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in brief

- Between January–June 2005, total cargo throughput and total container traffic was 57.064 million tonnes and 2.244 million teus respectively (page 19).
- The five-port average crane rate increased from 27.2 containers per hour in the March quarter 2005 to 27.7 containers per hour in the June quarter 2005. (page 3).
- The five-port average vessel working rate has increased from 34.9 containers per hour in the March quarter 2005 to 35.3 in the June quarter 2005. (page 3).
- The five-port total of container moves decreased from 744 032 in the March quarter 2005 to 743 597 in the June quarter 2005 (page 3).
- Harbour towage charges increased at three of the five major ports during the financial year 2004–2005. (page 20).
- The national port interface cost index for exporting a container has risen to \$623/teu in 2001 constant prices for January–June 2005. This is higher than July–December 2004 when it was \$579/teu. (page 10).
- Berth availability was 84.7 per cent in the March quarter 2005 and 91.5 per cent in the June quarter 2005 (page 25).
- The tonnage of cargo estimated as moved under coastal permits has risen from 15 million tonnes in the calendar year 2004 to 15.2 million tonnes for the financial year 2004–2005 (page 21).
- Total ship visits increased by 8 per cent in the financial year ended June 2005 (page 16).

Feature Article

This issue contains an article on Trends in Australian International Sea Trade. It examines Australia's maritime trade 1994–1995 to 2004–2005, including commodity exports and imports, trade regions and port activity.

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STEVEDORING PRODUCTIVITY

National crane rate productivity, as measured by the five port average, increased to 27.2 containers per hour in the March quarter 2005 (0.02 per cent lower than the March quarter 2004 rate of 27.7). In the June quarter 2005, the crane rate rose slightly to 27.7 containers per hour (0.02 per cent lower than the record June quarter 2004 rate of 28.2).

Table 1 presents the June quarter 2003 to June quarter 2005 indicators of stevedoring productivity at the five major Australian container ports, expressed in container moves per hour. Figures 1 to 6 present these data over the June quarter 1998 to June quarter 2005 period. The data for Brisbane, Sydney, Melbourne and Fremantle are weighted averages for the container terminals operated by P&O Ports and Patrick. The Adelaide data are for the DPI container terminal.

In summary:

- the five-port average crane rate (average productivity per crane while the ship is worked) was 27.5 in the September quarter 2004, 27.1 in the December quarter 2004, 27.2 in the March quarter 2005, and 27.7 containers per hour for the June quarter 2005;
- the five port total of container moves through reporting terminals decreased from 744 032 in the March quarter 2005 to 743 597 moves in the June quarter 2005, a decrease of 9 per cent below the December 2004 record of 819 744 containers; however in comparison to the June quarter 2004 container moves were up 0.9 per cent in the June quarter 2005.
- the five-port average vessel working rate (productivity per ship based on the time labour is aboard the ship) was 32.6 in the September quarter 2004, 33.1 in the December quarter 2004, 34.9 in the March quarter 2005, and 35.3 containers per hour in the June quarter 2005, which was 3.6 per cent higher than the rate of 34.1 achieved in the June quarter 2004.

The *Brisbane* (P&O Ports, Patrick) average crane rate increased from 26.5 in the December quarter 2004 to 27.2 in the March quarter 2005, and remained 27.2 containers per hour in the June quarter 2005. The vessel working rate increased from 24.6 containers per hour in the December quarter 2004 to 26.1 in the March quarter 2005, and to 26.7 in the June quarter 2005.

The *Sydney* (P&O Ports, Patrick) average crane rate was 26.7 in the December quarter 2004 and remained 26.7 in the March quarter 2005. It increased to 27.7 containers per hour in the June quarter 2005. The vessel working rate was 34.9 containers per hour in the December quarter 2004 and also 34.9 in the March quarter 2005. It increased to 36.9 in the June quarter 2005.

The *Melbourne* (P&O Ports, Patrick) average crane rate was 27.5 in the December quarter 2004 and 27.5 in the March quarter 2005. It increased to 27.6 containers per hour in the June quarter 2005. The vessel working rate was 35.6 containers per hour in the December quarter 2004 and increased to 39.3 in the March quarter 2005. It decreased to 38.7 in the June quarter 2005.

The *Adelaide* (DPI) average crane rate was 29.8 in the December quarter 2004 and 29.7 in the March quarter 2005. It increased to 30.4 containers per hour in the June quarter 2005. The vessel working rate increased from a record 35.3 containers per hour in the December quarter 2004 to 37.1 in the March quarter 2005, and decreased to 33.6 in the June quarter 2005.

