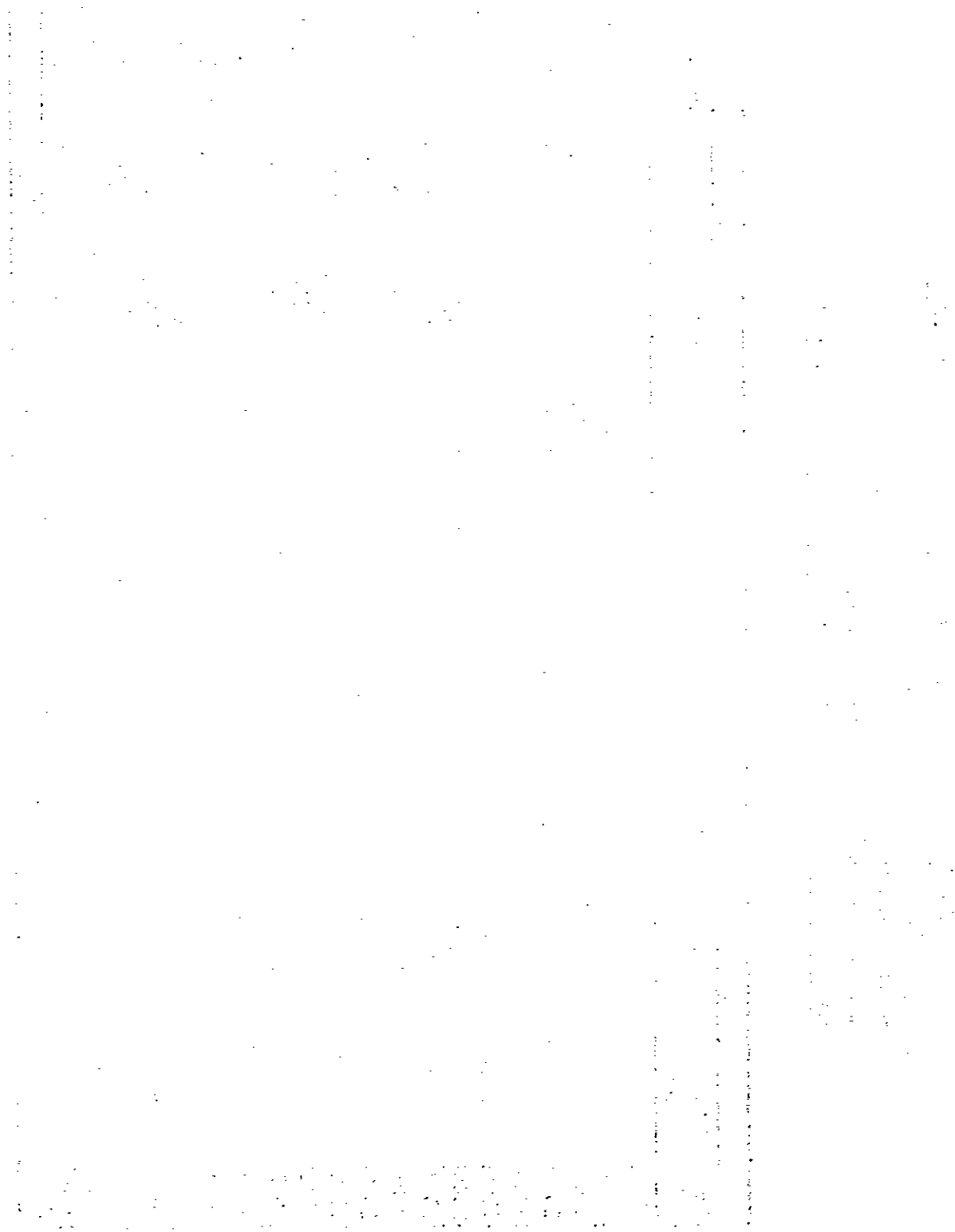
Since FIRR exceeds the weighted average interest rate in all cases of the both projects, these projects are deemed to be financially viable.

Projected financial statements and financial indicators for each management body are shown in Table 7.5.12 and 7.5.13. Judging from the financial indicators, financial soundness of the both port management bodies can be secured as a whole in the master plan project as well.

**TABLE 7.5.7 Results of the FIRR Calculation  
for the Whole Project in One Body in the Short Term Plan**

Year	Revenue		Investment	Cost		Total	Revenue - Cost	Net Present Value		Difference
	Operating Revenues	Total		Expense	Total			Revenue	Cost	
2000	0	0	0	0	0	0	0	0	0	0
2001	0	0	43,729	108	43,838	43,838	-43,838	0	43,838	-43,838
2002	0	0	46,465	108	46,573	46,573	-46,573	0	41,500	-41,500
2003	0	0	64,515	299	64,814	64,814	-64,814	0	51,464	-51,464
2004	0	0	5,966	2,288	8,254	8,254	-8,254	0	5,840	-5,840
2005	27,501	27,501	0	5,969	5,969	5,969	21,532	17,338	3,763	13,575
2006	31,012	31,012	0	6,188	6,188	6,188	24,823	17,422	3,477	13,946
2007	34,840	34,840	0	6,408	6,408	6,408	28,432	17,441	3,208	14,233
2008	38,667	38,667	0	6,627	6,627	6,627	32,040	17,248	2,956	14,292
2009	40,486	40,486	0	6,731	6,731	6,731	33,755	16,093	2,676	13,417
2010	40,486	40,486	0	6,731	6,731	6,731	33,755	14,340	2,384	11,956
2011	40,486	40,486	2,932	6,731	9,663	9,663	30,823	12,778	3,050	9,728
2012	40,486	40,486	0	6,731	6,731	6,731	33,755	11,386	1,893	9,493
2013	40,486	40,486	0	6,731	6,731	6,731	33,755	10,146	1,687	8,459
2014	40,486	40,486	0	6,731	6,731	6,731	33,755	9,041	1,503	7,538
2015	44,985	44,985	10,442	6,731	17,174	17,174	27,811	8,951	3,417	5,534
2016	44,985	44,985	0	6,731	6,731	6,731	38,253	7,976	1,194	6,783
2017	44,985	44,985	0	6,731	6,731	6,731	38,253	7,107	1,064	6,044
2018	44,985	44,985	15,422	6,731	22,154	22,154	22,831	6,333	3,119	3,214
2019	44,985	44,985	2,932	6,731	9,663	9,663	35,321	5,643	1,212	4,431
Total	599,859	599,859	192,404	102,041	294,446	294,446	305,414	179,244	179,244	-0

Unit: 1,000US\$















**TABLE 7.5.10 Result of the FIRR Calculation  
for the Infrastructure Project in the Master Plan**

Original Case	4.83%	
Sensitivity Analysis 1	-	Revenue 10.0% Down
Sensitivity Analysis 2	4.83%	Cost 10.0% Up
Sensitivity Analysis 3	-	Revenue 10.0% Down, Cost 10.0% Up

Unit: 1,000US\$

Year	Revenue		Cost			Revenue - Cost	Net Present Value		
	Operating Revenues	Total	Investment	Expense	Total		Revenue	Cost	Difference
2000	0	0	0	0	0	0	0	0	0
2001	0	0	43,729	91	43,820	-43,820	0	43,820	-43,820
2002	0	0	43,550	91	43,641	-43,641	0	41,630	-41,630
2003	9,098	9,098	16,924	292	17,215	-8,117	8,279	15,666	-7,386
2004	9,098	9,098	4,960	749	5,709	3,389	7,898	4,956	2,942
2005	9,098	9,098	0	1,153	1,153	7,945	7,534	955	6,579
2006	9,098	9,098	0	1,153	1,153	7,945	7,187	911	6,276
2007	9,098	9,098	21,825	1,187	23,012	-13,914	6,856	17,340	-10,485
2008	9,098	9,098	17,376	1,179	18,555	-9,457	6,540	13,338	-6,798
2009	9,098	9,098	27,483	1,206	28,694	-19,595	6,239	19,676	-13,437
2010	11,839	11,839	12,362	1,831	14,193	-2,354	7,744	9,284	-1,540
2011	14,118	14,118	12,559	2,023	14,882	-764	8,810	9,286	-477
2012	14,118	14,118	12,637	2,023	14,660	-542	8,404	8,726	-322
2013	16,170	16,170	9,139	2,016	11,154	5,016	9,182	6,334	2,848
2014	17,050	17,050	5,484	2,457	7,940	9,109	9,236	4,304	4,934
2015	18,531	18,531	0	2,894	2,894	15,637	9,576	1,495	8,080
2016	18,531	18,531	0	2,894	2,894	15,637	9,134	1,427	7,708
2017	18,531	18,531	0	2,894	2,894	15,637	8,714	1,361	7,353
2018	18,531	18,531	0	2,894	2,894	15,637	8,312	1,298	7,014
2019	18,531	18,531	0	2,894	2,894	15,637	7,929	1,238	6,691
2020	18,531	18,531	0	2,894	2,894	15,637	7,564	1,181	6,383
2021	18,531	18,531	0	2,894	2,894	15,637	7,216	1,127	6,089
2022	18,531	18,531	283	2,902	3,184	15,347	6,883	1,183	5,700
2023	18,531	18,531	0	2,894	2,894	15,637	6,566	1,025	5,541
2024	18,531	18,531	0	2,894	2,894	15,637	6,264	978	5,285
2025	18,531	18,531	0	2,894	2,894	15,637	5,975	933	5,042
2026	18,531	18,531	0	2,894	2,894	15,637	5,700	890	4,810
2027	18,531	18,531	2,970	2,913	5,883	12,648	5,437	1,726	3,711
2028	18,531	18,531	2,970	2,913	5,883	12,648	5,187	1,647	3,540
2029	18,531	18,531	2,970	2,913	5,883	12,648	4,948	1,571	3,377
2030	10,586	10,586	0	2,894	2,894	7,692	2,696	737	1,959
2031	10,586	10,586	0	2,894	2,894	7,692	2,572	703	1,869
2032	10,586	10,586	0	2,894	2,894	7,692	2,454	671	1,783
2033	10,586	10,586	0	2,894	2,894	7,692	2,341	640	1,701
2034	10,586	10,586	0	2,894	2,894	7,692	2,233	610	1,622
2035	10,586	10,586	0	2,894	2,894	7,692	2,130	582	1,545
2036	10,586	10,586	0	2,894	2,894	7,692	2,032	555	1,476
2037	10,586	10,586	0	2,894	2,894	7,692	1,938	530	1,408
2038	10,586	10,586	0	2,894	2,894	7,692	1,849	505	1,343
2039	10,586	10,586	0	2,894	2,894	7,692	1,764	482	1,282
Total	520,816	520,816	237,524	89,867	327,392	193,424	221,321	221,321	-0

**TABLE 7.5.11 Result of the FIRR Calculation  
for the Superstructure Project in the Master Plan**

Original Case	23.1%	
Sensitivity Analysis 1	20.2%	Revenue 10.0% Down
Sensitivity Analysis 2	20.5%	Cost 10.0% Up
Sensitivity Analysis 3	17.8%	Revenue 10.0% Down, Cost 10.0% Up

Unit: 1,000US\$

Year	Revenue		Cost			Revenue - Cost	Net Present Value		
	Operating Revenues	Total	Investment	Expense	Total		Revenue	Cost	Difference
2000	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0
2002	0	0	2,915	0	2,915	-2,915	0	2,915	-2,915
2003	0	0	47,592	9,098	56,690	-56,690	0	46,041	-46,041
2004	0	0	1,007	10,631	11,637	-11,637	0	7,676	-7,676
2005	27,501	27,501	0	13,910	13,910	13,591	14,732	7,451	7,280
2006	31,012	31,012	0	14,129	14,129	16,883	13,492	6,147	7,345
2007	34,840	34,840	0	14,349	14,349	20,491	12,310	5,070	7,240
2008	38,667	38,667	0	14,568	14,568	24,099	11,096	4,180	6,916
2009	40,486	40,486	43,320	14,672	57,993	-17,506	9,435	13,515	-4,080
2010	40,486	40,486	40,385	18,883	59,268	-18,782	7,663	11,218	-3,555
2011	40,486	40,486	2,932	22,778	25,710	14,776	6,224	3,952	2,271
2012	40,486	40,486	30,608	22,778	53,386	-12,900	5,054	6,665	-1,610
2013	40,486	40,486	12,474	26,044	38,518	1,968	4,105	3,905	200
2014	40,486	40,486	0	27,423	27,423	13,063	3,334	2,258	1,076
2015	139,482	139,482	10,442	34,737	45,179	94,302	9,328	3,021	6,307
2016	139,482	139,482	0	34,737	34,737	104,745	7,576	1,887	5,689
2017	139,482	139,482	3,205	34,737	37,942	101,540	6,153	1,674	4,479
2018	139,482	139,482	16,299	34,737	51,036	88,446	4,997	1,828	3,169
2019	139,482	139,482	2,932	34,737	37,669	101,813	4,058	1,096	2,962
2020	139,482	139,482	585	34,737	35,322	104,159	3,296	835	2,461
2021	139,482	139,482	11,449	34,737	46,186	93,296	2,677	886	1,790
2022	139,482	139,482	0	34,737	34,737	104,745	2,174	541	1,633
2023	139,482	139,482	5,748	34,737	40,484	98,997	1,766	512	1,253
2024	139,482	139,482	15,422	34,737	50,159	89,322	1,434	516	918
2025	139,482	139,482	3,205	34,737	37,942	101,540	1,165	317	848
2026	139,482	139,482	1,096	34,737	35,833	103,648	946	243	703
2027	139,482	139,482	14,309	34,737	49,046	90,436	768	270	498
2028	139,482	139,482	1,833	34,737	36,570	102,912	624	164	460
2029	139,482	139,482	330	34,737	35,067	104,415	507	127	379
Total	2,467,161	2,467,161	268,088	730,318	998,406	1,468,755	134,911	134,911	0



















## **8. Conclusion and Recommendation**

### **8.1. Conclusion**

#### **(Findings on the present ports)**

Owing to the economic growth in Turkey and international containerization, container cargo throughput at the several ports in the Sea of Marmara have rapidly increased since 1990 and reached 300,000 TEUs in 1995. Ports at the Sea of Marmara are required to develop competitive container terminals with enough capacity, deeper berths, efficient productivity and quality services.

#### **(International Transport Environment)**

According to the possible scenarios in terms of Turkey's economy, Eastern Europe and CIS's economy and the relationship between Turkey and EU, international trade, maritime cargo movement and container throughput were estimated. Export and import of Turkey increase by 8.4% and 6.7% respectively in the medium case. The container throughput of Turkey in 2015 is 6.4 million TEU in the medium case and the projected container throughput handling in the Black Sea ports excluding Turkey in 2015 is 850 thousand TEU.

#### **(Bottlenecks)**

The biggest and aged port, Haydarpaşa which is located in the center of Istanbul and has no expansion room is seriously congested with many waiting vessels. In addition, the trucks generated from the port have been causing traffic jams on the road surrounding the port.

Consequently, many bottlenecks are identified to develop a modern container port such as 1)insufficient container yards; 2)lack of container berth; 3)poor cargo handling equipment; 4)curved fairway and narrow entrance; and so forth. Operational problems of the port are recognized such as 5)productivity of cargo handling; 6)customs clearance procedure.

One of the most serious problems of container handling facilities in the region of Izmit is that the facilities tend to sprawl along the bay in a small size. Small scale terminal is difficult to equip with large scale and modern equipment with high efficiency, thus it can not be competitive with the ports in the neighboring country and can hardly attract mother vessels. This forever relegates the status of the port to that of feeder port. This

would affect the national economy through high transportation cost.

**(Demand Forecast for Marmara Ports)**

The forecast total Turkish cargo volume in 2005 and 2015 become 1.75 times and 3.1 times of 1995, and cargo volumes are 21 million tons and 37 million tons. Marmara sea ports forecast cargo volume of 2005 and 2015 are 2.2 times and 4.1 times of 1995. Marmara sea ports hinterland is divided into four independent hinterland areas. Container cargo projection volume of Thrace area of 2005 and 2015 is 270 thousands and 580 thousands TEU respectively.

