

# **Recent development in Maritime transport and challenges ahead for ports**

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## A. Recent Developments

### 1. World Economy and Seaborne Trade

# World economic growth 2005 – 2008<sup>a</sup>

<i>Region / Country</i>	2005	2006	2007	2008 <sup>b</sup>
<b>WORLD</b>	3.5	3.9	3.8	2.8
<b>Developed countries</b>	<b>2.4</b>	<b>2.8</b>	<b>2.5</b>	<b>1.5</b>
<i>of which:</i>				
United States	3.1	2.9	2.2	1.0
Japan	1.9	2.4	2.1	1.3
EU (27)	1.9	3.1	2.9	2.1
<i>of which:</i>				
Germany	0.9	3.0	2.5	1.7
France	1.9	2.2	2.1	1.9
Italy	0.2	1.9	1.5	0.5
United Kingdom	1.9	2.8	3.0	2.3
<b>Developing countries</b>	<b>6.6</b>	<b>7.1</b>	<b>7.3</b>	<b>6.3</b>
<i>of which:</i>				
China	10.4	11.1	11.9	9.6
India	8.8	9.4	8.5	8.2
Brazil	3.2	3.7	5.4	4.2
South Africa	5.1	5.4	5.1	4.1
<b>Economies in Transition</b>	<b>6.6</b>	<b>7.5</b>	<b>8.4</b>	<b>7.3</b>
<i>of which:</i>				
Russian Federation	6.4	6.7	8.1	7.5

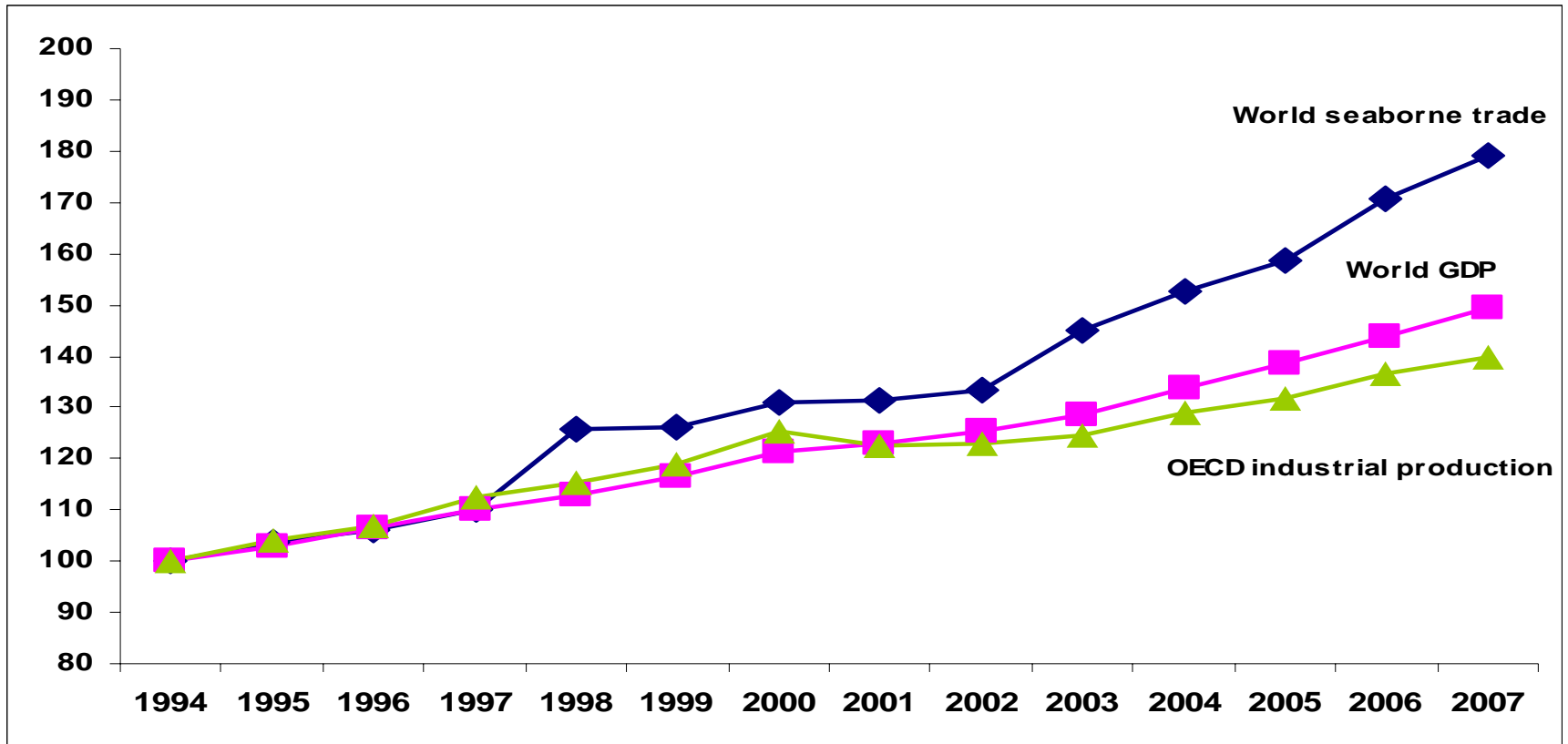
Source: UNCTAD secretariat calculations based on UNCTAD Handbook of Statistics online; United Nations, Department of Economic and Social Affairs (UN/DESA), LINK Global Economic Outlook 2008 (mid-2008 update, [http://www.un.org/esa/analysis/link/global\\_economic\\_outlook.htm](http://www.un.org/esa/analysis/link/global_economic_outlook.htm)); and national sources.