The *Fremantle* (P&O Ports, Patrick) average crane rate was 27.2 in the December quarter 2004 and 26.7 in the March quarter 2005. It increased to 27.8 containers per hour in the June quarter 2005. The vessel working rate rose from 31.3 containers per hour in the December quarter 2004 to 31.4 in the March quarter 2005, and increased to 32.2 in the June quarter 2005.

Overall, stevedoring (or crane-rate) variability was reasonably stable over the December 2004 to June 2005 quarters.

Teus per hour

Table 16 on page 27 presents the stevedoring productivity indicators in terms of teus per hour. These data are retained in *Waterline* for the purpose of long-term historical comparison. They are not directly comparable with the data in Table 1 because indicators based on teus per hour may be affected by changes in the mix of 20-foot and 40-foot containers from one period to the next.



TABLE 1 CONTAINER TERMINAL PERFORMANCE INDICATORS—PRODUCTIVITY IN CONTAINERS PER HOUR

Port / Indicator	Jun-03	Sep-03	Dec-03	Mar-04	Jun-04	Sep-04	Dec-04	Mar-05	Jun-05
Five ports									
Ships handled	822	841	850	801	825	905	936	890	993
Total containers	63 157	68 067	734 597	698 685	737 231	776 125	819 744	744 032	743 597
Crane rate	27.5	27.8	27.2	27.7	28.2	27.5	27.1	27.2	27.7
Vessel working rate	32.5	34.4	33.3	33.7	34.1	32.6	33.1	34.9	35.3
Crane time not worked (per cent)	28	29	28	28	28	29	28	25	24
40-foot containers (per cent)	36	39	39	38	38	41	42	40	39
Ship rate	45.1	48.3	46.1	46.7	47.6	45.9	45.6	46.6	46.3
Throughput pbm	90	96	103	98	103	109	115	104	104
Brisbane									
Ships handled	184	192	194	179	175	219	227	205	222
Total containers	92 872	107 257	114 580	106 652	110 300	132 527	134 274	116 561	115 730
Crane rate	26.7	25.5	25.7	26.3	27.3	26.6	26.5	27.2	27.2
Vessel working rate	27.0	24.9	26.3	27.0	29.7	26.0	24.6	26.1	26.7
Crane time not worked (per cent)	34	36	35	36	34	38	40	37	33
40-foot containers (per cent)	34	37	38	37	37	42	43	42	37
Stevedoring variability (per cent)	54	58	52	57	54	53	56	54	47
Ship rate	41.1	39.2	40.6	42.2	44.8	41.7	41.3	41.3	40.1
Throughput pbm	58	67	71	66	69	82	84	73	72
Sydney									
Ships handled	217	228	238	221	231	253	262	258	283
Total containers	194 177	215 321	236 567	217 419	231 556	241 539	256 898	230 741	231 959
Crane rate	27.2	28.0	26.2	26.7	27.5	27.1	26.7	26.7	27.7
Vessel working rate	35.4	37.8	33.1	36.2	35.9	33.7	34.9	34.9	36.9
Crane time not worked (per cent)	26	27	27	25	25	25	26	25	24
40-foot containers (per cent)	40	41	42	41	42	44	45	43	43
Stevedoring variability (per cent)	50	41	49	54	51	48	53	46	50
Ship rate	48.0	51.8	45.5	48.2	47.7	45.3	47.0	46.6	48.2
Throughput pbm	100	111	122	112	119	124	132	119	119
Melbourne									
Ships handled	235	240	241	223	244	266	272	260	299
Total containers	240 028	246 024	259 334	254 261	273 495	279 831	301 997	281 637	278 030
Crane rate	27.8	28.5	28.6	29.3	29.4	28.5	27.5	27.5	27.6
Vessel working rate	33.0	37.2	38.1	36.5	36.3	35.9	35.6	39.3	38.7
Crane time not worked (per cent)	27	28	26	28	30	29	25	21	20
40-foot containers (per cent)	37	39	39	38	39	42	41	39	39
Stevedoring variability (per cent)	52	57	58	62	66	62	65	69	68
Ship rate	45.1	52.0	51.6	50.5	52.0	50.6	47.7	50.0	48.6
Throughput pbm	131	135	142	139	150	153	165	154	152
Adelaide									
Ships handled	58	62	63	60	60	54	56	53	68
Total containers	32 093	35 221	36 954	35 100	35 207	35 950	34 654	34 551	37 587
Crane rate	27.4	28.0	28.2	28.1	28.3	28.9	29.8	29.7	30.4
Vessel working rate	36.0	31.1	33.7	32.8	31.5	34.4	35.3	37.1	33.6
Crane time not worked (per cent)	15	18	13	13	13	16	10	15	14
40-foot containers (per cent)	25	26	29	25	26	24	27	26	27
Stevedoring variability (per cent)	na	na	na	na	na	na	na	na	na
Ship rate	42.4	37.7	38.7	37.9	36.1	40.9	39.2	43.5	39.0
Throughput pbm	68	75	79	75	75	76	74	74	80
Fremantle									
Ships handled	128	119	114	118	115	113	119	114	121
Total containers	79 987	82 244	87 162	85 253	86 673	86 278	91 921	80 542	80 291
Crane rate	28.1	28.1	27.0	27.0	27.1	26.3	27.2	26.7	27.8
Vessel working rate	28.6	30.4	28.8	28.0	28.6	28.5	31.3	31.4	32.2
Crane time not worked (per cent)	35	32	31	31	31	30	28	28	29
40-foot containers (per cent)	33	38	37	36	34	39	41	37	39
Stevedoring variability (per cent)	49	46	52	41	38	41	41	45	44
Ship rate	44.1	44.9	41.7	40.6	41.6	40.7	43.4	43.6	45.4
Throughput pbm	62	64	67	66	67	67	71	62	62