**(Cargo Handling Capacity of Marmara Ports)**

At Izmit area, container cargo will be handled at Haydarpaşa, Derince, Gemlik (GEMPORT), and other private port such as BELDE and SEDEF. Shortage of container handling capacity is about 433,000 TEU. This amount shall be handled by the new container terminal built at Derince or another place.

At Thrace area, container handling capacity of existing port is about 50,000 TEU. Shortage of container handling capacity is about 638,000 TEU including transshipment containers. This amount shall be handled by the new container terminal in the New port. There is a large cargo demand for dry bulk cargo. Dry bulk cargo shall be handled by existing ports and also the New port.

At Balıkesir area, Bandırma port will handle all demand of this area including container cargo utilizing the new container terminal and extended berth for bulk cargo. At Canakkale area, Gelibolu port and Canakkale port can handle all demand of this area.

**(Necessity of Port Development)**

Cargo handling capacity in Thrace and Izmit regions will not be sufficient for the cargo volume in 2015. Though container cargo demand in Izmit will be larger than that in Thrace, container cargo volume of 638,000 TEUs in Thrace and 433,000 TEUs in Izmit will exceed the capacity of ports respectively. To handle the cargo, it is necessary to increase the capacity of ports in Thrace and Izmit regions by 2015.

**(Site Selection for New Port in Thrace)**

Two places in Thrace region, Tekirdağ port and Military owned coastal area were examined as the site for new port construction. Military owned coastal area is superior as a site for the new port in terms of space for a new port, room for future extension,



environmental affect and settlement for access road.

(Master Plan of Marmara Ports for 2015)

Master plan for container terminals is as follows;

<b>Principle for Container Terminal Arrangement</b>		
<b>Region</b>	<b>Container Demand in 2015 (TEU)</b>	<b>Principle for Arrangement of Container Terminal</b>
Izmit	1,342,000	<input type="checkbox"/> Improvement of Haydarpasa port <input type="checkbox"/> Practical use of existing and under-construction private ports <input type="checkbox"/> <i>Construction of Derince new container terminal</i>
Thrace	688,000	<input type="checkbox"/> Construction of a new container port <input type="checkbox"/> Practical use of an existing private ports
Balkesir	127,000	<input type="checkbox"/> Improvement at the depth of Bandirma port
Canakkale	20,000	<input type="checkbox"/> Use of new pier of Canakkale port

*Note: Arrangement with Italic will be commenced after 2005.*

The most urgent matter in the master plan is to increase container cargo handling capacity, priority should be given to the followings;

- (1)Improvement of Haydarpasa container terminal
- (2)Construction of new container port in Thrace region
- (3)Conversion to container terminal at Bandirma port

(Demand Forecast for the New Port)

The cargo throughput in 2015 is 638,000TEU of container and 5,880,000 tons of bulk and general cargo. Out of 638,000TEU, 108,000TEU is transshipment container cargo.

(Requirements of the New Port)

The new port should comply with the following requirements with a view to consolidating the position as a competitive container port.

- (1)To developed as the largest commercial port in the Thrace region for public infrastructure and distribution center in the region and nation and as a complementary port to Haydarpasa Port.

- (2) To comply with an urgent need for increasing the capacity of container.
- (3) To enable the port to accommodate Panamax ship of 50,000DWT class container vessel with capacity of 3,000TEU.
- (4) To be flexible to cope with future demand and to secure sufficient room for future expansion.
- (5) Not to deal with passenger.
- (6) To mitigate adverse effects on the environment.

**(Master Plan of the New Port for 2015)**

The new port will developed as the largest commercial port in the Thrace region and a complementary port to Haydarpasa port. The total project cost is approximately US\$ 400 million, of which US\$ 146 million represents cargo handling equipment. Master plan of the new port for 2015 is as follows;

<b>Master Plan of New Port</b>		
<b>Facilities</b>	<b>Container Terminal</b>	<b>Bulk &amp; General cargo Terminal</b>
Terminal Area	44 ha	50 ha
Berths	3 (d: 12~14m)	7 (d: 7.7~12m)
Handling Capacity	640,000 TEUs	6.6 mil. tons
Quaywall/Revetment	2,940 m	3,280 m
Breakwater	700 m	100 m
Reclamation	7.8 million m <sup>3</sup>	4.5 million m <sup>3</sup>
Storage Capacity	18,620 TEU	350,000 m <sup>2</sup>
Cargo Handling Facilities	Gantry Crane 6 Transfer Crane 20 CFS 10,000 m <sup>2</sup>	Grain Silo 45,000 tons Shore Crane 12

*Note: d = berth depth.*

**(Short-term Development Plan)**

The proposed project for the short-term development plan is as follows;

- 1) Container terminal
  - Berth 2 (berth depth = 12 m)
  - Terminal Area 34.5 ha
  - Capacity 320,000 TEUs
  - Estimated Coast US\$ 64.7 million
- 2) Breakwater US\$ 3.0 million

3)Revetment	US\$ 64.2 million
4)Dock road including causeway	US\$ 3.8 million
5)Inner harbor	US\$ 5.6 million
6)Other	US\$ 18.2 million

Number of ground slot in the container yard is 3,588. As container handling facilities, three(3) gantry cranes and ten(10) transfer cranes are installed.

#### (Implementation Plan)

Main port facilities for short-term development plan consist of -12m container berths, container yard, small ship berth, causeway, temporary dock-road, revetment and improvement of crossing of existing road., etc. These facilities may be able to construct with local labor, local available equipment and materials due to without complexity.

#### (Cost Estimate)

Total project cost for the short-term development plan amounts to US\$160 million, of which US\$61 million represents the foreign currency component. Of the total project cost, US\$59 million would go for the container berth and container yard with the breakdown into cargo handling equipment amounting to US\$32 million civil works amounting to US\$26 million..

#### (Management and Operation)

Public sector should administer the new port from the viewpoint of people's welfare according to its master plan. For this purpose, construction of infrastructure must be performed by public sector and ownership of the land should be retained by public sector, while construction of the terminal including the superstructure and pavement, and its operation is recommended to be performed by private sector in order to encourage efficient cargo handling.

#### (Economic Analysis)

The EIRR of the long-term development plan 18.7 %. The EIRR for the short-term development plan results is 15.7 %. Both development plan have sufficient viability. Even the worst case, where the project cost is assumed to increase by 10 % and the benefit reduced by 10 %, the EIRR for the short-term development plan is 12.6 %. These values exceed the opportunity cost of capital and the EIRR is still in a feasible range. This development project is viable from the viewpoint of national economy.

#### (Financial Analysis)

FIRR is assessed at 5.6% in the infrastructure project and 26.0% in the superstructure project. Due to the sufficiently high tariff and exemption of the initial investment for the infrastructure, the superstructure project especially turns out to be very feasible. After conducting a sensitivity analysis, the FIRRs are still in a feasible range.

The indicators which show the financial soundness of each of the port management bodies are on appropriate levels, except for the one which shows "Loan Repayment Capacity" in the infrastructure project for the term from 2009 to 2016. However, since temporary cash shortage caused by this unsatisfactory result will be made up by cash excess in the following year, it can be judged that financial soundness of both management bodies can be secured, based on the assumption that the temporary cash shortage can be covered by the internal resources of the management body.

#### (EIA)

Field surveys covered currents, water pollution, shoreline configuration, sediment contamination, air pollution, terrestrial flora and fauna, aquatic species and fishing activity, and cultural assets. Biological survey showed that the projects area is rather poor in term of the biological abundance.

Initial environmental examination is adopted to study changes in currents pattern, impacts on water quality, coastal hydrology, traffic load on access road, air pollution, cultural aspects, visual impacts, and effects on flora and fauna. To assess the impacts of the port development, wind induced currents and the dispersion of water pollution and shoreline configuration are identified by means of computer simulation. Adverse effects on air pollution and marine/aquatic species are also studied. As a result no significant adverse effect is shown in the preliminary EIA.

#### (Overall Evaluation of the Project)

As one of the most important elements to develop ports in the Marmara area in consistent with the economic growth of the region, a new port have been proposed to be constructed at the military owned coastal area in the Thrace region with improvement plans at other ports in the Marmara region. No other feasible site than the site chosen could not be found and the site was practically the best choice. The development of the new port have been clarified to be feasible from technical, economical, financial and environmental aspects. One of the superior points of the plan is that it has a enormous room for future expansion. In order to secure the future expansion works, it is very important that the

public sector controls the port infrastructure like land, revetments, breakwater so on. Moreover since the construction of such port infrastructure needs a large amount of investment and it requires a long period to call in the invested resources by the operation, the public sector itself is also financially recommended to invest and possess the infrastructures.

## **8.2. Recommendation**

With a view to securing successful realization of the proposed port development schemes under efficient port management and operation, timely actions on the part of the Government of Turkey is recommended as follows.

### **(Preparation of Port Statistics)**

During our study, we encountered problems in port planning. Specifically, it was very difficult to gather statistics on cargo handled at ports and data concerning existing port facilities, especially those pertaining to private port facilities. Ports continuously grow and develop, in line with the national economy. Therefore, it is very important to develop ports based on long term development plans that contain the most accurate forecasts of future events as possible. The above mentioned information is fundamental in making a port development plan. It is strongly recommended to consolidate legal and institutional frame for obtaining and maintaining these statistics.

### **(Formulation of National Long Term Port Development Plan)**

It was observed that small scale private ports had been established or were going to be constructed. Especially for a container port, which is a capital-intensive industry where scale merit can be expected in terms of efficiency, this trend would have a deleterious effect on the international port competition and finally on the national economy. Turkish government is recommended to draft a long term port development master plan authorized as national plan and to examine strictly any application for port development from the private sector whether it is consistent with the master plan or not, so that a sprawl of container terminals will not occur.

### **(Guidance to the private sector in Marmara area)**

Since the master plan for ports development in Marmara area has been prepared and a new port is proposed to be constructed to fulfill the requirement of the master plan, it is important that the government of Turkey is recommended to induce private sector not to attempt to construct any small scale container terminal within the same hinterland as the new port. Small scale and inefficient container terminal, in general, never can compete against one which has a large scale and more efficient. A large scale and efficient terminal attracts more ship services and more frequent ship services are more convenient for the exporter or consignee. To attempt constructing any small scale terminal is quite possible to turns out unsuccessful. It means such attempt could be a waste of resources and unnecessary environmental disturbance. These national loss should be avoided before

hand.

#### **(Review of Industrial Development Plan in Thrace)**

As described in chapter 2, part 1, in Thrace region, some official industrial installation plans exist. But those industrialization plans in Thrace Region are planned without considering the new port. If the new port project goes forward, it is recommended that those plans be reviewed. The Free Trade Zone, in particular, is worthy of consideration and it is recommended that some FTZs be planned along the access road to the port. Though it can not be said that Thrace region, where the new port is planned, is highly developed, the region is blessed with favorable conditions and has high potential even in the present situation. For instance, the highway route No.E80 leads to Europe and the international airport connects the region to the world. If the new port comes into operation, the region will be fully fitted out with air, land and sea transportation. Moreover the region is in the vicinity of the biggest consumption area of Turkey, Istanbul.

#### **(Practical Use of Port Hydraulic Research Center)**

The configuration of the port plan proposed in this report is unprecedented in Turkey. Based on Japanese experience, serious technical problems are not anticipated, however, it is desirable to conduct some experimental and numerical model simulation studies. But as such studies are beyond the scope of the study, it is recommended that some experimental studies and numerical model simulation studies be conducted by utilizing the Port Hydraulic Research Center newly completed under the Japanese Technical Cooperation by JICA. The themes recommended to be studied are as follows.

(1) the relation between the calmness in front of berths and the length of the breakwater. The sea depth where the breakwater is constructed is rather great and construction cost of the breakwater is high. Therefore the minimum length of the breakwater should be decided through a careful experimental study.

(2) the relation between the crown height of the revetment and the magnitude of the wave overtopping, especially at the corner connecting the revetment and breakwater. Because the revetment is constructed at rather deep sea and wave energy would be larger and also the crown height of the revetment considerably effects to the total investment, even liner part of the revetment is also recommended to confirm whether the crown height of the revetment is appropriate or not through the experimental study.

(3) stability of rubble mound in breakwater and revetment. Because the stability of

breakwater and revetment are indispensable to port function. It is also recommended to confirm whether the weight of armoring stones of sloping breakwater and revetment is appropriate or not through the experimental study.

(4)sea current estimation. One of the merits of the configuration proposed is that the sea current along the seashore would not greatly affect the area, then the environmental impact would be minimum. It is recommended to confirm the configuration's effect on the sea current.

(5)in connection with the above, it is necessary to study the sand drift phenomena such as seashore erosion and siltation of channel and basin, as well as countermeasures, if necessary.

#### **(Participation of Private Sectors)**

Port is a basic infrastructure in a public water area for a nation's imports and exports so that the public sector should administer the port from the viewpoint of people's welfare according to its master plan. However, commercial activities related to the port are basically supported by private sectors in the field of terminal operations, stevedoring, harbour services and other ancillary services. Therefore, participation of the private sectors in these fields needs to be encouraged under the administration of public sector(DLH).

Based on this concept of public port, for the new terminal, public sector(DLH) should provide only basic port infrastructures and invite the private sector to build superstructures and to operate its own terminal though ownership of the land would be retained by public sector(DLH). Introduction of private operators into terminal operation will encourage efficient cargo handling.

#### **(Port Authority)**

In order to develop and operate ports properly, it is recommended that an port authority as a port managing body be established for each port in Turkey. The relevant municipality might participate in the authority.

#### **(Simplification and Modernization of Procedures and Documentation)**

In order not only to develop trade in this country but also to establish efficient container transport operations, it is strongly recommended that the procedures and documentation required for container transport be simplified and modernized, in cooperation with all concerned organizations by extending the present computer system in



TCDD ports.

Especially to reduce the long waiting time of containers in the new port and secure smooth door to door transportation, relevant customs law and legislation should be changed and customs clearance in which empty containers are taxed needs to be simplified.

**(Port Sales)**

Since the new port is located somewhat far from Istanbul which is the major consumer city in its hinterland, port promotion activities are one of the most important factors to attract port users and to secure adequate level of revenue. In order to accomplish this aim, effective actions such as establishment of port promotion strategy focusing on the most effective target groups or clients and active appeals in getting their understanding on real merits of utilizing the new port are recommended.

**(Establishment of Competitive Port Tariff)**

In addition to streamlining cargo handling and installing proper port facilities, to conquer the above mentioned locational disadvantage and the customary commercial practices which ignore rational economic principles and to attract mother container vessel and survive the heated competition between container ports in the East Mediterranean Sea and the Black Sea, port tariff of the new port should be competitive. Especially, the tariff for the transshipment cargo, which is comparatively higher than that in major hub ports, should be discounted as much as possible so as to be competitive with the surrounding transshipment ports. According to the financial analysis, port tariff can be lowered to some extent.