a Calculations for country aggregates are based on real GDP in dollars at base year 2000.

b Forecast.

# Indices for world economic growth (GDP), OECD industrial production, and world seaborne trade (volume), 1994 – 2007

(1994 = 100)



Source: UNCTAD secretariat on the basis of *OECD Main Economic Indicators*, April 2008; UNCTAD Trade Development Report 2008 and UNCTAD *Review of Maritime Transport*, various issues.

# Development of international seaborne trade, selected years

*(Millions of tonnes)*

43%

Year	Oil	Main bulks <sup>a</sup>	Other Dry cargo	Total (all cargoes)
1970	1,442	448	676	2,566
1980	1,871	796	1,037	3,704
1990	1,755	968	1,285	4,008
2000	2,163	1,288	2,533	5,984
2006	2,595	1,876	3,181	7,652
2007 <sup>b</sup>	2,681	1,997	3,344	8,022

66%

Source:

a

b

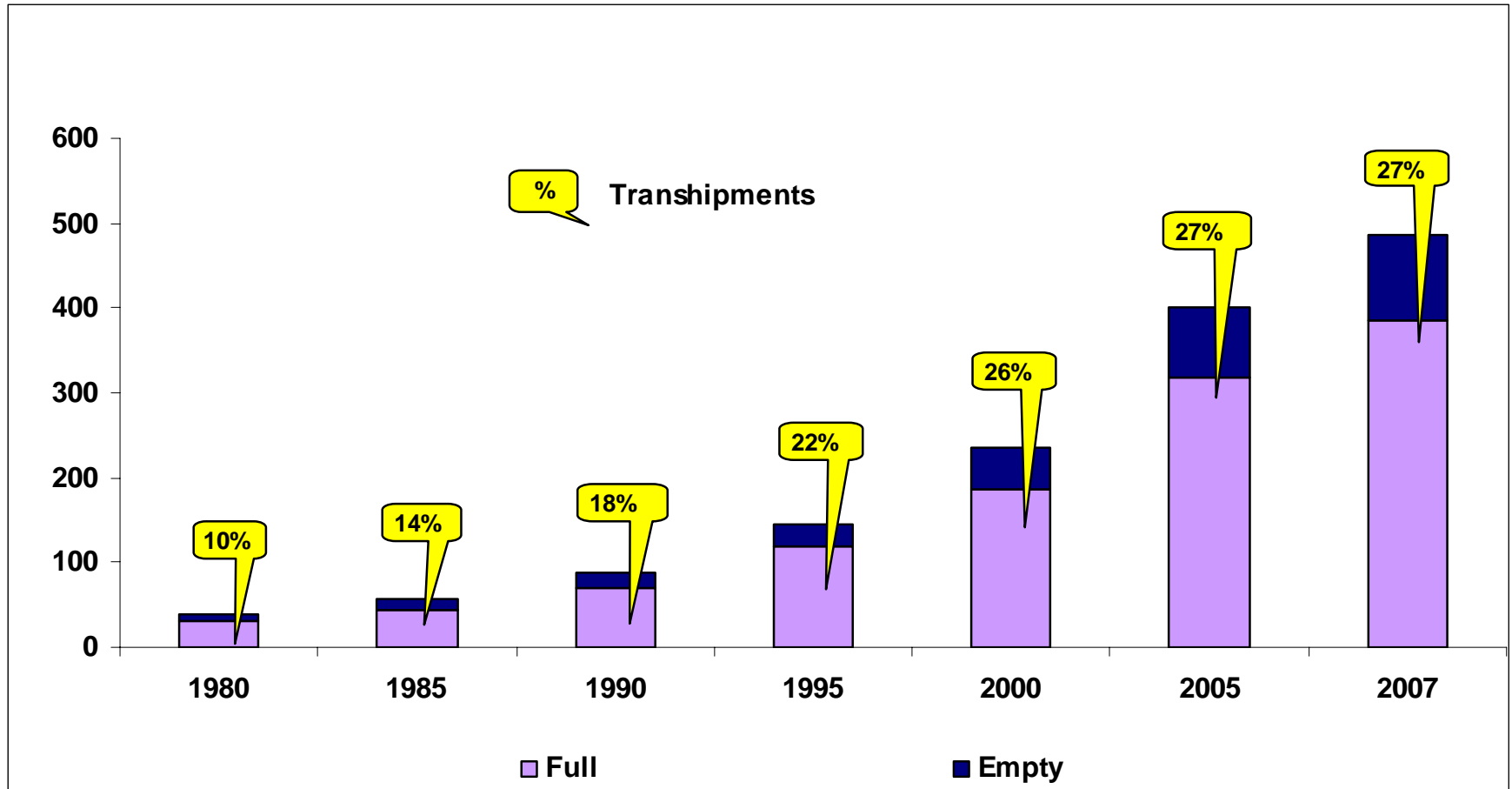
Estimated by UNCTAD secretariat on the basis of annex II and data supplied by ports and specialized sources.