na not available
r revised
pbm per berth metre

Notes 1. The definitions used in compiling the stevedoring productivity data are detailed in Waterline 33, pages 15-17.
2. Data from CSX World Terminals at Brisbane are incorporated from the December quarter 1999 until June quarter 2001.
3. The data in this table are expressed in container moves per hour and therefore are not directly comparable with the teus per hour data in table 13.
4. Crane time not worked is the difference between the ship and the vessel working rates as a percentage of the net rate.

Sources Patrick, P&O Ports and DPI Terminals.





CONTAINER TERMINAL PRODUCTIVITY

FIGURE 1 FIVE MAJOR PORTS

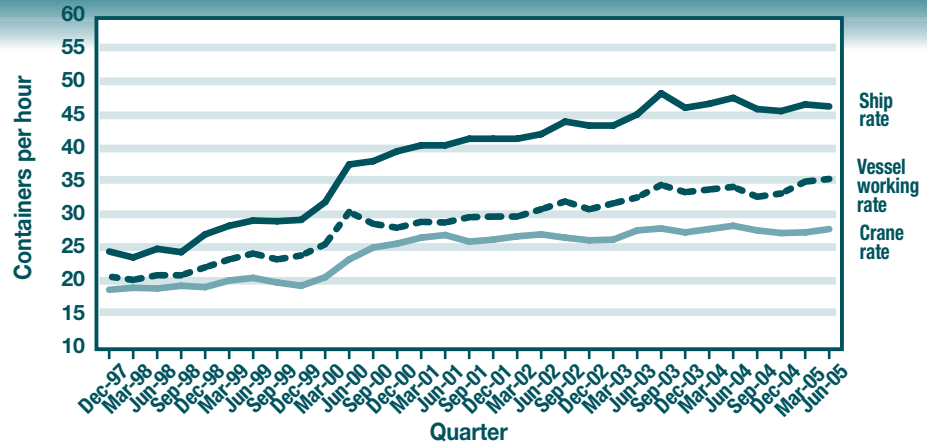


FIGURE 2 BRISBANE

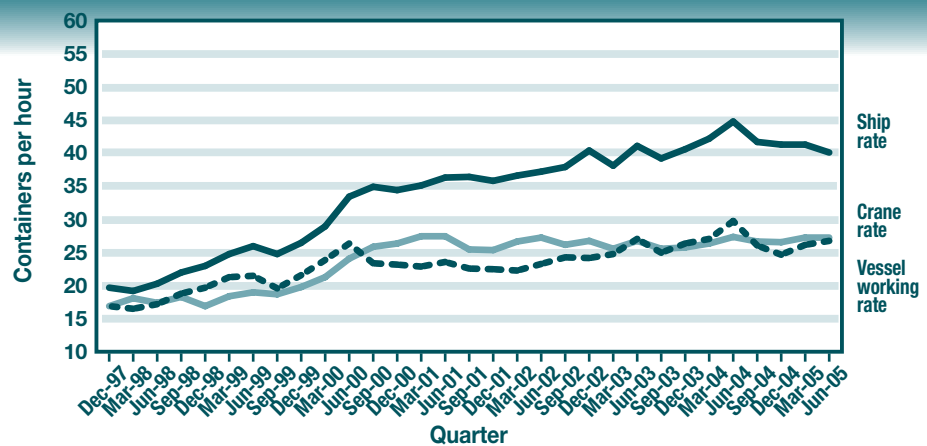
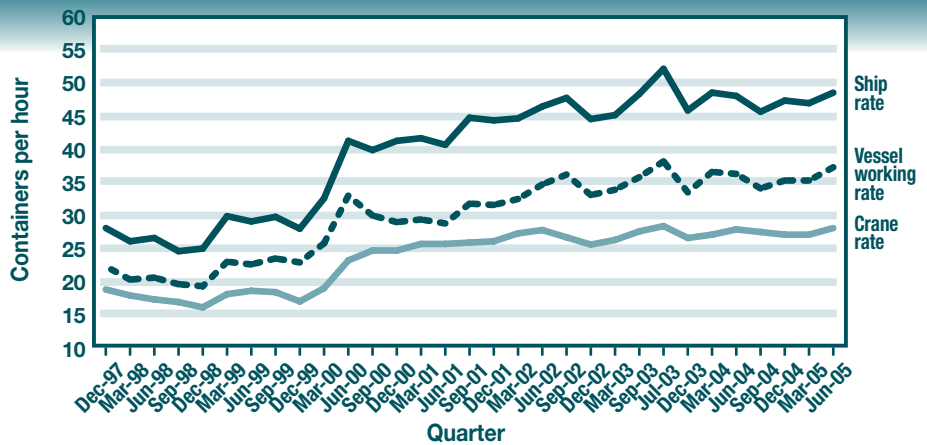


FIGURE 3 SYDNEY



Note These figures are based on data contained in table 1. Readers should refer to the notes in that table.

Sources Patrick, P&O Ports and DPI Terminals.