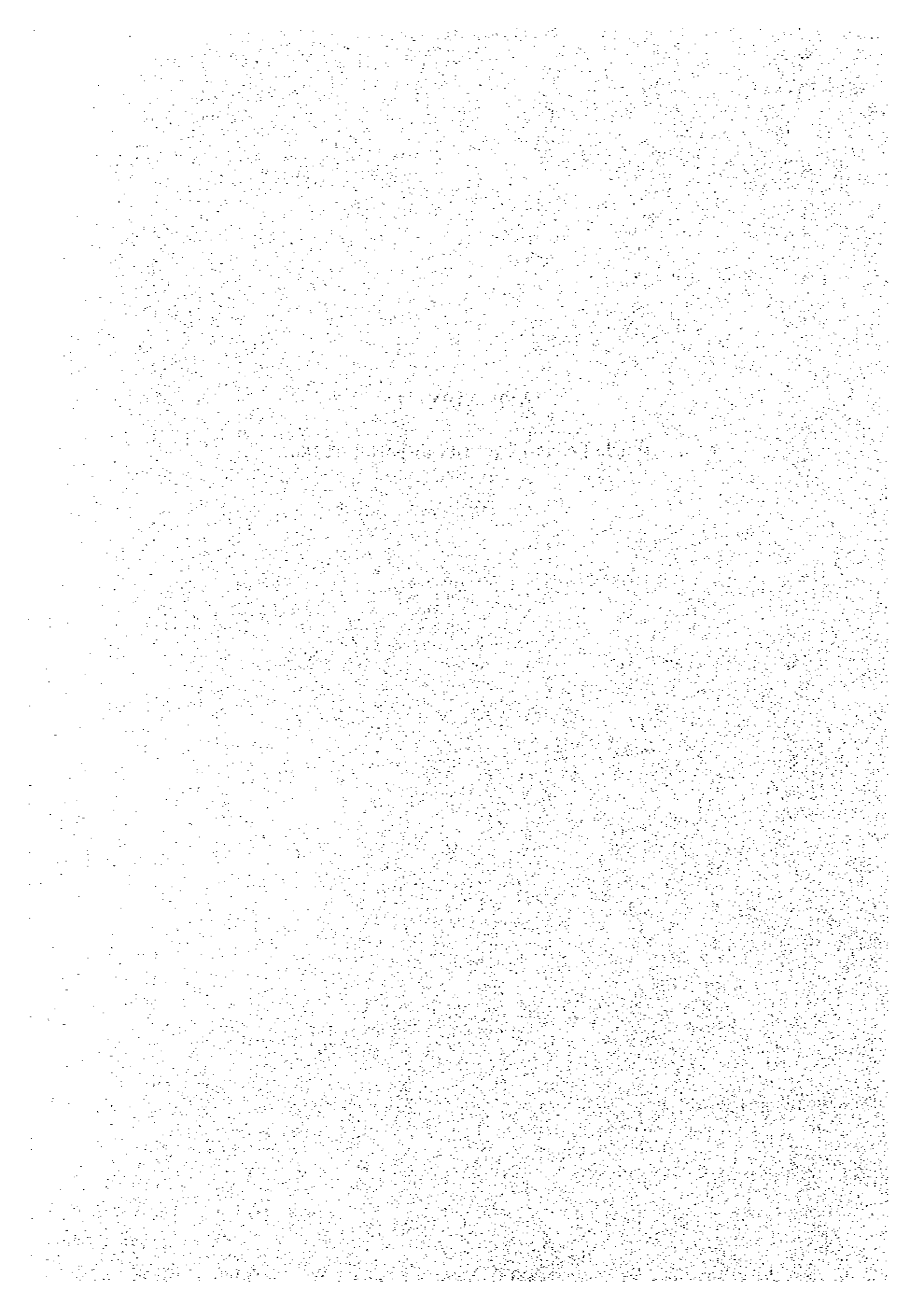
**(Financial Arrangement)**

Timely implementation of the project is crucial to relieve congestion of existing container terminals such as Haydarpasa of Istanbul. It is strongly recommended for DLH to begin making preparations and financial arrangements for the implementation of short-term development plan of the project immediately after the present feasibility study.



## **APPENDIX 1**

### **World Economic and Transportation Data**



APPENDIX World Economic & Transportation Data

TABLE A 1.1 GDP of the Area 1975-2015

Billion US\$ at 1990 prices		World	Frm. US SR	Bulgaria	Romania	Other E.Eu	Greece	Italy	Spain	Other W.Eu	Israel	Cyprus	Syrian, A.R.	Turkey	Other Asia	Egypt	Tunisia	Algeria	Morocco	Other Af.	America	Oceania
1975	13114	589	0	27	87	57	697	335	3749	21	2	8	81	2403	13	6	34	13	255	4728	223	
1980	15759	731	16	40	115	70	880	366	4308	30	3	12	91	3022	22	9	45	18	335	5647	252	
1985	17888	865	19	46	116	75	943	395	4672	29	2	13	115	3648	31	11	59	21	320	6330	294	
1990	21020	948	21	38	135	82	1095	492	5409	49	4	14	151	4611	35	12	60	26	380	7206	340	
1991	21176	838	18	33	131	85	1108	503	5457	52	4	16	152	4826	36	13	59	27	382	7211	334	
1992	21443	678	17	29	125	85	1164	506	5517	56	4	17	161	4991	36	14	60	26	382	7383	343	
1993	21795	602	16	22	125	84	1103	501	5495	57	4	17	174	4748	36	14	52	26	387	7632	352	
1994	22101	518	16	30	130	85	1127	511	5660	61	4	18	165	4910	38	15	59	29	397	7954	375	
1995	22737	492	17	32	137	87	1164	526	5830	65	5	18	176	5081	38	15	58	32	408	8166	388	
<b>High Growth Case</b>																						
2005	30383	661	27	52	223	106	1505	674	7247	113	8	25	350	7594	67	23	79	48	513	10556	512	
2015	41033	978	44	85	364	129	1946	862	9009	197	13	35	728	11350	116	34	109	71	644	13645	674	
<b>Medium Growth Case 1</b>																						
2005	30350	661	27	52	223	106	1505	674	7247	113	8	25	317	7594	67	23	79	48	513	10556	512	
2015	40889	978	44	85	364	129	1946	862	9009	197	13	35	584	11350	116	34	109	71	644	13645	674	
<b>Medium Growth Case 2</b>																						
2005	30227	571	24	47	199	106	1505	674	7247	113	8	25	317	7594	67	23	79	48	513	10556	512	
2015	40472	662	35	68	289	129	1946	862	9009	197	13	35	584	11350	116	34	109	71	644	13645	674	
<b>Low Case</b>																						
2005	30197	571	24	47	199	106	1505	674	7247	113	8	25	287	7594	67	23	79	48	513	10556	512	
2015	40356	662	35	68	289	129	1946	862	9009	197	13	35	467	11350	116	34	109	71	644	13645	674	

**TABLE A 1.2 GDP Index and Growth Rate**

	World SR	Fran.US a	Bulgari a	Romani a	Other E.Eu	Greece	Italy	Spain	Other W.Eu	Israel	Cyprus	Syrian, A.R.	Turkey	Other Asia	Egypt	Tunisia	Algeria	Moroco	Other A.C.	Americ (Ocean) a	
INDEX 1993=100																					
<b>High Growth Case</b>																					
2005	134	134	163	163	163	122	129	128	124	174	169	138	199	149	174	151	137	148	126	129	132
2015	180	199	265	265	265	149	167	164	155	303	286	191	413	223	303	228	188	219	158	167	174
<b>Medium Growth Case 1</b>																					
2005	133	134	163	163	163	122	129	128	124	174	169	138	180	149	174	151	137	148	126	129	132
2015	180	199	265	265	265	149	167	164	155	303	286	191	331	223	303	228	188	219	158	167	174
<b>Medium Growth Case 2</b>																					
2005	133	116	145	145	145	122	129	128	124	174	169	138	180	149	174	151	137	148	126	129	132
2015	178	135	211	211	211	149	167	164	155	303	286	191	331	223	303	228	188	219	158	167	174
<b>Low Case</b>																					
2005	133	116	145	145	145	122	129	128	124	174	169	138	163	149	174	151	137	148	126	129	132
2015	177	135	211	211	211	149	167	164	155	303	286	191	265	223	303	228	188	219	158	167	174
<b>GROWTH RATE (% annual)</b>																					
<b>High Growth Case</b>																					
-2005	2.94	3.00	5.00	5.00	5.00	2.00	2.60	2.50	2.20	5.70	5.40	3.30	7.10	4.10	5.70	4.20	3.20	4.00	2.30	2.60	2.80
-2015	3.00	3.50	5.00	5.00	5.00	2.00	2.60	2.50	2.20	5.70	5.40	3.30	7.35	4.10	5.70	4.20	3.20	4.00	2.30	2.60	2.80
<b>Medium Growth Case 1</b>																					
-2005	2.93	3.00	5.00	5.00	5.00	2.00	2.60	2.50	2.20	5.70	5.40	3.30	6.05	4.10	5.70	4.20	3.20	4.00	2.30	2.60	2.80
-2015	2.98	3.50	5.00	5.00	5.00	2.00	2.60	2.50	2.20	5.70	5.40	3.30	6.17	4.10	5.70	4.20	3.20	4.00	2.30	2.60	2.80
<b>Medium Growth Case 2</b>																					
-2005	2.89	1.50	3.80	3.80	3.80	2.00	2.60	2.50	2.20	5.70	5.40	3.30	6.05	4.10	5.70	4.20	3.20	4.00	2.30	2.60	2.80
-2015	2.93	1.50	3.80	3.80	3.80	2.00	2.60	2.50	2.20	5.70	5.40	3.30	6.17	4.10	5.70	4.20	3.20	4.00	2.30	2.60	2.80
<b>Low Case</b>																					
-2005	2.88	1.50	3.80	3.80	3.80	2.00	2.60	2.50	2.20	5.70	5.40	3.30	5.00	4.10	5.70	4.20	3.20	4.00	2.30	2.60	2.80
-2015	2.91	1.50	3.80	3.80	3.80	2.00	2.60	2.50	2.20	5.70	5.40	3.30	5.00	4.10	5.70	4.20	3.20	4.00	2.30	2.60	2.80

**TABLE A 1.3 Export Value of the Area 1975-2015**

Billion US\$ at 1990 price		World	U.S.	Latin America	Romania	Other E.Eu	Greece	Italy	Spain	Other W.Eu	Israel	Cyprus	Syrian, A.R.	Turkey	Other Asia	Egypt	Tunisia	Algeria	Morocco	Other Africa	America	Oceania	
Year	SR	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	
1975	1801.1	68.4	13.6	15.5	71.7	3.7	83.5	14.5	680.4	2.8	0.2	2.4	2.7	362.9	2.1	1.7	11.0	2.1	25.3	331.4	25.4		
1980	2297.5	87.9	18.9	20.8	73.9	5.7	109.9	26.9	917.2	5.9	0.5	2.0	3.4	549.6	2.8	2.1	11.7	3.1	61.8	447.8	32.0		
1985	2587.8	116.7	19.8	15.1	46.2	6.9	134.5	42.0	1083.8	7.8	0.6	1.7	13.0	578.5	1.9	1.9	8.6	3.2	48.1	454.3	41.1		
1990	3437.4	104.2	13.3	5.9	35.9	8.1	170.4	55.6	1385.9	12.1	0.9	4.1	12.9	837.8	2.6	3.5	13.3	4.3	61.6	627.9	50.1		
1991	3512.8	47.5	3.9	4.2	36.7	9.1	170.6	61.7	1390.1	12.0	1.0	3.4	13.9	892.1	3.9	4.0	13.9	4.4	59.9	663.9	57.6		
1992	3719.5	51.0	4.2	4.3	35.3	9.8	176.7	64.7	1439.8	12.8	1.0	3.4	15.4	956.4	3.4	4.3	12.5	4.1	62.0	710.6	60.8		
1993	3870.2	60.4	3.8	4.8	39.5	9.8	184.1	77.8	1484.2	13.5	0.9	4.1	17.4	1037.4	2.8	4.2	12.6	4.1	65.2	777.8	65.7		
1994	3960.4	62.7	4.3	5.8	41.2	10.1	186.2	80.0	1514.5	14.1	1.0	4.5	15.6	1074.3	2.8	4.3	12.9	4.2	68.7	789.3	64.0		
1995	4150.9	66.7	5.2	7.1	44.3	10.6	194.9	84.2	1586.4	14.8	1.1	5.0	17.0	1133.3	2.9	4.5	13.5	4.3	73.3	815.3	66.4		
<b>High Growth Case</b>																							
2005	6710.3	118.3	21.5	22.1	89.9	16.8	295.0	126.6	2416.9	23.9	1.6	13.5	44.4	2068.7	4.4	7.2	23.1	6.4	135.6	1171.8	102.8		
2015	11033.8	213.4	36.4	29.7	172.9	26.8	451.8	182.3	3725.6	36.1	2.5	25.7	106.1	3843.5	6.9	11.4	34.9	9.5	254.0	1703.0	161.5		
<b>Medium Growth Case 1</b>																							
2005	6698.4	118.1	21.5	22.1	89.8	16.8	294.6	126.4	2414.0	23.8	1.6	13.5	40.5	2066.2	4.4	7.1	23.1	6.3	133.4	1170.4	102.7		
2015	10969.9	212.5	36.3	29.6	172.2	26.6	450.0	181.5	3710.8	36.0	2.5	25.6	85.6	3828.3	6.8	11.4	34.8	9.4	252.8	1696.4	160.9		
<b>Medium Growth Case 2</b>																							
2005	6653.5	117.4	19.7	21.8	87.1	16.7	292.8	125.7	2399.0	23.7	1.6	13.4	40.2	2033.7	4.4	7.1	22.9	6.3	134.6	1163.4	102.1		
2015	10785.3	209.2	28.6	28.7	157.3	26.2	443.1	178.9	3653.9	35.5	2.4	25.2	84.3	3771.5	6.7	11.2	34.2	9.3	249.0	1671.6	158.5		
<b>Low Case</b>																							
2005	6639.3	117.2	19.7	21.8	86.9	16.6	292.3	125.5	2395.1	23.6	1.6	13.4	37.0	2050.3	4.4	7.1	22.9	6.3	134.3	1161.5	101.9		
2015	10730.0	208.2	28.4	28.5	156.6	26.1	441.0	178.1	3636.5	35.3	2.4	25.1	80.0	3753.6	6.6	11.1	34.1	9.2	247.6	1663.8	157.8		

**TABLE A 1.4 Export Value Index and Growth Rate**

	World	Frm.U.SSR	Bulgaria	Koman	Other E.Eu	Greece	Italy	Spain	Other W.Eu	Israel	Cyprus	Syria	Turkey	Other Asia	Egypt	Tunisia	Algeria	Morocco	Other Africa	America	Oceania
INDEX 1995=100																					
<b>High Growth Case</b>																					
2005	162	177	410	311	203	158	151	150	152	161	150	268	261	183	152	158	171	147	185	144	155
2015	266	320	694	418	391	251	232	217	235	243	229	510	623	339	236	251	259	218	347	209	243
<b>Medium Growth Case 1</b>																					
2005	161	177	410	311	203	157	151	150	152	161	150	268	238	182	152	157	171	146	185	144	155
2015	264	319	691	416	389	250	231	216	234	243	228	509	503	338	235	250	258	217	345	208	242
<b>Medium Growth Case 2</b>																					
2005	160	176	375	307	197	156	150	149	151	160	149	266	236	181	150	156	170	145	184	143	154
2015	260	314	544	404	355	246	227	213	230	239	224	501	495	333	229	247	254	214	340	205	239
<b>Low Case</b>																					
2005	160	176	374	307	196	156	150	149	151	159	148	266	217	181	150	156	170	145	183	142	154
2015	258	312	541	402	354	245	226	212	229	238	223	499	470	331	228	245	252	213	338	204	238
<b>GROWTH RATE (% annually)</b>																					
<b>High Growth Case</b>																					
1995-2005	4.92	5.90	15.17	12.02	7.35	4.65	4.23	4.16	4.30	4.87	4.13	10.36	10.06	6.20	4.28	4.66	5.52	3.90	6.35	3.69	4.47
1995-2015	5.01	5.99	10.17	7.41	7.05	4.71	4.29	3.94	4.36	4.55	4.22	8.49	9.58	6.30	4.38	4.72	4.87	3.97	6.42	3.75	4.55
<b>Medium Growth Case 1</b>																					
1995-2005	4.90	5.88	15.15	12.01	7.34	4.64	4.22	4.15	4.29	4.85	4.12	10.34	9.05	6.19	4.27	4.64	5.51	3.88	6.34	3.68	4.46
1995-2015	4.98	5.96	10.15	7.39	7.03	4.69	4.27	3.92	4.34	4.53	4.20	8.47	8.41	6.28	4.36	4.70	4.84	3.95	6.39	3.73	4.53
<b>Medium Growth Case 2</b>																					
1995-2005	4.83	5.82	14.13	11.87	7.00	4.57	4.16	4.09	4.22	4.79	4.05	10.28	8.98	6.12	4.16	4.58	5.45	3.82	6.27	3.62	4.40
1995-2015	4.89	5.88	8.84	7.23	6.55	4.61	4.19	3.84	4.26	4.45	4.11	8.39	8.33	6.20	4.22	4.62	4.76	3.87	6.31	3.65	4.45
<b>Low Case</b>																					
1995-2005	4.81	5.80	14.11	11.85	6.98	4.55	4.14	4.07	4.21	4.78	4.03	10.26	8.07	6.11	4.14	4.56	5.43	3.80	6.25	3.60	4.38
1995-2015	4.86	5.86	8.81	7.20	6.52	4.58	4.17	3.82	4.24	4.43	4.09	8.37	8.05	6.17	4.20	4.59	4.74	3.85	6.28	3.63	4.43