a Iron ore, grain, coal, bauxite/alumina and phosphate.

b Preliminary.

# International container port traffic, 1980 – 2008

(Million teus)



## Major Maritime Trade Routes: Container Traffic, 2007 (Million TEUs)



⇒⇒⇒ Transpacific Eastbound

⇒⇒⇒ Transatlantic Eastbound

⇒⇒⇒ Asia-Europe Eastbound

□ FE = Far East

● Main passages

⇐⇐⇐ Transpacific Westbound

⇐⇐⇐ Transatlantic Westbound

⇐⇐⇐ Asia-Europe Westbound

□ LA = Latin America

□ ME = Middle East

□ AF = Africa

□ US = United States

□ TEU = Twenty-Foot Equivalent Unit

□ Eur = Europe

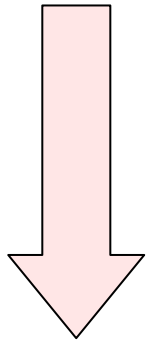
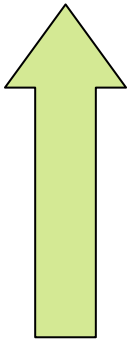


## 2. Freight rates

# Tanker freight indices, 2005–2008

(monthly figures)

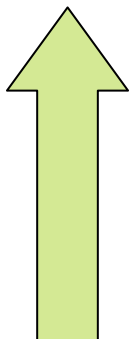
	Lloyd's Shipping Economist				Baltic Tanker		
	>200	120–200	70–120	25–70	Clean	Dirty Index	Clean Index
<b>October</b>	87	147	190	213	217	1 281	1 095
<b>November</b>	74	118	133	199	194	1 223	853
<b>December</b>	66	136	189	210	251	996	931
<b>Average</b>	93	141	164	228	247	1 295	1 112
<b>2007</b>							
<b>January</b>	63	124	187	209	219	1 316	1 185
<b>February</b>	65	116	159	237	226	1 190	907
<b>March</b>	81	112	145	220	282	1 094	1 065
<b>April</b>	63	122	145	229	264	1 398	1 096
<b>May</b>	79	108	161	235	244	1 236	1 045
<b>June</b>	63	110	113	211	242	1 006	1 151
<b>July</b>	59	91	128	216	208	1 026	941
<b>August</b>	52	85	97	185	174	977	900
<b>September</b>	51	77	102	170	158	801	770
<b>October</b>	57	104	134	180	170	902	767
<b>November</b>	72	126	148	205	198	1 089	812
<b>December</b>	201	232	214	279	239	1 535	1 184
<b>Average</b>	76	117	144	215	219	1 131	985
<b>2008</b>							
<b>January</b>	112	124	178	205	215	1'914	1'083
<b>February</b>	97	119	141	182	195	1'174	938
<b>March</b>	108	156	175	202	197	1'164	946
<b>April</b>	110	187	217	239	234	1'482	873
<b>May</b>	182	239	247	271	279	1'701	1'192
<b>June</b>	182	210	237	324	326	1'921	1'388
<b>Average</b>	132	173	199	237	241	1'559	1'070