CONTAINER TERMINAL PRODUCTIVITY

FIGURE 4 MELBOURNE

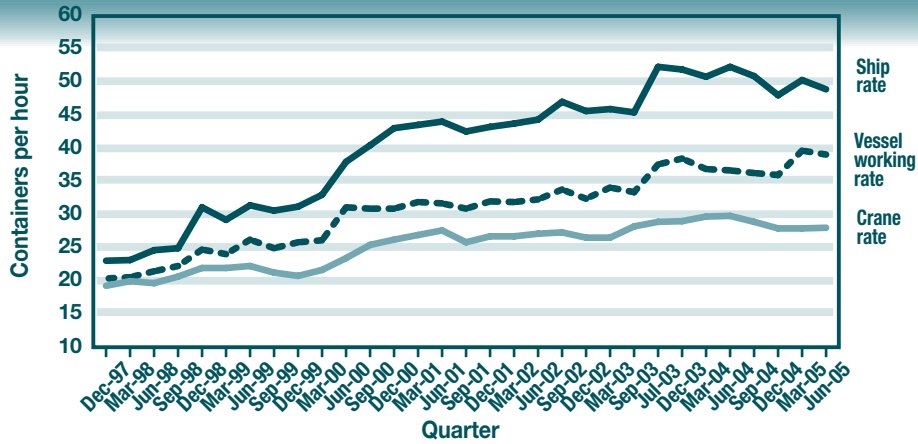


FIGURE 5 ADELAIDE

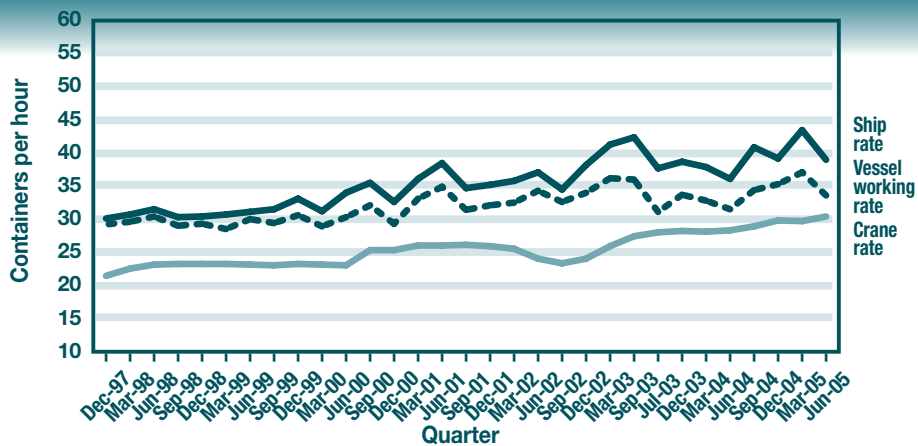
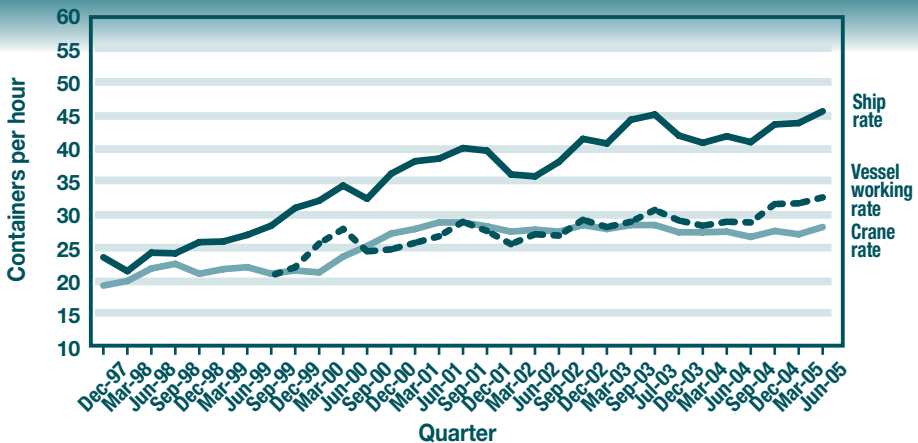


FIGURE 6 FREMANTLE



Note These figures are based on data contained in table 1. Readers should refer to the notes in that table.

Sources Patrick, P&O Ports and DPI Terminals.



PORT INTERFACE COST INDEX

The port interface cost index provides a measure of shore-based shipping costs (charges) for containers moved through Australian mainland capital city ports. These five ports account for approximately 90 per cent of Australia's container traffic.¹ Data for July–December 2004 and January–June 2005 are presented in tables 2 to 6. The port interface cost index is based on an indicative approach; that is, the index is not an average of all costs, but is based on those costs typically charged by service providers in most instances.

Port and related charges

Table 2 provides the parameters used to determine the port and related charges in tables 3 and 4. These parameters relate to a representative port call by container ships using the Lloyd's ship classification unitized cellular container ship (UCC). For the 15 000 to 20 000 GT range² the representative vessel size used is 17 215 GT and for the 35 000 to 40 000 GT range the representative vessel size 37 394 GT.

TABLE 2 PARAMETERS USED IN THE PORT INTERFACE COST INDEX, 2004–05

	Brisbane		Sydney		Melbourne		Adelaide		Fremantle	
	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005