**TABLE A.15 Import Value of the Area 1975-2015**

Year	World	SR	Fmi/US	Bulgari	Romani	Other	Greece	Italy	Spain	Other	Israel	Cyprus	Syrian	A.R.	Turkey	Other	Asia	Egypt	Tunisia	Algeria	Morocco	Other	Americ	Oceani		
		a	a	a	a	E.Eu			W.Eu			A.R											a	a		
1975	1705.3	70.8	10.3	10.2	50.8	9.0	81.5	28.7	659.2	8.4	0.6	3.2	12.5	270.2	7.5	2.8	11.6	4.8	51.6	398.3	28.7					
1980	2280.9	76.1	10.7	14.7	46.4	11.2	117.2	37.5	896.6	9.0	1.4	4.6	10.1	389.8	5.6	4.1	12.4	4.6	67.2	511.3	34.5					
1985	2490.3	112.7	17.6	10.8	43.2	14.7	126.1	38.9	985.4	13.1	1.6	5.1	17.1	477.9	7.4	3.5	13.3	4.8	45.3	614.3	49.5					
1990	3566.7	120.7	12.9	9.1	31.4	19.8	182.0	87.7	1383.9	16.8	2.6	2.5	22.2	770.5	9.2	5.5	10.1	6.9	52.0	734.1	58.3					
1991	3610.9	44.3	3.1	5.7	37.5	22.6	190.7	98.0	1413.6	19.2	2.7	3.1	22.8	861.6	7.8	5.3	7.5	7.1	55.0	747.0	57.4					
1992	3874.0	43.0	5.3	6.3	40.7	23.9	196.5	108.1	1448.4	20.3	3.3	3.6	23.4	959.7	8.3	6.4	8.4	7.4	55.9	826.6	61.4					
1993	3973.0	27.6	4.6	6.1	44.0	24.8	196.8	102.8	1456.9	21.2	3.9	4.1	31.0	1051.9	8.5	7.2	10.5	7.1	54.3	910.1	62.9					
1994	4114.9	28.0	5.2	7.1	47.4	25.7	198.6	102.1	1504.8	22.3	4.4	4.6	31.8	1152.1	9.2	9.0	11.6	7.5	55.5	979.3	67.0					
1995	4276.8	27.0	6.2	8.5	51.1	26.7	202.7	105.2	1570.4	23.5	5.0	5.2	34.1	1260.9	9.6	9.7	12.2	7.9	56.9	1032.7	70.6					
<b>High Growth Case</b>																										
2005	6913.6	72.3	17.3	16.8	92.1	36.3	255.5	156.3	1976.0	35.2	8.9	12.4	72.0	2681.7	15.4	13.2	12.7	9.3	61.4	1277.9	91.0					
2015	11457.1	109.8	31.7	26.4	168.4	51.0	353.3	232.5	2583.9	57.6	13.9	22.5	155.3	5737.8	27.2	18.7	13.7	11.6	71.5	1647.4	123.2					
<b>Medium Growth Case 1</b>																										
2005	6901.4	72.2	17.2	16.7	92.0	36.2	255.3	156.2	1974.5	35.1	8.9	12.4	65.0	2679.6	15.4	13.2	12.7	9.3	61.3	1276.9	91.0					
2015	11391.1	109.4	31.6	26.3	167.9	50.8	352.2	231.8	2575.9	57.4	13.9	22.5	124.8	5720.0	27.1	18.6	13.7	11.5	71.3	1642.3	122.8					
<b>Medium Growth Case 2</b>																										
2005	6875.8	51.2	14.5	14.9	92.0	36.2	255.3	156.2	1974.5	35.1	8.9	12.4	65.0	2679.6	15.4	13.2	12.7	9.3	61.3	1276.9	91.0					
2015	11338.1	69.5	23.6	20.8	167.9	50.8	352.2	231.8	2575.9	57.4	13.9	22.5	124.8	5720.0	27.1	18.6	13.7	11.5	71.3	1642.3	122.8					
<b>Low Case</b>																										
2005	6863.6	51.2	14.5	14.9	89.7	36.2	255.3	156.2	1974.5	35.1	8.9	12.4	55.1	2679.6	15.4	13.2	12.7	9.3	61.3	1276.9	91.0					
2015	11293.1	69.5	23.6	20.8	155.6	50.8	352.2	231.8	2575.9	57.4	13.9	22.5	91.7	5720.0	27.1	18.6	13.7	11.5	71.3	1642.3	122.8					

**TABLE A 1.6 Import Value Index and Growth Rate**

	World	FRG	Italy	Spain	Other W.Eu	Israel	Cyprus	Syrian	Turkey	Other Asia	Egypt	Tunisia	Algeria	Morocco	Other AF	America	Oceania				
	SSR	Dulgari	Romania	Other E.Fu				A.R.													
INDEX 1995=100																					
<b>High Growth Case</b>																					
2005	162	267	278	198	180	136	126	149	126	150	179	237	211	213	160	136	104	118	108	124	129
2015	268	406	511	312	329	191	174	221	165	246	280	431	455	455	282	193	112	146	126	160	175
<b>Medium Growth Case 1</b>																					
2005	161	267	278	198	180	136	126	149	126	150	179	237	190	213	160	136	104	118	108	124	129
2015	266	405	509	311	328	191	174	220	164	245	279	429	366	454	281	192	112	146	125	159	174
<b>Medium Growth Case 2</b>																					
2005	161	189	234	176	180	136	126	149	126	150	179	237	190	213	160	136	104	118	108	124	129
2015	265	257	380	246	328	191	174	220	164	245	279	429	366	454	281	192	112	146	125	159	174
<b>Low Case</b>																					
2005	160	189	234	176	175	136	126	149	126	150	179	237	161	213	160	136	104	118	108	124	129
2015	264	257	380	246	304	191	174	220	164	245	279	429	269	454	281	192	112	146	125	159	174
<b>GROWTH RATE (% annual)</b>																					
<b>High Growth Case</b>																					
1995-2005	4.92	10.33	10.76	7.08	6.06	3.12	2.34	4.04	2.32	4.13	6.02	9.03	7.74	7.84	4.83	3.15	0.37	1.64	0.76	2.15	2.58
1995-2015	5.05	7.26	8.49	5.85	6.14	3.29	2.82	4.05	2.52	4.60	5.29	7.57	7.87	7.87	5.32	3.34	0.58	1.92	1.15	2.36	2.82
<b>Medium Growth Case 1</b>																					
1995-2005	4.90	10.32	10.76	7.07	6.05	3.12	2.33	4.04	2.32	4.13	6.01	9.02	6.65	7.83	4.83	3.14	0.36	1.64	0.75	2.15	2.57
1995-2015	5.02	7.24	8.48	5.83	6.13	3.28	2.80	4.03	2.51	4.58	5.27	7.56	6.70	7.85	5.31	3.32	0.57	1.91	1.13	2.35	2.81
<b>Medium Growth Case 2</b>																					
1995-2005	4.86	6.59	8.88	5.83	6.05	3.12	2.33	4.04	2.32	4.13	6.01	9.02	6.65	7.83	4.83	3.14	0.36	1.64	0.75	2.15	2.57
1995-2015	5.00	4.83	6.90	4.61	6.13	3.28	2.80	4.03	2.51	4.58	5.27	7.56	6.70	7.85	5.31	3.32	0.57	1.91	1.13	2.35	2.81
<b>Low Case</b>																					
1995-2005	4.84	6.59	8.88	5.83	5.78	3.12	2.33	4.04	2.32	4.13	6.01	9.02	4.90	7.83	4.83	3.14	0.36	1.64	0.75	2.15	2.57
1995-2015	4.97	4.83	6.90	4.61	5.72	3.28	2.80	4.03	2.51	4.58	5.27	7.56	5.07	7.85	5.31	3.32	0.57	1.91	1.13	2.35	2.81

**TABLE A 1.7 Trade Matrix (f.o.b.) : 1990**

Million US\$ at 1990 constant price

to→	World	Frm.U.S.S.R.	Bulgar	Roman	Other E.Eu	Greece	Italy	Spain	Other W.Eu	Israel	Cypru	Syrian A.R.	Turkey	Other Asia	Egypt	Tunisia	Algeria	Moroco	Other Af.	America	Oceania
World	3438620	66242	10027	9008	27025	19044	171505	87326	1386153	13289	2466	2063	21969	723224	7263	5033	8834	5726	71288	748077	50951
Frm.U.S.S.R.	104188	0	7346	2114	4997	356	4035	1305	56317	18	75	68	1239	15708	270	95	92	183	931	8975	64
Bulgaria	13346	9196	0	554	1178	114	113	0	1018	5	0	38	31	25	45	14	22	0	598	395	0
Romania	3869	1452	102	0	432	88	530	42	1594	25	7	21	165	701	82	5	23	18	87	488	7
Other E.Eu	35820	7452	326	469	2663	301	1432	223	17837	101	80	58	433	2161	216	84	155	119	188	1442	80
Greece	8108	130	54	60	89	0	1368	122	4415	46	207	25	118	497	66	36	30	0	179	592	74
Italy	170382	2671	253	81	1720	3086	0	8642	107934	1003	283	145	1696	15765	1352	821	1169	754	3524	18102	1383
Spain	55645	385	0	14	178	430	6059	0	36072	171	62	41	317	3162	156	164	589	675	1074	5913	183
Other W.Eu	1400238	22656	1220	2039	11491	10007	110258	46440	836094	7660	882	875	8164	125304	2709	2905	4506	2541	34039	137981	12467
Israel	12078	4	11	21	46	115	553	187	4390	0	36	0	97	2043	0	0	0	0	174	4276	125
Cyprus	948	34	6	3	16	104	16	9	419	12	0	14	0	232	24	0	0	0	30	28	1
Syrian A.R.	4064	1327	34	7	8	36	846	28	813	0	7	0	110	675	46	31	15	6	19	37	19
Turkey	12921	533	10	83	199	140	1110	200	6271	47	156	195	0	2114	161	40	202	30	318	1081	31
Other Asia	837845	10158	84	1918	2008	2252	13388	9249	132590	855	388	187	4690	382036	0	0	0	0	17337	240877	19628
Egypt	2581	389	5	27	61	37	301	34	649	160	10	11	15	571	0	17	5	6	64	218	1
Tunisia	3527	45	0	6	4	15	758	94	1953	0	0	25	29	219	4	0	83	25	203	64	0
Algeria	13307	173	34	1	4	112	2724	805	5749	0	46	0	214	219	24	214	0	51	56	2876	5
Morocco	4265	8	5	25	33	18	297	393	2203	0	0	0	90	678	0	63	58	0	214	166	14
Other Af.	75441	756	328	872	596	661	12035	7709	19762	186	14	23	1466	3877	128	130	99	509	5040	21182	88
America	627860	8388	209	605	1166	1116	14554	11554	122911	2966	209	336	2953	142206	1599	432	1678	802	6798	295910	11468
Oceania	50100	505	0	109	136	56	1128	290	7162	36	4	1	142	27031	381	2	108	7	215	7474	5313

TABLE A 1.8 Trade Matrix (f.o.b.) : 1995 estimated

to->		Million US\$ at 1990 constant price																			
		Frm.U.S.S.R.	Bulgar	Roman	Other E.Eu	Greece	Italy	Spain	Other W.Eu	Israel	Cypru	Syrian	Turkey	Other Asia	Egypt	Tunisia	Algeria	Moroc	America	Oceania	
World	4150888	13895	4514	7817	41137	23991	178606	97868	1470459	17349	4450	3996	31577	1109475	7110	8299	9958	6110	72894	283643	57741
Frm.U.S.S.R.	66699	0	2683	1148	4471	247	2320	821	33075	13	73	72	1002	13298	145	86	56	105	530	6516	40
Bulgaria	5249	1409	0	403	1413	106	87	0	802	5	0	54	34	28	32	17	18	0	456	384	0
Romania	7102	372	83	0	865	137	682	59	2096	40	15	49	299	1329	99	10	31	23	111	793	10
Other E.Eu	44259	1963	274	587	5491	481	1897	323	24143	166	178	141	807	4216	267	175	216	158	247	2413	115
Greece	10650	31	42	69	168	0	1661	162	5476	69	423	56	202	889	75	69	38	0	215	908	97
Italy	194872	554	168	80	2792	3885	0	9868	114992	1295	497	277	2488	24211	1316	1343	1280	787	3638	23840	1563
Spain	84174	108	0	19	390	732	8541	0	51944	299	147	106	629	6564	205	363	872	953	1499	10526	279
Other W.Eu	1586352	4710	810	2013	18698	12630	115278	53161	214404	9935	1553	1673	12007	192929	2644	4766	4945	2660	35229	182185	14121
Israel	14830	1	7	20	74	143	570	211	4621	0	62	0	141	3100	0	0	0	0	177	5564	140
Cyprus	1079	7	4	3	25	124	16	10	424	15	0	25	0	339	22	0	0	0	29	35	1
Syrian.A.R	5029	389	32	10	18	64	1246	45	1223	0	17	0	228	1464	63	72	23	9	28	69	30
Turkey	17023	126	8	93	367	200	1315	260	7592	69	311	423	0	3689	178	74	251	36	373	1618	40
Other Asia	1133339	2114	56	1896	3271	2845	14013	10399	141780	1110	684	358	6906	588876	0	0	0	0	18171	218402	22258
Egypt	2911	83	3	27	102	48	322	40	709	212	18	22	23	899	0	29	6	6	68	294	1
Tunisia	4536	11	0	7	8	22	929	126	2445	0	0	56	50	395	5	0	107	31	246	99	0
Algeria	13500	32	20	1	6	126	2340	822	5476	0	72	0	281	301	21	313	0	48	52	3386	5
Morocco	4338	1	3	21	46	20	268	389	2034	0	0	0	114	902	0	89	55	0	191	189	14
Other A.C.	73253	127	181	715	805	692	10445	7325	17521	200	20	37	1790	4955	104	177	90	442	4330	23215	83
America	815338	1757	140	602	1911	1419	15329	13324	132254	3875	371	647	4175	220573	1572	714	1855	846	7088	393600	13086
Oceania	66357	102	0	103	215	69	1148	323	7448	45	7	2	203	40519	362	3	115	7	217	2607	5859