Source: Executive Summary in *Lloyd's Shipping Economist*, several issues; Baltic Tanker indices reported for the first working day of the month. Ship sizes are expressed in deadweight capacity

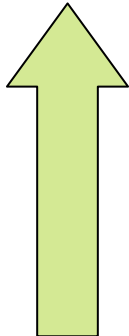
# Dry cargo freight indices, 2004–2007

Period	Dry cargo tramp time-charter (1972 = 100)				Dry cargo tramp trip-charter (1985 = 100)			
	2005	2006	2007	2008	2005	2006	2007	2008
January	505	302	491	812	677	294	632	1 018
February	481	298	480	657	715	292	577	908
March	530	327	550	810	565	321	644	1 221
April	507	326	576	795	624	325	707	1 080
May	440	323	671	1 055	552	304	712	1 544
June	373	331	626	1 009	412	359	759	
July	313	360	673		342	421	875	
August	290	417	718		285	475	920	
September	328	447	828		352	518	1 078	
October	379	450	985		391	522	1 044	
November	346	447	1 013		376	463	1 280	
December	320	484	926		332	594	1 251	
<b>Annual average</b>	<b>401</b>	<b>376</b>	<b>711</b>	<b>856</b>	<b>469</b>	<b>407</b>	<b>873</b>	<b>1 154</b>



# Freight rates (market averages) per TEU on the three major liner trade routes (*\$ per TEU and percentage change*)

	Trans-Pacific		Europe-Asia		Transatlantic	
	Asia-USA	USA-Asia	Europe-Asia	Asia-Europe	USA-Europe	Europe-USA
<b>2006</b>						
First quarter	1836	815	793	1454	995	1829
Change (%)	-2.2	-1.2	-3.9	-14.9	-1.4	0.8
Second quarter	1753	828	804	1408	1010	1829
Change (%)	-4.5	1.6	1.4	-3.2	1.5	0.0
Third quarter	1715	839	806	1494	1041	1854
Change (%)	-2.2	1.3	0.2	6.1	3.1	1.4
Fourth quarter	1671	777	792	1545	1066	1762
Change (%)	-2.6	-7.4	-1.7	3.4	2.4	-5.0
<b>2007</b>						
First quarter	1643	737	755	1549	1032	1692
Change (%)	-1.7	-5.1	-4.7	0.3	-3.2	-4.0
Second quarter	1675	765	744	1658	1067	1653
Change (%)	1.9	3.8	-1.5	7.0	3.4	-2.3
Third quarter	1707	780	777	1952	1115	1725
Change (%)	1.9	2.0	4.4	17.7	4.5	4.4
Fourth quarter	1707	794	905	2054	1147	1766
Change (%)	0.0	1.8	16.5	5.2	2.9	2.4
<b>2008</b>						
First quarter	1725	861	968	2021	1193	1700
Change (%)	1.1	8.4	7.0	-1.6	4.0	-3.7