Vessel size GT 17 215										
Average Teus exchanged^a										
All	697	527	751	702	1222	1010	605	848	904	676
Loaded	462	365	562	473	1024	841	466	634	1221	540
Empty	235	162	189	229	198	170	436	214	60	136
Loaded inwards	291	226	401	299	605	483	151	333	696	326
Loaded outwards	171	139	161	174	419	358	315	300	525	214
Ship call parameters^a										
Number of port calls	6	5	4	4	4	3	2	2	3	4
Elapsed berth time (hrs)	24	22	27	21	27	28	20	24	18	21
Vessel size GT 37 394										
Average Teus exchanged^b										
All	1276	1110	1648	1659	1793	1757	804	858	850	823
Loaded	992	834	1161	1217	1437	1439	478	696	620	602
Empty	284	276	487	442	356	318	326	162	230	222
Loaded inwards	632	483	828	842	859	818	138	319	329	305
Loaded outwards	360	351	334	376	579	621	340	377	291	297
Ship call parameters^b										
Number of port calls	4	5	4	3	4	4	2	2	3	4
Elapsed berth time (hrs)	34	30	34	35	34	33	23	18	14	28
<i>na not available</i>										
<i>a. Mean value for ships between 15 000 and 20 000 GT.</i>										
<i>b. Mean value for ships between 35 000 and 40 000 GT.</i>										
<i>Sources BTRE estimates based on ship call data supplied by relevant port authorities/corporations and other port service providers.</i>										

Tables 3 and 4 provide the port and related charges at the five mainland capital city ports for the 15 000 to 20 000 GT range and the 35 000 to 40 000 GT range respectively, for July–December 2004 and January–June 2005. Port and related charges comprise ship-based charges and cargo-based charges.