**TABLE A.19 Trade Matrix (f.o.b.) : Projection: High Case 2005**

Million US\$ at 1990 constant price																								
to->	from	World	From USSR	U.S.S.R.	Bulgaria	Romania	Other E.U.	Greece	Italy	Spain	W.Eur	Other Israel	Cyprus	Syria	A.R.	Turkey	Other Asia	Egypt	Tunisia	Algeria	Morocco	Other Africa	America	Oceania
World	World	6707226	39730	13421	16568	79260	34906	240773	155637	1979199	27828	8541	10148	71206	2524160	12194	12105	11051	7694	84106	1302115	79696		
From USSR	World	118277	0	7830	2341	8233	373	3234	1380	46980	22	141	178	2375	34092	260	129	65	137	644	9802	63		
Bulgaria	World	21342	7762	0	1777	5624	346	262	0	2461	18	0	288	172	157	126	55	45	0	1198	1250	0		
Romania	World	22101	1615	415	0	2719	352	1622	170	5078	118	50	210	1208	5811	302	26	62	51	230	2035	26		
Other E.U.	World	89942	6053	969	1448	12235	880	3200	658	41492	349	418	424	2314	13079	580	318	304	248	363	4391	220		
Greece	World	16783	79	121	139	307	0	2297	270	7718	119	813	137	474	2261	133	102	44	0	259	1355	153		
Italy	World	294996	1324	459	153	4822	5303	0	15553	153203	2109	902	646	5531	58219	2216	1896	1399	960	4147	33638	2316		
Spain	World	126562	271	0	37	708	1089	11729	0	72684	511	281	259	1468	16577	363	538	1000	1220	1794	15598	435		
Other W.Eu	World	2416908	11473	2260	3924	32913	18231	153598	83387	1241427	16488	2872	3984	27201	472745	4535	6854	5508	3306	40920	261947	21332		
Israel	World	23854	2	20	39	128	203	748	334	6180	0	114	0	314	7482	0	0	0	0	203	7880	208		
Cyprus	World	1617	14	9	5	37	152	18	13	488	21	0	51	0	703	32	0	0	0	29	43	1		
Syria A.R	World	13472	1396	131	28	48	136	2449	107	2450	0	47	0	762	5292	160	152	38	16	47	146	68		
Turkey	World	44385	481	33	285	1016	455	2757	656	16215	180	906	1583	0	14222	481	168	440	70	682	3659	95		
Other Asia	World	2068659	4794	145	3440	5360	3824	17382	15849	179190	1715	1178	793	14564	1343294	0	0	0	0	19648	426181	31301		
Egypt	World	4426	171	8	45	152	58	364	54	816	299	28	43	43	1869	0	35	5	7	67	359	1		
Tunisia	World	7150	29	0	15	14	34	1310	218	3567	0	0	143	122	1041	8	0	128	41	307	153	0		
Algeria	World	23114	93	67	2	12	216	4021	1568	8833	0	159	0	755	875	43	535	0	70	71	5785	9		
Morocco	World	6358	3	7	37	73	25	321	561	2479	0	0	0	233	1985	0	115	55	0	200	245	19		
Other Africa	World	135627	380	620	1712	1741	1228	17103	14459	29230	408	47	107	4983	14921	219	313	123	676	6181	41021	154		
America	World	1171770	3601	328	987	2831	1724	17188	18009	151097	5412	577	1297	8341	454826	2269	864	1739	885	6928	476232	16635		
Oceania	World	102796	187	0	154	285	75	1151	391	7608	57	10	3	347	74710	467	3	97	7	189	10395	6660		

TABLE A 1.10 Trade Matrix (f.o.b.) : Projection: High Case 2015

Million US\$ at 1990 constant price																						
to->	from	World	Frm.U SSR	Dulgar	Roma	Other E.Eu	Greece	Italy	Spain	Other W.Eu	Israel	Cypru	Syrian	Turkey	Other Asia	Egypt	Tunisia	Algeri	Maroc	Other A.C.	America	Oceania
World		11033778	60359	24658	26047	144970	49057	372918	231456	2388129	45592	133339	18404	153655	5400686	21454	17128	11966	9563	97968	1678644	107784
Frm.U SSR		213407	0	14550	3755	15499	562	4750	2202	66322	40	226	329	5541	83215	496	194	75	181	807	14562	99
Bulgaria		36409	12675	0	2955	10271	540	399	0	3600	34	0	552	416	398	248	86	54	0	1557	1924	0
Romania		29689	1862	565	0	3744	388	1743	198	5245	157	59	284	2062	10377	421	29	53	50	211	2212	30
Other E.Eu		172857	10894	2057	2653	26306	1512	5369	1198	66902	721	767	893	6168	36461	1264	547	405	375	519	7452	392
Greece		26758	123	220	219	567	0	3309	423	10684	212	1281	248	1084	5410	249	151	51	0	319	1974	234
Italy		451833	1916	783	225	8338	7608	0	22789	198666	3508	1332	1096	11855	130533	3884	2625	1499	1164	4776	45906	3330
Spain		182267	390	0	55	1219	1497	15747	0	93781	846	412	438	3130	36980	633	741	1067	1472	2056	21180	622
Other W.Eu		3725586	16857	3917	5870	57774	25586	210414	127012	1634271	27838	4306	6860	59188	1076038	8071	9634	5991	4070	47848	362909	31130
Israel		36107	3	31	54	205	260	934	453	7417	0	156	0	622	15527	0	0	0	0	216	9953	276
Cyprus		2463	17	13	6	55	183	21	17	549	30	0	75	0	1368	49	0	0	0	29	51	2
Syrian.A.R		25673	2193	242	45	89	204	3585	170	3496	0	76	0	1771	12872	304	228	44	21	59	216	105
Turkey		106069	1012	82	610	2553	913	5404	1396	30543	436	1943	3901	0	46316	1224	338	685	123	1140	7254	197
Other Asia		3843475	6660	238	4866	8897	5074	22515	22291	223048	2738	1669	1292	29963	2891023	0	0	0	0	21723	558288	43190
Egypt		6856	217	12	58	230	71	430	70	927	435	37	65	81	3671	0	42	5	7	67	429	2
Tunisia		11405	45	0	23	27	52	1954	247	5036	0	0	265	284	2540	16	0	149	54	385	227	0
Algeria		34917	145	123	3	23	322	5837	2472	12323	0	252	0	1742	2112	80	797	0	92	88	8494	14
Morocco		9452	4	11	50	115	32	391	742	2904	0	0	0	451	4021	0	144	53	0	208	302	24
Other A.C.		254048	695	1336	3186	3803	2145	29145	26755	47873	838	87	229	13487	42249	484	547	167	1035	8990	70698	279
America		1703024	4439	477	1239	4169	2029	19753	22474	166872	7666	726	1873	15226	868500	3388	1019	1387	914	6796	553513	20366
Oceania		161481	212	0	177	386	81	1216	448	7720	74	11	4	581	131076	641	4	81	6	171	11100	7491

TABLE A.1.11 Trade Matrix (f.o.b.) : Projection: Medium Case 1 2005

Million US\$ at 1990 constant price

to->	from	World	Fm.U SSR	Bulgaria	Romania	Other E.U.	Greece	Italy	Spain	Other W.Eu	Israel	Cyprus	Syrian A.R.	Turkey	Other Asia	Egypt	Tunisia	Algeria	Morocco	America	Oceania	
World	World	6698361	39699	13411	16556	79200	34879	240389	155119	1977688	27806	8534	10141	64296	2522234	12184	12095	11043	7688	84042	1301122	79615
Fm.USSR	Fm.USSR	118123	0	7825	2343	8240	373	3236	1381	47011	22	142	181	2145	14118	261	129	65	137	644	9806	63
Bulgaria	Bulgaria	21515	7757	0	1777	5620	346	262	0	2459	18	0	292	155	157	126	55	45	0	1197	1249	0
Romania	Romania	22070	1622	416	0	2729	354	1628	170	3098	119	51	214	1095	5833	304	26	62	52	231	2043	26
Other E.U.	Other E.U.	89838	6061	969	1451	12251	881	3204	658	41542	349	422	430	2092	13095	582	318	305	249	363	4396	220
Greece	Greece	16761	79	121	139	308	0	2300	271	7725	119	820	139	428	2263	134	103	44	0	260	1356	153
Italy	Italy	294629	1325	458	153	4825	5508	0	15354	153283	2110	910	655	4996	58255	2222	1898	1403	961	4149	33647	2317
Spain	Spain	126410	271	0	37	708	1089	11728	0	72674	511	283	263	1325	16576	364	538	1003	1220	1794	15592	485
Other W.Eu	Other W.Eu	2413984	11472	2257	3926	32910	18234	153596	85332	1241251	16484	2897	4036	24554	472723	4546	6855	5522	3305	40913	261846	21324
Israel	Israel	23825	2	20	39	128	203	748	334	6180	0	115	0	283	7484	0	0	0	0	203	7879	208
Cyprus	Cyprus	1615	14	9	5	37	152	18	13	488	21	0	52	0	702	32	0	0	0	29	43	1
Syrian A.R.	Syrian A.R.	13457	1402	131	28	48	137	2460	107	2460	0	48	0	690	5314	161	153	38	16	48	147	68
Turkey	Turkey	40479	439	30	260	926	415	2513	597	14778	164	833	1462	0	12962	439	153	402	63	621	3334	86
Other Asia	Other Asia	2066169	4792	145	3440	5358	3823	17375	15832	179095	1714	1187	804	13141	1342702	0	0	0	0	19637	425848	31276
Egypt	Egypt	4420	171	8	45	152	58	364	54	816	299	28	44	39	1868	0	35	5	7	67	359	1
Tunisia	Tunisia	7141	29	0	15	14	34	1330	218	3567	0	0	145	110	1041	8	0	128	41	307	153	0
Algeria	Algeria	23084	93	67	2	12	217	4029	1570	8849	0	160	0	683	877	43	536	0	70	71	5794	9
Morocco	Morocco	6349	3	7	37	74	26	322	562	2484	0	0	0	211	1989	0	116	55	0	200	245	19
Other A.C.	Other A.C.	135433	381	621	1717	1745	1232	17140	14484	29298	409	47	108	4508	14956	220	314	124	677	6194	41102	154
America	America	1170384	3600	328	987	2830	1723	17182	17992	151029	5409	582	1313	7527	454666	2274	864	1743	884	6925	475902	16623
Oceania	Oceania	102675	187	0	154	285	75	1150	390	7602	57	10	3	313	74651	468	3	97	7	189	10383	6652

TABLE A 1.12 Trade Matrix (f.o.b.) : Projection: Medium Case 1 2015

Million US\$ at 1990 constant price																						
to →	from	World	U.S.S.R.	Bulgaria	Romania	Other E.Eu	Greece	Italy	Spain	Other W.Eu	Israel	Cyprus	Syria	Turkey	Other Asia	Egypt	Tunisia	Algeria	Morocco	Other Af.	America	Oceania
	World	10969924	60172	24581	25967	144521	48905	331888	230740	2380116	45451	13298	18347	123488	5383964	21387	17075	11929	9534	97664	1673447	107450
	Frm.U.S.S.R.	212495	0	14510	3763	15514	562	4755	2200	66370	40	232	342	4458	83326	501	195	76	181	808	14564	99
	Bulgaria	36260	12643	0	2951	10942	539	398	0	3589	34	0	573	334	397	250	86	55	0	1552	1918	0
	Romania	29554	1879	567	0	3777	391	1759	199	5290	158	61	298	1672	10471	428	29	54	50	213	2230	30
	Other E.Eu	172201	10928	2055	2664	26383	1518	5385	1199	67080	723	790	932	4971	36581	1278	549	410	375	521	7467	393
	Greece	26642	123	219	220	568	0	3316	423	10703	212	1317	259	873	5423	252	152	51	0	319	1976	234
	Italy	449989	1918	781	225	8346	7621	0	22768	198815	3509	1368	1141	9537	130711	3919	2629	1513	1164	4779	45912	3330
	Spain	181550	390	0	55	1218	1497	15738	0	93698	845	423	455	2514	36970	638	741	1075	1470	2054	21148	621
	Other W.Eu	3710795	16846	3899	5873	57727	25583	210252	126660	1632515	27802	4414	7130	47527	1075547	8129	9631	6037	4063	47792	362293	31075
	Israel	35964	3	31	54	205	260	934	452	7411	0	160	0	500	15524	0	0	0	0	216	9939	276
	Cyprus	2456	17	13	6	55	182	21	17	546	30	0	78	0	1361	49	0	0	0	29	50	2
	Syria	25575	2214	244	45	90	206	3620	171	3479	0	79	0	1437	13000	310	231	45	22	60	218	106
	Turkey	85605	815	66	492	2056	736	4353	1122	24592	351	1606	3268	0	37315	993	273	557	99	918	5837	159
	Other Asia	3828340	6644	236	4860	8874	5065	22458	22191	222423	2730	1708	1340	24018	2884712	0	0	0	0	21660	556379	43039
	Egypt	6828	216	12	58	229	71	429	69	925	434	37	67	65	3664	0	42	5	7	67	428	2
	Tunisia	11358	45	0	23	27	52	1954	347	5034	0	0	275	228	2541	16	0	150	54	385	227	0
	Algeria	34767	145	123	3	23	324	5871	2481	12391	0	260	0	1408	2125	81	802	0	92	89	8535	14
	Morocco	9410	4	11	50	115	32	393	745	2918	0	0	0	364	4043	0	145	54	0	209	303	24
	Other Af.	252848	699	1340	3210	3826	2159	20326	26867	48155	863	90	239	10906	42524	491	551	170	1040	9042	71070	280
	America	1696427	4430	474	1238	4161	2027	19714	22384	166489	7647	743	1945	12211	867046	5408	1017	1597	911	6780	551900	20305
	Oceania	160859	211	0	177	385	81	1212	445	7692	74	11	5	466	130683	644	4	82	6	170	11053	7459



TABLE A 1.13 Trade Matrix (f.o.b.) : Projection: Medium Case 2 2005

Million US\$ at 1990 constant price																							
to->	from	World	USSR	Bulgaria	Romania	Other E.Eu	Greece	Italy	Spain	W.Eu	Other W.Eu	Israel	Cyprus	Syrian.A.R	Turkey	Other Asia	Egypt	Tunisia	Algeria	Morocco	America	Oceania	
World	6653491	28021	11253	14676	78851	34726	239531	154835	1948290	27684	8497	10096	64013	2511141	12131	12042	10994	7654	83673	1293399	79285		
From USSR	117380	0	6592	2089	8261	376	3257	1390	47338	22	143	182	2159	34381	262	130	65	138	649	9881	64		
Bulgaria	19688	5651	0	1632	5806	359	272	0	2551	19	0	302	161	163	130	57	47	0	1242	1296	0		
Romania	21812	1155	353	0	2755	358	1651	173	5169	120	51	216	1109	5919	307	26	63	52	234	2073	27		
Other E.Eu	87078	4228	805	1276	12117	875	3182	654	41263	347	419	426	2077	13018	578	316	303	247	360	4369	219		
Greece	16654	56	101	123	305	0	2292	270	7703	119	818	139	427	2258	133	102	44	0	259	1753	152		
Italy	292808	926	382	135	4782	5479	0	15484	152566	2101	906	651	4970	58026	2209	1888	1397	956	4128	33515	2308		
Spain	125661	189	0	33	702	1082	11661	0	72284	509	281	261	1317	16499	361	535	998	1213	1784	15520	433		
Other W.Eu	2399015	8020	1880	3460	32619	18142	152833	84955	1235548	16413	2882	4011	24426	470907	4920	6820	5496	3289	40713	260836	21245		
Israel	23687	1	16	35	127	202	743	332	6144	0	114	0	281	7445	0	0	0	0	202	7838	207		
Cyprus	1604	10	7	4	37	152	18	13	486	21	0	52	0	701	32	0	0	0	29	43	1		
Syrian.A.R	13079	1012	113	26	49	141	2527	110	2529	0	49	0	709	5467	165	157	39	17	49	151	70		
Turkey	40229	307	25	229	920	414	2507	596	14745	164	831	1456	0	12944	438	153	401	63	620	3329	86		
Other Asia	2053692	3346	120	3028	5304	3799	17268	15744	178059	1705	1180	798	13057	1335945	0	0	0	0	19518	423699	31124		
Egypt	4376	120	7	40	151	59	365	54	818	300	29	44	39	1875	0	35	5	7	67	360	11		
Tunisia	7097	20	0	13	14	34	1323	217	3550	0	0	144	109	1037	8	0	128	41	306	152	0		
Algeria	22943	65	56	2	12	216	4009	1563	8809	0	160	0	680	874	43	533	0	70	71	5772	9		
Morocco	6312	2	6	33	73	25	320	559	2472	0	0	0	209	1981	0	115	55	0	199	244	19		
Other AF	134587	267	517	1515	1732	1227	17078	14437	29198	408	47	108	4490	14916	219	312	124	675	6171	40992	154		
America	1163423	2514	273	869	2803	1713	17082	17497	150202	5381	578	1304	7481	452517	2259	859	1733	879	6885	473646	16548		
Oceania	102065	131	0	135	282	74	1143	388	7557	56	10	3	311	74268	465	3	96	7	188	10329	6619		