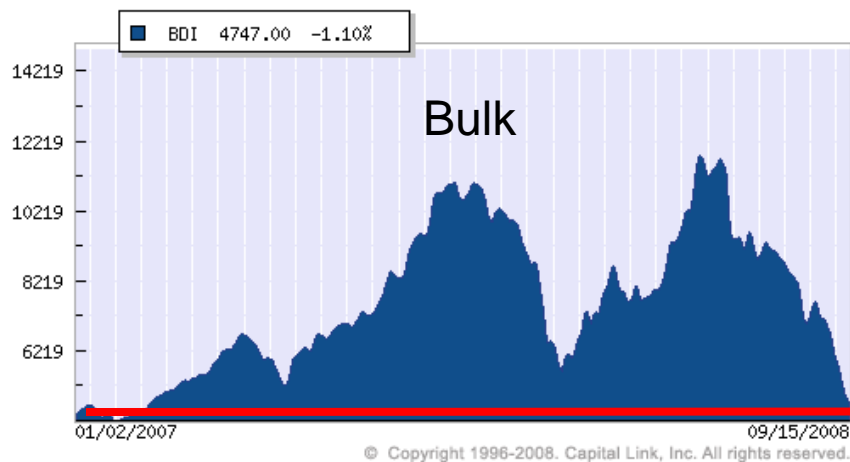
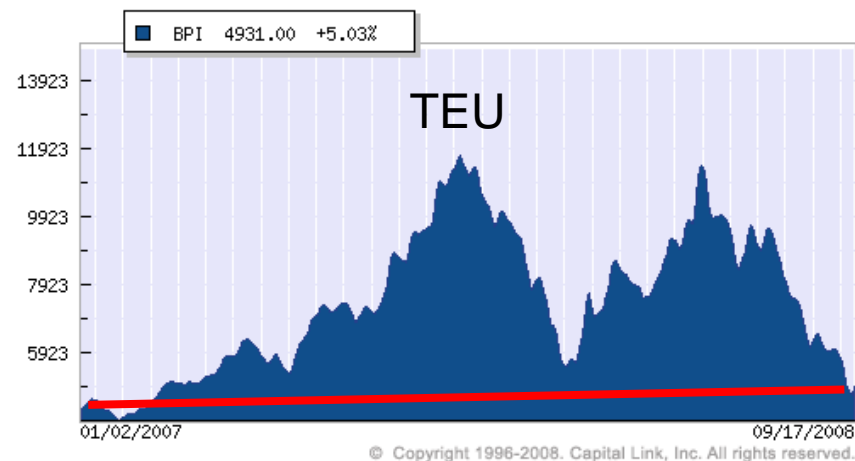
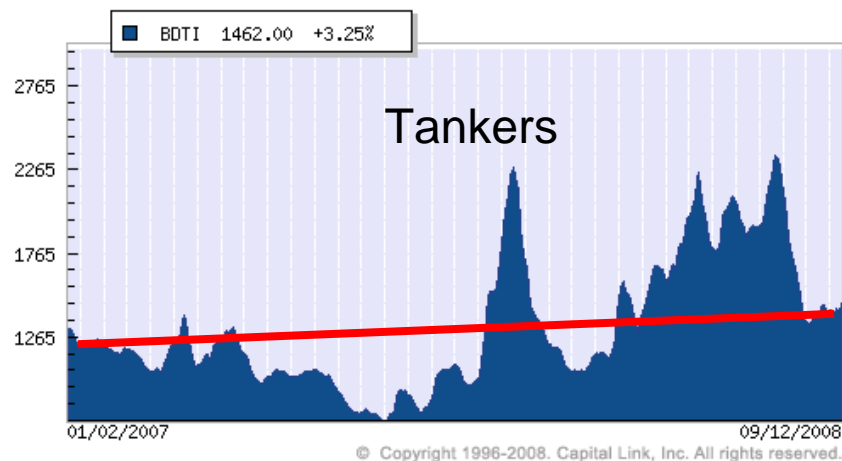


**YOY  
14.3%**

**YOY  
32.9%**

# Various Indices

## Jan 07 – Sept 08



### Baltic Indices

Baltic Dry	4,856 (+2.02%)
Baltic Capesize	6,578 (+1.65%)
Baltic Panamax	4,931 (+5.03%)
Baltic Supramax	3,077 (-0.29%)
Baltic Handysize	1,700 (-0.64%)

As of 09/17/08

Baltic Dirty Tanker	1,534 (+1.99%)
Baltic Clean Tanker	1,451 (+0.69%)

As of 09/17/08

## 3. World fleet

# World fleet

- The world merchant fleet expanded by 7.2 per cent during 2007 to 1.12 billion deadweight tons (dwt) at the beginning of 2008.
- New deliveries achieved a record totalling 81.9 million dwt in 2007 (71.1 million dwt in 2006).
- During 2007, 2,782 cargo carrying commercial vessels of 100 GT and above were delivered, an increase of 16% over 2006.

The top 35 countries together control 95.35 per cent of the world fleet

# Ownership of the world fleet by country

		<b>Ships</b>	<b>DWT</b>	<b>Foreign flag as a % of total</b>	<b>Total as a % of world total January 2008</b>	<b>Total as a % of world total January 2007</b>	<b>Change in percentage share</b>
<b>1</b>	<b>Greece</b>	3 115	174 570 471	68.06	16.81	17.39	-0.58
<b>2</b>	<b>Japan</b>	3 515	161 747 102	92.82	15.58	15.07	0.50
<b>3</b>	<b>Germany</b>	3 208	94 222 787	84.52	9.07	8.69	0.38
<b>4</b>	<b>China</b>	3 303	84 881 703	59.53	8.18	7.19	0.98
<b>5</b>	<b>Norway</b>	1 827	46 872 096	69.74	4.51	4.98	-0.46
<b>6</b>	<b>United States</b>	1 769	39 828 150	49.03	3.84	4.93	-1.10
<b>7</b>	<b>Korea, Republic of</b>	1 140	37 703 707	49.28	3.63	3.30	0.33
<b>8</b>	<b>Hong Kong, China</b>	657	33 424 439	45.46	3.22	4.60	-1.38
<b>9</b>	<b>Singapore</b>	869	28 632 554	42.58	2.76	2.63	0.13
<b>10</b>	<b>Denmark</b>	861	27 434 643	61.85	2.64	2.24	0.41



# Oil tankers

- In 2007, 369 oil tankers (over 10,000 dwt) or 29.5m dwt were delivered
- Oil tankers continue to be the largest vessels ordered, but the average vessel size has decreased from 142,001 dwt in 2000 to 110,470 dwt in 2007.



# Dry bulk

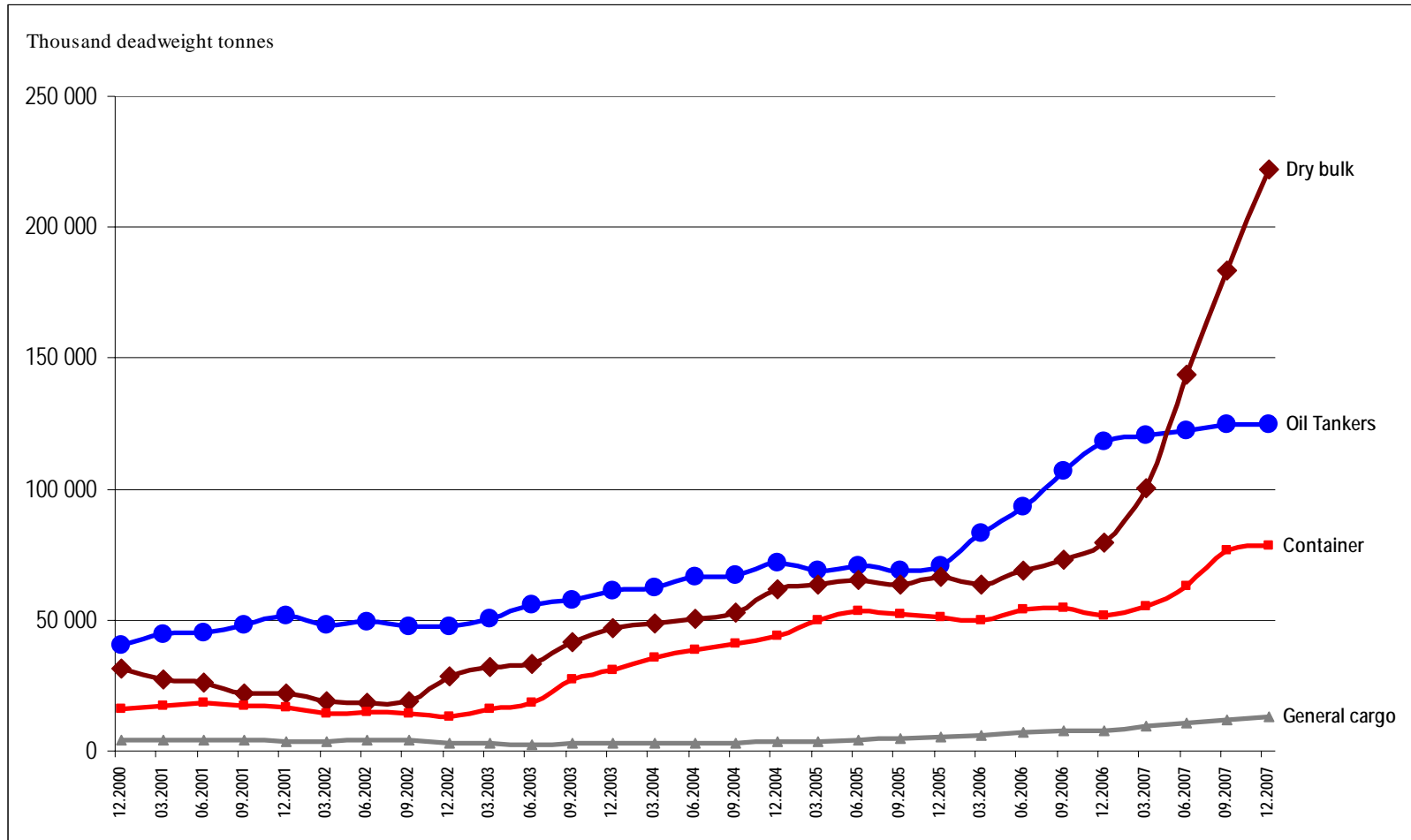


- In total, there were 315 dry bulk carriers delivered in 2007, with a combined tonnage of 24.7 million dwt.
- The average dwt per unit has decreased from 81,290 dwt in 2006, to 78,413 dwt, an opposite trend for oil tankers.