**TABLE A.1.14 Trade Matrix (f.o.b.) : Projection: Medium Case 2 2015**

Million US\$ at 1990 constant price																					
to->	World	Frm.U.SSR	Bulgar	Roma	Other	Greece	Italy	Spain	Other	Israel	Cypru	Syria	Turkey	Other	Egypt	Tunisia	Algeri	Moroc	Other	America	Oceania
from			ia	nia	E.Eu				W.Eu		s	.A.R		Asia		a	co	Af.			
World	6651491	17660	18096	20318	142525	48210	327305	227554	2544491	44823	13114	18024	121783	5102626	21092	168339	11765	9402	96316	1650341	105967
Frm.U.SSR	209225	0	10799	3032	15783	566	4777	2209	66733	41	233	345	4482	83722	504	196	77	182	812	14633	99
Bulgaria	28559	7475	0	2153	10079	491	362	0	3268	31	0	523	304	361	228	78	50	0	1414	1745	0
Romania	28680	1216	418	0	3807	390	1751	198	5270	157	61	298	1665	10425	427	29	53	50	212	2220	30
Other E.Eu	157322	6662	1428	2004	25058	1426	5051	1125	62970	679	742	878	4667	34315	1202	516	383	352	489	7004	369
Greece	26223	79	161	174	569	0	3279	418	10591	210	1305	257	864	5363	250	150	51	0	316	1954	232
Italy	443112	1230	571	178	8333	7528	0	22443	196193	3463	1351	1130	9411	128897	3874	2595	1494	1150	4718	45274	3284
Spain	178911	250	0	43	1216	1479	15511	0	92428	834	417	450	2480	36443	630	731	1061	1451	2027	20847	613
Other W.Eu	3651947	10799	2849	4645	57647	25276	207334	124878	1611267	27438	4361	7059	46908	1060800	8037	9509	5964	4011	47184	357327	30655
Israel	35454	2	23	42	204	257	920	445	7313	0	158	0	493	15309	0	0	0	0	213	9801	272
Cyprus	2415	11	10	5	55	180	21	17	539	29	0	77	0	1344	49	0	0	0	28	50	2
Syria.A.R	25214	1467	184	37	93	211	3689	175	3549	0	80	0	1466	13252	316	235	46	22	61	222	108
Turkey	84311	524	48	390	2058	729	4303	1109	24333	347	1590	3243	0	36896	985	270	551	98	909	5771	157
Other Asia	377331	4258	172	3843	8859	5002	22139	21871	219451	2693	1687	1327	23697	2844156	0	0	0	0	21377	548558	42441
Egypt	6657	139	9	46	229	70	424	68	914	429	37	66	64	3617	0	42	5	7	66	422	2
Tunisia	11184	29	0	18	27	51	1926	342	4966	0	0	273	225	2505	16	0	148	53	380	224	0
Algeria	34244	93	90	3	23	320	5794	2448	12239	0	257	0	1591	2097	81	792	0	91	88	8424	14
Morocco	9275	3	8	40	115	32	388	734	2882	0	0	0	359	3989	0	143	53	0	206	299	24
Other Af.	248952	450	981	2546	3831	2139	29000	26563	47661	854	89	238	10793	42058	487	545	168	1030	8952	70291	277
America	1671605	2840	347	979	4155	2002	19442	25071	164335	7547	734	1926	12053	855221	3370	1004	1578	899	6694	544375	20031
Oceania	158514	136	0	140	384	80	1194	439	7590	73	11	5	459	128855	636	4	80	6	168	10899	7356

**TABLE A.1.5 Trade Matrix (f.o.b.) : Projection: Low Case 2005**

Million US\$ at 1990 constant price																						
to->	World	USSR	USSR	Bulgaria	Romania	Other E.U.	Greece	Italy	Spain	W.Eu	Other	Cyprus	Syria	Turkey	Other	Egypt	Tunisia	Algeria	Morocco	Other	America	Oceania
from	World	USSR	Bulgaria	Romania	Other E.U.	Greece	Italy	Spain	W.Eu	Other	Cyprus	Syria	Turkey	Other	Egypt	Tunisia	Algeria	Morocco	Other	America	Oceania	
World	6653491	28011	11249	14671	76843	34713	239444	134778	1968274	27674	8494	10092	54241	2510228	12126	12038	10990	7651	83642	1294928	79256	
USSR	117177	0	6592	2093	8064	377	3267	1394	47474	23	144	184	1834	34506	264	130	66	138	650	9914	64	
Bulgaria	19655	5683	0	1644	5696	362	274	0	2571	19	0	308	137	165	132	58	47	0	1252	1307	0	
Romania	21773	1163	355	0	2707	362	1666	174	5216	121	52	221	948	5978	311	27	64	53	236	2093	27	
Other E.U.	86939	4242	807	1282	11862	880	3200	657	41500	349	424	433	1769	13102	582	318	305	248	363	4396	220	
Greece	16625	56	101	123	298	0	2297	270	7720	119	825	140	362	2265	134	102	44	0	259	1356	153	
Italy	292316	925	381	135	4660	5486	0	15495	152738	2103	913	659	4213	58135	2216	1890	1401	937	4133	33566	2312	
Spain	125455	189	0	33	683	1082	11660	0	72277	509	283	264	1115	16510	362	535	1000	1213	1784	15524	433	
Other W.Eu	2395064	8001	1875	3457	31752	18144	152849	84927	1235633	16415	2903	4034	20687	471291	4528	6820	5509	3288	40718	260956	21256	
Israel	23648	1	16	35	123	202	743	332	6143	0	115	0	238	7430	0	0	0	0	202	7841	207	
Cyprus	1602	10	7	4	35	151	18	13	485	21	0	52	0	700	32	0	0	0	29	42	1	
Syria/A.R	13338	1016	113	26	48	142	2344	111	2545	0	50	0	605	5506	167	138	40	17	49	152	70	
Turkey	36979	282	23	211	823	380	2304	548	13551	151	769	1353	0	11904	403	141	370	58	570	3061	79	
Other Asia	2050321	3334	120	3022	5156	3795	17248	15719	177850	1703	1187	805	11044	1315374	0	0	0	0	19496	423367	31101	
Egypt	4369	120	7	40	147	59	365	54	819	300	29	45	33	1877	0	35	5	7	67	360	1	
Tunisia	7085	20	0	13	14	34	1324	217	3551	0	0	146	93	1038	8	0	128	41	306	152	0	
Algeria	22903	65	56	2	12	216	4020	1567	8833	0	161	0	577	877	43	535	0	70	71	5790	9	
Morocco	6301	2	6	33	71	25	321	561	2480	0	0	0	178	1989	0	115	55	0	200	245	19	
Other AF	134338	267	518	1518	1692	1231	17138	14481	29299	409	47	109	3816	14979	220	314	124	677	6193	41151	154	
America	1161536	2505	272	867	2725	1711	17065	17871	150046	5376	582	1317	6329	452384	2261	858	1735	878	6878	473339	16538	
Oceania	101900	130	0	135	274	74	1141	387	7544	56	10	3	263	74197	465	3	96	7	188	10316	6611	

**TABLE A 1.16 Trade Matrix (f.o.b.) : Projection: Low Case 2015**

Million US\$ at 1990 constant price		to->																							
from	World	Frm.U.SSR	Bulgar	Roma	Other	Greece	Italy	Spain	Other	W.Eu	Israel	Cypru	Syria	Turkey	Other	Asia	Egypt	Tunisia	Algeri	Moroc	Other	America	Oceania		
			ia	nia	E.Eu				E.Eu	W.Eu	.A.R.	5	.A.R.	Turkey	Asia	Egypt	Tunisia	Algeri	Moroc	Other	America	Oceania			
World	6653491	17616	18075	20294	131920	48173	326920	227286	2541498	44771	13099	18073	89411	5303380	21067	16819	11751	9391	96202	1648400	103842				
Frm.U.SSR	208176																								
Bulgaria	28419	7624	0	2204	9555	505	373	0	3362	31	0	542	229	372	234	80	51	0	1455	1799	0				
Romania	28529	1230	424	0	3579	398	1786	202	5377	161	62	306	1248	10668	436	29	55	51	216	2270	31				
Other E.Eu	156594	6708	1441	2026	23453	1448	5129	1142	63965	690	757	898	3480	34960	1221	523	391	358	497	7131	376				
Greece	26090	79	160	174	527	0	3292	420	10639	211	1316	260	637	5403	251	151	51	0	318	1967	234				
Italy	440964	1220	568	178	7688	7533	0	22461	196429	3469	1359	1139	6918	129429	3880	2596	1498	1150	4724	45429	3297				
Spain	178063	247	0	43	1119	1476	15485	0	92302	833	419	453	1818	36500	629	729	1061	1447	2024	20864	613				
Other W.Eu	3636518	10691	2827	4617	53053	25234	207026	124683	1609400	27421	4376	7101	34398	1062666	8030	9489	5966	4002	47137	357699	30700				
Israel	35285	2	23	42	188	256	918	444	7295	0	158	0	361	15315	0	0	0	0	213	9799	272				
Cyprus	2404	11	9	5	50	179	20	16	537	29	0	77	0	1341	48	0	0	0	28	49	2				
Syria.A.R.	25098	1469	185	37	87	213	3726	176	3585	0	81	0	1087	13428	320	238	47	22	62	225	110				
Turkey	80006	493	45	368	1800	692	4083	1052	23095	330	1516	3100	0	35122	935	256	524	91	863	5490	150				
Other Asia	3753640	4197	170	3803	8118	4973	22012	21744	218261	2680	1686	1329	17303	2836993	0	0	0	0	21265	546785	42322				
Egypt	6625	137	9	46	211	70	423	68	913	429	37	67	47	3624	0	42	5	7	66	423	2				
Tunisia	11129	29	0	18	25	51	1925	341	4966	0	0	274	165	2512	16	0	149	53	380	224	0				
Algeria	34072	93	90	3	21	322	5822	2460	12303	0	260	0	1026	2114	81	796	0	91	88	8487	14				
Morocco	9227	3	8	40	107	32	390	738	2896	0	0	0	265	4020	0	144	54	0	207	301	24				
Other A.C.	247613	448	981	2549	3553	2152	29178	26724	47970	860	90	241	7976	42454	490	548	169	1035	9012	70902	280				
America	1663762	2802	343	970	3810	1992	19342	21956	163544	7515	734	1230	8806	853596	3155	999	1572	894	6663	542952	19988				
Oceania	157774	133	0	138	352	79	1186	436	7542	72	11	5	335	128412	633	4	80	6	167	10853	7329				

TABLE A.1.17 Loaded Cargo Projection

Year	Million Ton																								
	World	FR	US	Bulgari	Romani	Other	Greece	Italy	Spain	Other	Israel	Cyprus	Syrian	Turkey	Other	Egypt	Tunisia	Algeria	Morocco	Other	Americ	Oceani			
	SR	a	a	a	a	E.Eu			W.Eu	Asia	A.R														
<b>DRY CARGO</b>																									
1975	1431.6	46.7	2.7	4.8	31.4	11.4	17.2	14.5	250.7	2.7	1.3	0.8	3.2	201.8	1.4	2.9	5.0	15.4	103.0	536.2	178.3				
1980	1820.7	54.8	2.1	4.0	30.0	19.0	24.1	30.4	392.7	6.3	1.6	1.7	5.0	265.8	1.4	3.7	3.2	20.5	124.2	717.1	203.1				
1985	1937.4	40.3	3.3	4.8	31.4	13.9	20.6	40.2	364.3	7.1	1.3	1.0	7.8	303.2	2.7	4.6	2.9	26.7	126.6	699.8	235.2				
1986	1944.6	40.3	3.1	4.9	33.5	19.5	19.7	38.5	367.6	7.3	1.9	0.8	8.4	301.7	2.9	5.1	3.0	28.5	127.7	685.9	244.4				
1987	1980.2	40.4	5.0	5.0	29.4	19.9	19.3	24.1	366.0	7.7	1.8	0.7	8.7	326.9	3.0	4.9	2.9	28.2	130.9	713.2	242.2				
1988	2108.4	44.2	4.8	5.1	27.7	20.7	20.3	33.4	368.0	7.9	1.9	0.8	13.7	368.8	3.1	5.2	2.8	23.7	141.9	759.6	255.0				
1989	2193.7	46.2	5.0	4.9	25.6	17.7	24.0	36.5	392.4	7.4	2.2	0.8	12.4	388.4	3.1	5.2	2.8	21.3	142.5	789.2	268.3				
1990	2247.3	44.0	4.6	3.7	26.6	18.1	24.6	37.3	399.4	7.4	2.2	0.8	12.9	401.4	3.0	5.5	2.7	20.1	147.6	811.7	273.9				
1995	2832.1	52.8	3.6	4.8	27.3	20.6	27.7	73.0	467.0	8.7	2.7	1.0	17.5	540.3	3.4	6.3	2.8	21.2	171.7	1008.5	371.1				
2005	4081.6	55.1	4.9	6.6	42.2	25.5	34.2	120.9	654.2	11.3	4.0	1.4	36.5	916.8	5.1	7.7	3.0	24.9	254.6	1311.3	561.4				
2015	6585.0	89.6	6.6	8.8	73.5	36.5	46.7	195.3	1007.8	15.7	6.5	2.1	75.6	1734.6	10.6	10.7	3.4	32.0	437.1	1868.7	923.2				
<b>LIQUID CARGO</b>																									
1975	1647.0	73.0	0.0	2.5	1.0	2.9	12.3	2.6	96.7	25.8	16.9	34.8	0.6	959.8	1.1	12.5	37.7	0.0	179.4	184.1	3.4				
1980	1881.0	95.0	1.3	4.8	2.0	2.4	10.9	4.8	171.8	0.4	32.8	13.9	17.2	938.7	51.5	5.5	45.8	0.0	203.7	276.7	1.7				
1985	1461.8	113.8	0.7	7.1	1.6	2.6	14.9	8.8	211.5	0.3	58.3	9.8	46.9	507.4	77.8	3.9	47.7	0.1	142.2	199.4	7.1				
1986	1544.8	115.4	0.7	8.7	1.8	2.9	16.1	5.6	212.9	0.4	67.6	12.2	59.4	537.6	79.4	3.8	50.0	0.1	151.3	210.8	8.2				
1987	1541.2	116.8	0.7	8.7	3.5	3.2	16.0	10.7	211.4	0.5	72.2	12.8	59.1	511.3	78.7	3.9	51.2	0.2	147.7	223.8	8.9				
1988	1468.4	116.4	0.7	8.8	4.4	3.3	16.4	11.9	208.1	0.5	78.3	13.4	78.5	389.0	88.3	4.1	49.5	0.2	159.9	228.0	8.8				
1989	1753.7	117.1	0.7	9.1	3.1	3.4	17.1	13.4	254.4	0.5	82.1	14.5	79.8	578.1	94.8	4.5	51.3	0.2	175.9	245.8	7.9				
1990	1778.4	105.4	0.7	2.8	2.8	3.5	20.2	14.2	241.9	0.5	79.6	14.5	44.1	645.1	99.7	4.7	54.9	0.2	185.8	247.7	10.1				
1995	1976.6	83.2	0.5	2.0	2.7	4.5	20.7	18.9	266.4	0.5	85.5	15.0	2.8	771.6	103.2	5.2	55.1	0.2	198.4	328.0	12.4				
2005	2757.5	110.1	0.7	5.1	4.1	6.3	23.7	26.7	367.2	0.8	111.2	17.3	3.1	1188.8	114.8	6.3	59.6	0.2	273.4	420.5	17.6				
2015	4229.4	149.6	0.8	4.6	6.8	8.8	29.1	37.1	524.7	1.4	153.3	17.4	3.1	2102.4	116.6	8.0	64.5	0.2	417.5	557.6	26.0				