# Orderbook

- Vessel orders are at their highest level ever, reaching 10,053 ships with a total tonnage of 495 million dwt,
  - including 222 million dwt of dry bulk carriers (57% of the existing dry bulk fleet). Dry bulk tonnage on order is 12 times higher than it was in 2002.
  - including 1,435 container ships, an historical high. Containerized tonnage on order is six times higher than 2002.

# World Tonnage on order, 2000 - 2007a



Source:  
a

Compiled by the UNCTAD Secretariat on the basis of data supplied by Lloyd's Register - Fairplay.  
Ships of 100 GT and above.

# Order book - May 2008

- The global containership newbuildings order book reached its highest-ever level, standing at 1,528 ships with a total container carrying capacity of 6.7 million TEU.
- Among those, there are 54 ships on order with a capacity of 13,000 TEU and above.
  - COSCON ordered 8 - 13,350 TEU units
  - China Shipping ordered 8 - 13,000 TEU units
  - Various orders by MSC, Maersk, Hanjin and CGM-CMA.

# Demolition of ships

- 2007 saw record lows in demolitions.
- In total, demolitions were equivalent to only 0.4 per cent of the existing world fleet.
- Tanker tonnage represented half of the tonnage demolished.
- Hardly any dry bulk carriers were demolished in 2007,



## B. Challenges Ahead for Ports

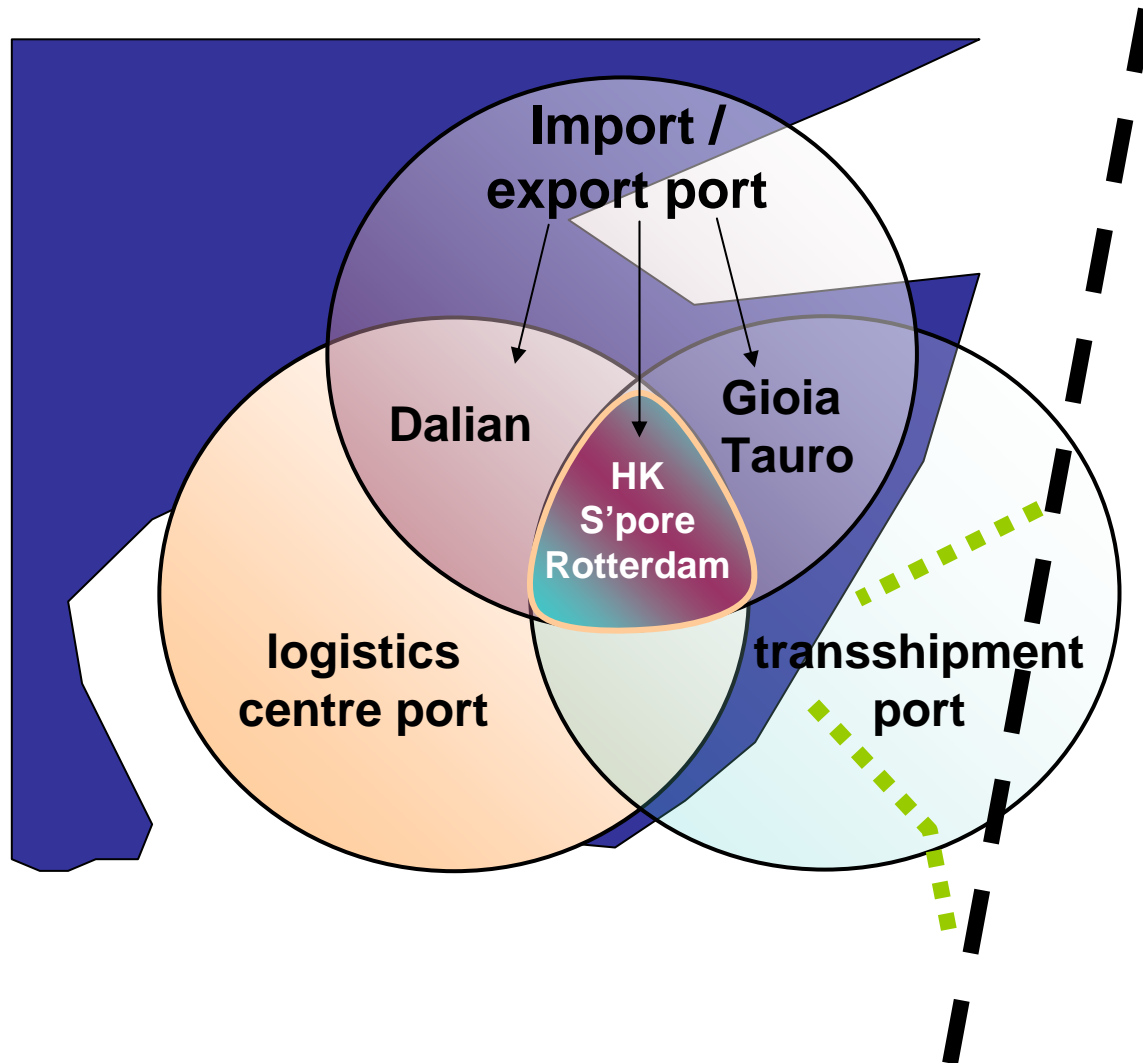


# Ranking of ports by TEUs





# Expanding port opportunities



Port efficiency has to improve because port customers are getting bigger.