**TABLE A.1.18 Unloaded Cargo Projection**

Million Ton		World	FRa.US	Bulgari	Romani	Other	Greece	Italy	Spain	Other	Israeli	Cyprus	Syrian.	Turkey	Other	Egypt	Tunisia	Algeria	Morocc	Other	Americ	Oceani
		SR	a	a	a	E.Eu			W.Eu	A.R	Asia											
<b>DRY CARGO</b>																						
1975	1424.9	29.0	7.2	7.8	19.6	8.2	58.3	32.1	415.0	4.4	0.6	4.0	7.8	481.4	9.0	2.5	7.5	4.4	46.6	249.0	26.5	
1980	1881.4	48.0	12.5	18.6	23.4	14.3	77.8	40.0	538.9	5.5	1.1	1.7	9.7	679.9	17.7	4.6	11.6	5.9	56.5	289.4	22.5	
1985	2026.1	69.8	12.7	16.4	15.0	6.8	70.0	43.8	556.3	9.2	1.8	3.8	16.2	784.9	21.5	5.6	13.7	9.6	53.2	289.6	22.8	
1986	2065.1	72.5	12.8	16.5	15.0	7.0	70.2	45.9	575.8	9.6	2.2	4.6	19.2	792.3	21.5	5.2	13.0	10.9	50.7	294.7	21.0	
1987	2162.4	75.3	12.6	16.9	16.5	7.3	70.4	40.0	568.7	10.4	2.3	5.2	21.2	892.0	21.4	5.3	12.5	10.0	50.0	298.1	21.1	
1988	2284.3	77.1	10.5	16.8	16.4	7.8	75.7	53.2	616.7	9.8	2.4	5.2	20.6	934.9	21.9	8.3	12.3	7.1	56.6	305.2	20.5	
1989	2373.6	79.4	10.6	17.5	15.0	7.8	77.3	53.3	617.4	7.8	2.5	5.2	23.7	999.0	22.5	8.5	12.6	7.3	59.0	320.7	21.2	
1990	2395.9	78.0	10.4	17.5	16.1	8.0	79.7	55.4	624.1	6.4	2.5	5.5	28.8	1004.0	22.5	8.7	12.7	7.4	59.6	322.2	20.9	
1995	2832.1	34.2	8.8	14.2	18.6	10.1	82.6	58.7	671.9	7.8	3.3	5.6	34.8	1367.5	22.9	16.0	12.9	8.4	53.4	379.4	21.2	
2005	4081.6	50.9	11.5	14.8	31.2	12.8	89.7	68.5	775.7	10.2	4.8	5.8	56.6	2374.2	27.0	22.0	12.9	8.4	56.8	426.2	21.7	
2015	6585.0	69.2	15.0	15.5	54.6	16.3	103.0	82.7	930.3	14.9	6.7	6.2	96.3	4506.0	35.3	31.2	13.0	8.5	61.4	496.3	22.6	
<b>LIQUID CARGO</b>																						
1975	1681.3	6.5	12.8	5.1	1.2	14.9	140.6	42.2	533.5	27.4	0.6	0.1	10.0	402.7	2.2	1.4	0.3	2.9	34.1	424.4	18.5	
1980	1876.4	7.7	15.0	16.0	3.6	19.0	147.6	54.9	501.8	9.0	1.0	5.7	11.4	442.2	42.4	3.7	2.9	4.4	34.6	534.5	19.1	
1985	1470.1	7.4	12.7	14.7	0.9	13.5	119.5	49.8	363.4	7.1	0.9	5.7	20.7	446.2	52.7	0.7	1.8	4.5	33.3	300.6	14.2	
1986	1545.0	7.9	12.8	15.5	0.9	14.9	116.0	51.5	360.4	6.3	1.0	5.5	23.6	474.8	52.5	0.7	1.6	4.6	33.4	350.5	10.7	
1987	1533.0	8.4	12.7	16.4	0.9	15.6	112.7	47.7	384.3	5.8	1.0	5.4	15.3	433.7	52.7	0.8	1.6	4.7	34.2	363.9	15.3	
1988	1638.9	8.5	11.4	16.5	1.8	16.1	114.1	55.4	398.7	6.6	1.0	5.6	13.3	476.0	54.8	0.8	1.6	4.7	36.4	398.5	16.9	
1989	1713.7	8.4	11.4	16.2	1.7	16.5	118.1	57.3	407.2	7.6	1.0	5.7	11.0	490.6	56.4	0.8	1.7	4.9	37.5	442.2	17.7	
1990	1785.4	7.3	9.7	16.0	1.8	17.2	119.1	60.4	417.3	8.1	1.0	4.9	16.3	522.3	59.2	0.8	1.6	5.1	39.0	460.4	17.9	
1995	1976.6	4.3	8.3	13.3	2.1	16.3	119.5	65.7	380.9	7.5	1.5	5.1	29.4	681.1	61.1	1.4	1.9	5.4	38.0	514.0	19.7	
2005	2757.5	7.4	12.8	16.0	4.1	17.0	129.4	88.0	318.0	7.4	2.6	6.3	49.5	1288.9	74.1	2.3	2.3	6.6	43.6	656.6	24.6	
2015	4229.4	10.3	18.8	18.6	8.0	16.7	126.0	117.7	150.1	6.4	4.1	7.6	77.3	2638.2	88.3	3.8	2.7	8.0	48.6	848.6	29.8	

**TABLE A 1.19 Index and Growth rate of Loaded / Unload Cargo**

World	Frm.US SR	Bulgari a	Romani a	Other E.Eu	Greece	Italy	Spain	Other W.Eu	Israel	Cyprus	Syrian A.R	Turkey	Other Asia	Egypt	Tunisia	Algeria	Morocco	Other Afr.	Americ a	Oceani a	
INDEX 1995=100																					
<b>DRY CARGO LOADED</b>																					
2005	144	104	139	132	154	124	124	165	140	130	149	142	208	170	151	123	106	117	148	130	131
2015	233	170	187	184	269	177	169	267	216	182	240	212	431	321	313	169	121	151	255	185	249
<b>DRY CARGO UNLOADED</b>																					
2005	144	149	131	104	168	126	109	117	115	131	144	105	163	174	118	138	100	101	106	112	102
2015	233	202	171	109	294	162	125	141	138	191	200	112	276	330	154	196	101	102	115	131	107
<b>LIQUID CARGO LOADED</b>																					
2005	140	132	138	259	154	140	115	142	138	150	130	115	113	154	111	121	108	113	138	128	142
2015	214	180	172	236	251	195	141	197	197	254	179	116	113	272	113	155	117	134	210	170	210
<b>LIQUID CARGO UNLOADED</b>																					
2005	140	174	154	121	193	105	108	134	83	98	172	123	169	189	121	168	119	122	115	128	125
2015	214	240	227	140	375	103	105	179	39	85	269	148	263	387	145	278	141	146	128	165	151
GROWTH RATE (% annually)																					
<b>DRY CARGO LOADED</b>																					
1995-2005	3.7	0.4	3.4	3.4	4.4	2.2	2.1	5.2	3.4	2.7	4.1	3.5	7.6	5.4	4.2	2.1	0.6	1.6	4.0	2.7	4.2
1995-2015	4.3	2.7	3.2	3.1	5.1	2.9	2.7	5.0	3.9	3.0	4.5	3.8	7.6	6.0	5.9	2.7	1.0	2.1	4.8	3.1	4.7
<b>DRY CARGO UNLOADED</b>																					
1995-2005	3.7	4.1	2.7	0.4	5.3	2.3	0.8	1.5	1.4	2.8	3.7	0.5	5.0	5.7	1.7	3.2	0.0	0.1	0.6	1.2	0.2
1995-2015	2.4	1.6	1.3	0.2	2.8	1.2	0.7	1.0	0.9	1.9	1.7	0.3	2.7	3.3	1.4	1.8	0.0	0.0	0.4	0.8	0.2
<b>LIQUID CARGO LOADED</b>																					
1995-2005	3.4	2.8	3.2	10.0	4.4	3.4	1.4	3.5	3.3	4.1	2.7	1.4	1.2	4.4	1.1	1.9	0.8	1.3	3.3	2.5	3.6
1995-2015	3.9	3.0	2.7	4.4	4.7	3.4	1.7	3.4	3.4	4.8	3.0	0.7	0.6	5.1	0.6	2.2	0.8	1.5	3.8	2.7	3.8
<b>LIQUID CARGO UNLOADED</b>																					
1995-2005	3.4	5.7	4.4	1.9	6.8	0.5	0.8	3.0	-1.8	-0.2	5.6	2.1	5.4	6.6	2.0	5.3	1.8	2.0	1.4	2.5	2.2
1995-2015	2.2	1.6	2.0	0.8	3.4	-0.1	-0.1	1.5	-3.7	-0.7	2.3	0.9	2.3	3.6	0.9	2.6	0.9	0.9	0.5	1.3	1.0

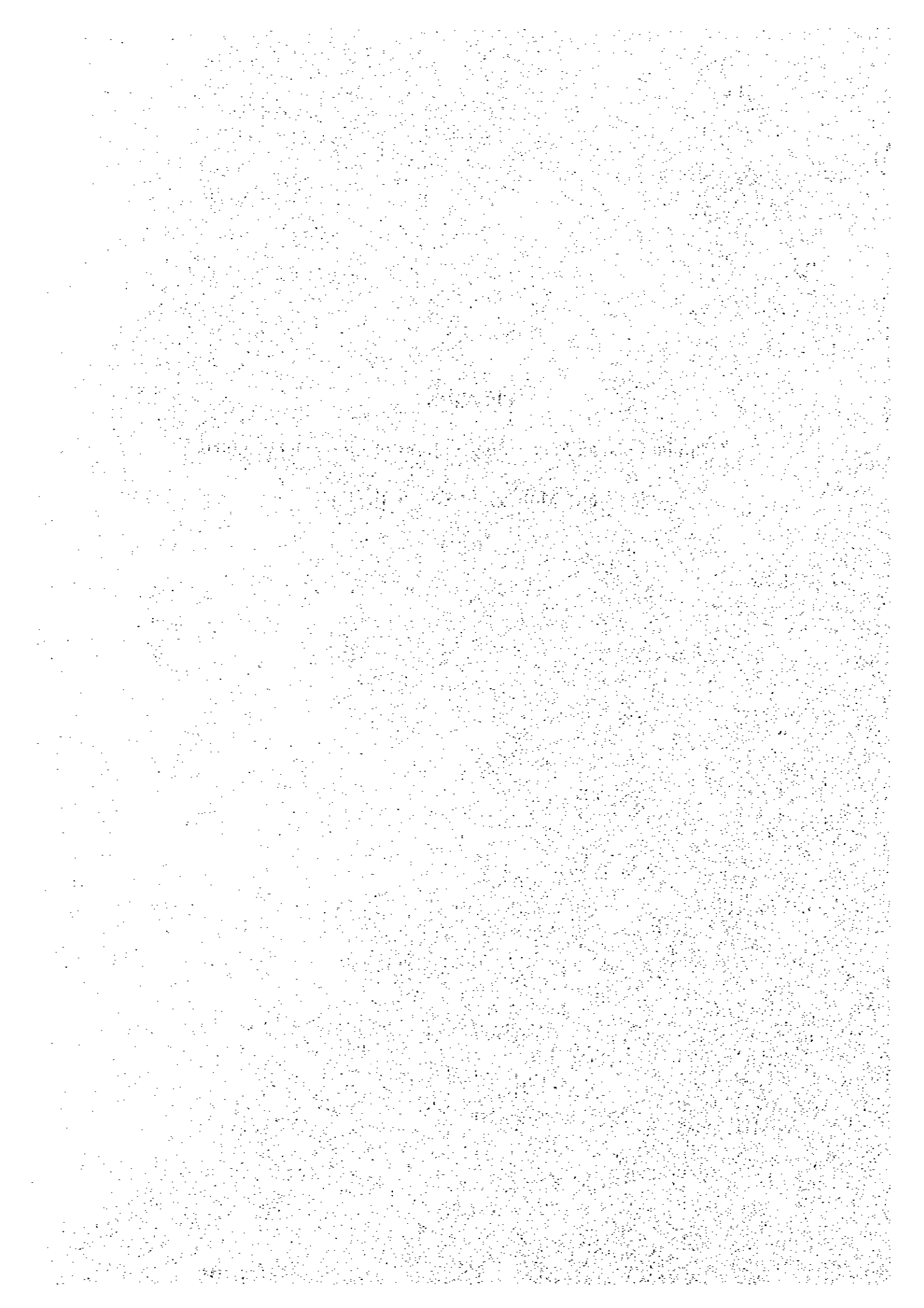
TABLE A 1.20 Container Throughput Projection

Year	Thousand TEU																														
	World	FR,US	UK	Japan	Other	W.Eu	Spain	Italy	Greece	Other	E.Eu	Romania	Other	W.Eu	Israel	Cyprus	Syria	A.R.	Turkey	Other	Asia	Tunisia	Algeria	Morocco	Other	Af.	Americ	Oceani			
1980	186	32	17	82	171	1220	660	8935	57	31																				1613	
1985		35	38	100	208	1508	1508	12865	197	85																				15881	
1986	61210	365	38	99	253	1548	1444	13407	308	207																				17131	1950
1987	67371	440	40	123	289	1554	1647	14294	345	246																				18461	2024
1988	74275	464	45	150	374	1681	1732	15774	374	292																				19397	2227
1989	80922	486	46	148	422	1671	1800	16629	375	369																				20728	2392
1990	86941	532	28	146	480	1803	1956	17330	509	384																				21482	2325
1991	94825	659	33	171	549	1876	2183	18178	545	324																				21635	2510
1992	102797	565	20	113	645	1952	2254	17934	621	352																				23396	2656
1993	114392	476	15	126	691	2239	2249	20052	666	414																				25466	2879
1994	127730	464	22	136	697	2562	2596	21917	742	372																				27898	3201
1995	141600	452	24	160	738	2660	2726	23699	811	402																				29999	3463
2005	320019	1439	77	128	599	2412	4471	46797	2109	1048																				53282	6751
2015	559716	2186	143	269	1152	3905	5483	6591	71162	3706	1818																			10964	9110
INDEX 1995=100																															
2005	226	318	326	286	374	327	168	183	197	260	261	248	248	499	261	486	205	326	257	253	178	195									
2045	395	484	603	604	720	529	206	242	300	457	452	423	423	1115	507	1426	323	781	417	381	229	263									
GROWTH RATE (% annually)																															
1995-2005	8.5	12.3	12.5	11.1	14.1	12.6	5.3	6.2	7.0	10.0	10.1	9.5	9.5	17.4	10.1	17.1	7.5	12.5	9.9	9.7	5.9	6.9									
1995-2015	7.1	8.2	9.4	9.4	10.4	8.7	3.7	4.5	5.7	7.9	7.8	7.5	7.5	12.8	8.5	14.2	6.0	10.8	7.4	6.9	4.2	5.0									



## **APPENDIX 2**

### **Container Cargo Forecasting Volume of Industrial Products and Material in Thrace Region**



**TABLE A 2.1 Year 2005 Arrival cargo**

Year	Market	Transport mode	Commodity chapter										unit. ton total
			1	2	5	10	13	15	17				
2005	Domestic ratio		2,238,487	24,773	92,867	2,266,109	42,035	1,640,356	17,820	6,322,447	0		
			1,566,941	17,341	55,720	1,133,055	12,611	1,148,249	12,474	3,946,391	4		
		Maritime ratio	0	0	0	0	0	0	2,495	2,495	0	Containerized	
		Other ratio	1,566,941	17,341	55,720	1,133,055	12,611	1,148,249	9,979	3,943,896	0		
	Import ratio		671,546	7,432	37,147	1,133,055	29,425	492,107	5,346	2,376,057	0		
		Maritime ratio	0	0	0	0	0	0	3,742	3,742	0	Containerized	
		Other ratio	268,618	5,202	29,717	793,138	23,540	295,264	1,604	1,419,222	5		
			402,928	2,230	7,429	339,916	5,885	196,843	1,604	956,834	0		
			0.6	0.3	0.2	0.3	0.2	0.4	0.3	0.3	2		

**Commodity Chapter**

- (1). Agricultural products
- (2). Agricultural processed products
- (3). Animal or vegetable fats and oil
- (4). Flour
- (5). Beverages
- (6). Prepared animal fodder
- (7). Tobacco
- (8). Ore, slag and ash
- (9). Mineral fuels, mineral oils
- (10). Chemical products
- (11). fertilizer
- (12). Leather products

- (13). Wood articles and furniture
- (14). Paper
- (15). Textiles
- (16). Electrical machinery and parts
- (17). Miscellaneous articles
- (18). Stone articles
- (19). Ceramics
- (20). Iron and steel
- (21). Steel products
- (22). Non ferrous metal
- (23). Industrial machinery
- (24). Transport machinery

TABLE A 2.2 Year 2015 Arrival cargo

year	Market	Transport mode	Commodity							total
			1	2	5	10	13	15	17	
2015	Domestic ratio	Maritime ratio	3,911,618	50,542	161,484	4,192,969	83,014	3,346,695	40,330	11,786,652
			2,738,133	35,379	96,890	2,096,485	24,904	2,342,687	28,231	7,362,709
		Other ratio	0	0	0	209,648	0	0	0	209,648
		Other ratio	0	0	0	0.1	0	0	0	0
	Import ratio	Other ratio	2,738,133	35,379	96,890	1,886,836	24,904	2,342,687	25,408	7,150,237
			1	1	1	0.9	1	1	0.9	0.9
		Maritime ratio	1,173,485	15,163	64,594	2,096,485	58,110	1,004,009	12,099	4,423,944
		Other ratio	0.3	0.3	0.4	0.5	0.7	0.3	0.3	0.3
		Maritime ratio	586,743	10,614	51,675	1,677,188	52,299	602,405	8,469	2,989,392
		Other ratio	0.5	0.7	0.8	0.8	0.9	0.6	0.7	0.7
		Other ratio	586,743	4,549	12,919	419,297	5,811	401,603	3,630	1,434,551
		Other ratio	0.5	0.3	0.2	0.2	0.1	0.4	0.3	0.3

Containerized cargo

Containerized cargo

Commodity Chapter

- (1). Agricultural products
- (2). Agricultural processed products
- (3). Animal or vegetable fats and oil
- (4). Flour
- (5). Beverages
- (6). Prepared animal fodder
- (7). Tobacco
- (8). Ore, slag and ash
- (9). Mineral fuels, mineral oils
- (10). Chemical products
- (11). fertilizer
- (12). Leather products

(13). Wood articles and furniture

- (14). Paper
- (15). Textiles
- (16). Electrical machinery and parts
- (17). Miscellaneous articles
- (18). Stone articles
- (19). Ceramics
- (20). Iron and steel
- (21). Steel products
- (22). Non ferrous metal
- (23). Industrial machinery
- (24). Transport machinery

**TABLE A 2.3 Year 2005 Arrival Non container cargo and Containerizable cargo**

year	Market	Transport mode	Container ratio	Commodity					unit, ton	total
				18	19	20	21	22		
2005	Domestic ratio			40,766	300,078	1,031,376	126,729	111,514	56,744	1,667,207
				40,766	300,078	412,590	50,692	78,060	11,349	893,495
	Maritime ratio		16,306	0	82,510	20,277	7,806	0	0	126,899
			0.4	0	0.2	0.4	0.1	0	0	0
	Other ratio		24,460	300,078	330,040	30,415	70,254	11,349	11,349	766,596
			0.6	1	0.8	0.6	0.9	1	1	1
	Import ratio		0	0	618,826	76,037	33,454	45,395	45,395	773,712
			0	0	0.6	0.6	0.3	0.8	0.8	0.8
	Maritime ratio		0	0	371,295	76,037	33,454	45,395	45,395	526,182
			0	0	0.6	1	1	1	1	1
Other ratio		0	0	371,295	60,830	26,763	36,316	36,316	495,205	
		0	0	1	0.8	0.8	0.8	0.8	0.8	
Non container ratio		0	0	0	15,207	6,691	9,079	9,079	30,977	
		0	0	0	0.2	0.2	0.2	0.2	0.2	
Container ratio		0	0	247,530	0	0	0	0	247,530	
		0	0	0.4	0	0	0	0	0	

Containerizable cargo

- (1). Agricultural products
- (2). Agricultural processed products
- (3). Animal or vegetable fats and oil
- (4). Flour
- (5). Beverages
- (6). Prepared animal fodder
- (7). Tobacco
- (8). Ore, slag and ash
- (9). Mineral fuels, mineral oils
- (10). Chemical products
- (11). fertilizer
- (12). Leather products
- (13). Wood articles and furniture
- (14). Paper
- (15). Textiles
- (16). Electrical machinery and parts
- (17). Miscellaneous articles
- (18). Stone articles
- (19). Ceramics
- (20). Iron and steel
- (21). Steel products
- (22). Non-ferrous metal
- (23). Industrial machinery
- (24). Transport machinery

**TABLE A 2.4 Arrival Non container cargo and Containerizable cargo**

year	Market	Transport mode	Container ratio	Commodity					unit, ton	total
				18	19	20	21	22		
2015	Domestic ratio	Maritime ratio		72,609	512,583	1,152,657	265,552	173,743	118,904	2,296,048
				1	1	0.3	0.4	0.7	0.2	
	Import ratio	Other ratio		29,044	512,583	345,797	106,221	121,620	23,781	1,182,611
				0.4	0	0.2	0.4	0.1	0	
		Maritime ratio		43,565	512,583	276,638	63,732	109,458	23,781	1,029,757
				0.6	1	0.8	0.6	0.9	1	
		Maritime ratio	Non container ratio	0	0	806,860	159,331	52,123	95,123	1,113,437
				0	0	0.7	0.6	0.3	0.8	
		Other ratio	Container ratio	0	0	564,802	159,331	52,123	95,123	871,379
				0	0	0.7	1	1	1	
				0	0	564,802	127,465	41,698	76,099	810,064
				0	0	1	0.8	0.8	0.8	
				0	0	0	31,866	10,425	19,025	61,315
				0	0	0	0.2	0.2	0.2	
		Other ratio		0	0	242,058	0	0	0	242,058
				0	0	0.3	0	0	0	

Containerizable cargo

- |                                       |                                      |
|---------------------------------------|--------------------------------------|
| (1). Agricultural products            | (13). Wood articles and furniture    |
| (2). Agricultural processed products  | (14). Paper                          |
| (3). Animal or vegetable fats and oil | (15). Textiles                       |
| (4). Flour                            | (16). Electrical machinery and parts |
| (5). Beverages                        | (17). Miscellaneous articles         |
| (6). Prepared animal fodder           | (18). Stone articles                 |
| (7). Tobacco                          | (19). Ceramics                       |
| (8). Ore, slag and ash                | (20). Iron and steel                 |
| (9). Mineral fuels, mineral oils      | (21). Steel products                 |
| (10). Chemical products               | (22). Non ferrous metal              |
| (11). fertilizer                      | (23). Industrial machinery           |
| (12). Leather products                | (24). Transport machinery            |

TABLE A 2.5 Year 2005 Shipment volume

year	Market	Transport mode	Commodity														total
			2	3	5	10	12	13	14	15	16	17					
2005	Domestic ratio		2,030,406	250,958	85,542	1,490,036	21,443	34,860	1,226,071	627,186	305,956	593	6,073,051	Containerized cargo			
			1,421,284	200,766	133,802	1,043,025	30,622	27,888	980,857	250,874	122,382	28,231	4,239,733				
		Maritime ratio	142,128	40,153	0	0	0	0	0	0	0	2,823	Containerized cargo				
		Other ratio	0.1	0.2	0	0	0	0	0	0	0.1						
	Export ratio		1,279,156	160,613	133,802	1,043,025	30,622	27,888	980,857	250,874	122,382	25,408	4,054,628	Containerized cargo			
			609,122	50,192	14,867	447,011	13,124	6,972	245,214	376,312	183,574	12,099	1,958,485				
		Maritime ratio	182,737	20,077	11,894	178,804	5,250	3,486	147,129	112,893	146,839	7,259	Containerized cargo				
		Other ratio	0.3	0.4	0.6	0.4	0.4	0.5	0.6	0.3	0.6						
			426,385	30,115	2,973	268,206	7,874	3,486	98,086	263,418	36,715	7,259	1,144,518				
			0.7	0.6	0.4	0.6	0.6	0.5	0.4	0.7	0.2	0.4					

Commodity Chapter

- (1). Agricultural products
- (2). Agricultural processed products
- (3). Animal or vegetable fats and oil
- (4). Flour
- (5). Beverages
- (6). Prepared animal fodder
- (7). Tobacco
- (8). Ore, slag and ash
- (9). Mineral fuels, mineral oils
- (10). Chemical products
- (11). fertilizer
- (12). Leather products

- (13). Wood articles and furniture
- (14). Paper
- (15). Textiles
- (16). Electrical machinery and parts
- (17). Miscellaneous articles
- (18). Stone articles
- (19). Ceramics
- (20). Iron and steel
- (21). Steel products
- (22). Non ferrous metal
- (23). Industrial machinery
- (24). Transport machinery

TABLE A 2.6 Year 2015 Shipment volume

year	Market	Transport mode	Commodity														unit. Ton total	
			2	3	5	10	12	13	14	15	16	17						
2015	Domestic ratio		3,529,457	436,245	148,669	2,711,927	43,746	68,864	2,354,648	1,279,595	641,110	40,330	11,254,587					
			2,470,620	348,994	133,802	1,898,349	30,622	55,091	1,883,718	511,837	256,444	28,231	7,617,709					
		Maritime ratio	247,062	34,899	0	0	0	0	0	0	0	0	281,961					Containerized cargo
		Other ratio	0.1	0.1	0	0	0	0	0	0	0	0	0					
	Export ratio		2,223,558	314,095	133,802	1,898,349	30,622	55,091	1,883,718	511,837	256,444	28,231	7,335,748					
			1,058,837	87,249	14,867	813,578	13,124	13,773	470,930	767,756	384,666	12,099	3,636,878					
		Maritime ratio	0.3	0.2	0.1	0.3	0.3	0.2	0.2	0.6	0.6	0.3	0.6					
		Other ratio	0.5	0.6	0.6	0.6	0.4	0.5	0.6	0.5	0.8	0.6	0.6					
			529,419	52,349	11,894	488,147	5,250	6,886	282,558	230,327	307,733	7,259	1,921,821					
			529,419	34,899	2,973	325,431	7,874	6,886	188,372	537,429	76,933	7,259	1,717,477					
		Other ratio	0.5	0.4	0.4	0.4	0.6	0.5	0.4	0.7	0.2	0.4	0.4					

Commodity Chapter

- (1). Agricultural products
- (2). Agricultural processed products
- (3). Animal or vegetable fats and oil
- (4). Flour
- (5). Beverages
- (6). Prepared animal fodder
- (7). Tobacco
- (8). Ore, slag and ash
- (9). Mineral fuels, mineral oils
- (10). Chemical products
- (11). fertilizer
- (12). Leather products

- (13). Wood articles and furniture
- (14). Paper
- (15). Textiles
- (16). Electrical machinery and parts
- (17). Miscellaneous articles
- (18). Stone articles
- (19). Ceramics
- (20). Iron and steel
- (21). Steel products
- (22). Non ferrous metal
- (23). Industrial machinery
- (24). Transport machinery



**TABLE A 2.7 Year 2005 Non container cargo Shipment**

year	Market	Transport mode	Commodity						Total	unit. Ton
			18	19	20	21	22	23		
2005	Domestic ratio		42,071	330,771	478,014	4,488	42,837	321,000	175,486	1,394,667
			33,657 0.8	264,617 0.8	286,808 0.6	3,590 0.8	34,270 0.8	256,800 0.8	140,389 0.8	1,020,131
		Maritime ratio	3,366 0.1	0 0	57,362 0.2	0 0	0 0	25,680 0.1	14,039 0.1	100,446
		Other ratio	30,291 0.9	264,617 1	229,447 0.8	3,590 1	34,270 1	231,120 0.9	126,350 0.9	919,685
	Export ratio		8,414 0.2	66,154 0.2	191,206 0.4	898 0.2	8,567 0.2	64,200 0.2	35,097 0.2	374,536
			Maritime ratio	6,731 0.8	26,462 0.4	95,603 0.5	539 0.6	5,140 0.6	38,520 0.6	21,058 0.6
		Other ratio	1,683 0.2	39,693 0.6	95,603 0.5	359 0.4	3,427 0.4	25,680 0.4	14,039 0.4	180,483

- |                                       |                                      |
|---------------------------------------|--------------------------------------|
| (1). Agricultural products            | (13). Wood articles and furniture    |
| (2). Agricultural processed products  | (14). Paper                          |
| (3). Animal or vegetable fats and oil | (15). Textiles                       |
| (4). Flour                            | (16). Electrical machinery and parts |
| (5). Beverages                        | (17). Miscellaneous articles         |
| (6). Prepared animal fodder           | (18). Stone articles                 |
| (7). Tobacco                          | (19). Ceramics                       |
| (8). Ore, slag and ash                | (20). Iron and steel                 |
| (9). Mineral fuels, mineral oils      | (21). Steel products                 |
| (10). Chemical products               | (22). Non ferrous metal              |
| (11). fertilizer                      | (23). Industrial machinery           |
| (12). Leather products                | (24). Transport machinery            |

TABLE A 2.8 Year 2015 Non container cargo Shipment

year	Market	Transport mode	Commodity				unit. Ton total			
			18	19	20	21		22	23	24
2015	Domestic ratio		74,933	589,140	806,913	7,576	72,310	672,634	367,719	2,591,225
			59,946 0.8	471,312 0.8	484,148 0.6	6,061 0.8	57,848 0.8	538,107 0.8	294,175 0.8	1,911,597
		Maritime ratio	5,995 0.1	0 0	96,830 0.2	0 0	0 0	53,811 0.1	29,418 0.1	186,052
		Other ratio	53,952 0.9	471,312 1	387,318 0.8	6,061 1	57,848 1	484,296 0.9	264,758 0.9	1,725,545
	Export ratio		14,987 0.2	117,828 0.2	322,765 0.4	1,515 0.2	14,462 0.2	134,527 0.2	73,544 0.2	679,628
			11,989 0.8	47,131 0.4	161,583 0.5	909 0.6	8,677 0.6	80,716 0.6	44,126 0.6	354,932
		Maritime ratio	2,997 0.2	70,697 0.6	161,383 0.5	606 0.4	5,785 0.4	55,811 0.4	29,418 0.4	324,696
		Other ratio								

- |                                       |                                      |
|---------------------------------------|--------------------------------------|
| (1). Agricultural products            | (13). Wood articles and furniture    |
| (2). Agricultural processed products  | (14). Paper                          |
| (3). Animal or vegetable fats and oil | (15). Textiles                       |
| (4). Flour                            | (16). Electrical machinery and parts |
| (5). Beverages                        | (17). Miscellaneous articles         |
| (6). Prepared animal fodder           | (18). Stone articles                 |
| (7). Tobacco                          | (19). Ceramics                       |
| (8). Ore, slag and ash                | (20). Iron and steel                 |
| (9). Mineral fuels, mineral oils      | (21). Steel products                 |
| (10). Chemical products               | (22). Non ferrous metal              |
| (11). fertilizer                      | (23). Industrial machinery           |
| (12). Leather products                | (24). Transport machinery            |