In 2006 the largest containership ever built, Emma Maersk, was launched with a reported capacity of 12,508 TEU capacity she requires a depth of 16 metres  
156,907 DWT (carrying capacity)

# Leading 20 service operators of containerships at the beginning of 2008

*(Number of ships and total shipboard capacity deployed (TEUs))*

Ranking	Operator	Country/territory	No. of ships in 2008	TEU capacity in 2008
1	Maersk Line	Denmark	446	1'638'898
2	MSC	Switzerland	359	1'201'121
3	CMA-CGM Group	France	238	701'223
4	Evergreen	Taiwan Province of China	177	620'610
5	Hapag Lloyd	Germany	142	491'954
6	COSCON	China	141	426'814
7	CSCL	China	122	418'818
8	APL	Singapore	117	394'804
9	OOCL	Hong Kong (China)	84	351'542
10	NYK	Japan	87	331'083
<b>Subtotal</b>			<b>1'913</b>	<b>6'576'867</b>
11	MOL	Japan	104	325'030
12	Hanjin	Republic of Korea	74	321'917
13	K Line	Japan	91	293'321
14	Yang Ming	Taiwan Province of China	83	276'016
15	Zim	Israel	84	243'069
16	Hamburg Sud	Germany	76	196'632
17	HMM	Republic of Korea	45	194'350
18	PIL	Singapore	72	140'135
19	Wan Hai	Taiwan Province of China	75	125'393
20	CSAV	Chile	48	108'927
<b>Total 1-20</b>			<b>2'665</b>	<b>8'801'657</b>
<b>World container cellular fleet at 1 January 2008</b>			<b>8'762</b>	<b>12'657'725</b>

**YOY  
15.5%**

# Concepts aimed at improving port efficiency - Indented berths



Ceres Paragon – Amsterdam  
Maximum discharge rate- 300 TEUs ph



# Jebel Ali Port (United Arab Emirates)

- 8,571 moves in 41 hours for the 9,000 TEU ship the *MSC Rania*.
- Average moves per hour > 60



Twin FEU



装 卸 的 港 口  
时 相 安 全 处 处 要 要 王







110



61t

61t

61t

61t





# Chiwan Container Terminal, Shenzhen, China







120T/65m 12

ZPMC  
1999

100T/65m 11

吊钩下严禁站人

# Port development

- Ports are a **catalyst** for trade development.
  - Well developed ports attract shippers and spur local enterprises to export
  - Consolidation services allow smaller exporters to group cargo
- National transport systems need to be **linked** together with international trade networks.
  - Road and rail networks should extend into the hinterland
  - National networks should extend to and across national borders to regional networks (e.g. AH, TAR)
  - ICD should be situated at nodal points combining multimodal transport.
- Creating an **enabling environment** for services to develop within and around ports.
  - Value added services (e.g. repackaging, engineering and design, knowledge processing, light manufacturing and processing, warehousing and logistics) can be performed with ports or adjoining FTZ.
  - Enabling procedures such as customs inspection to be performed at an ICD may help improve transport efficiency and lower costs.

# Prerequisites for attracting international terminal operators



UNCTAD meeting on Globalization of Port Logistics: Opportunities and Challenges for Developing Countries, December 2007, Geneva

- A clean and transparent bidding process
- Quality and Capacity landside connections (multi-modal) and port infrastructure
- No Government cap on profits
- Good safety and security requirements
- A training and retrenchment of labour plan
- A clear role for the port authority (e.g. landlord model)
- Smooth customs procedures
- Absence of corruption

# Conclusions

## Ports need

- Physical side:
  - Longer container berths
  - Deeper alongside access
  - Wider turning circles
  - Specialised cargo handling equipment
  - Multimodal connections
- Soft side:
  - Sophisticated workflows supported by software programs.
  - An enabling environment which is conducive to creating value added service within or adjoining to ports

A key challenge is how to retain the necessary safeguards to protect revenue, security, the environment and employment while maintaining flexibility to cater for changing market forces.