Ship-based charges

While overall ship-based charges changed little in January–June 2005, there were some significant changes in charges per teu, mainly reflecting the variation in the average number of teus exchanged per ship call.

Compared to the previous period, the overall changes in total ship-based charges per teu in January–June 2005 for ships in the 15 000 to 20 000 GT range were:

- *Brisbane* – 46 per cent increase;
- *Sydney* – 7 per cent increase;
- *Melbourne* – 21 per cent increase;
- *Adelaide* – 28 per cent decrease; and
- *Fremantle* – 34 per cent increase.

1. Based on TEU numbers for Australian ports published by Australian Association of Port and Maritime Authorities (AAPMA). (aapma.org.au/trade/stats/?Id=5)

2. To obtain a sufficient sample size for Adelaide and Fremantle containers exchanged (average), the ship size range was increased from 10 000 GRT to 26 000 GRT.



TABLE 3 PORT AND RELATED CHARGES FOR SHIPS IN THE 15 000–20 000 GT RANGE, 2004–05

	Brisbane		Sydney		Melbourne		Adelaide		Fremantle	
	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005
Ship-based charges (\$/teu)										
Conservancy	1.88	4.97	-	-	-	-	3.55	2.53	-	-
Tonnage	-	-	9.84	10.53	4.27	5.16	7.99	6.15	3.08	4.13
Pilotage	9.16	13.35	4.41	4.72	5.51	6.67	6.00	4.28	2.54	3.40
Towage	12.80	16.92	11.87	13.21	7.49	9.06	25.90	18.48	5.74	7.68
Mooring, unmooring	2.67	3.52	4.09	4.01	0.86	1.04	-	-	0.97	1.30
Berth hire ^a	-	-	-	-	-	-	-	-	-	-
Total ^b	26.50	38.76	30.22	32.48	18.13	21.93	43.44	31.44	12.34	16.52
Cargo-based charges (\$/teu)										
Wharfage										
Imports	28.60	28.60	66.00	66.00	34.54	34.54	59.95	59.95	49.50	49.50
Exports	28.60	28.60	49.50	49.50	34.54	34.54	59.95	59.95	49.50	49.50
Harbour dues	46.20	46.20	-	-	-	-	-	-	-	-
Berth charge	-	-	-	-	-	-	-	-	15.29	15.29
Total port and related charges (\$/teu)										
Loaded imports	101.30	113.56	96.22	98.48	52.67	56.47	103.39	91.39	77.13	81.31
Loaded exports	101.30	113.56	79.72	81.98	52.67	56.47	103.39	91.39	77.13	81.31
Charges per ship visit (\$/visit)										
Total ship-based charges	18 467	20 427	22 684	22 784	22 157	22 157	26 288	26 665	11 160	11160
Empty teus ^c	3 669	2 535	-	-	-	-	-	-	-	-

- not applicable

r revised

a. Charged by stevedores and itemised separately from basic stevedoring charge.

b. Components may not sum to totals due to rounding.

c. Sum of wharfage, harbour dues and berth charge per empty teu, multiplied by average exchange of empty teus.

Note Port and related charges are based on the parameters described in table 2.

Sources BTRE estimates based on: ship call data supplied by relevant port authorities/corporations, and price schedules of relevant port authorities/corporations, towage operators and pilotage service providers.

TABLE 4 PORT AND RELATED CHARGES FOR SHIPS IN THE 35 000–40 000 GT RANGE, 2004–05

	Brisbane		Sydney		Melbourne		Adelaide		Fremantle	
	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005
Ship-based charges (\$/teu)										
Conservancy	4.45	5.12	-	-	-	-	4.72	4.42	-	-
Tonnage	-	-	9.73	9.67	6.31	6.44	9.36	7.55	7.13	7.36
Pilotage	7.17	15.10	3.42	3.39	4.77	4.87	5.47	5.13	2.71	2.79
Towage	7.98	10.15	5.75	5.94	5.46	5.57	25.11	23.52	9.05	9.34
Mooring, unmooring	1.46	1.67	2.19	2.17	0.59	0.60	-	-	1.04	1.07
Berth hire ^a	-	-	-	-	-	-	-	-	-	-
Total ^b	21.06	32.05	21.09	21.18	17.13	17.48	44.66	40.62	19.92	20.56
Cargo-based charges (\$/teu)										
Wharfage										
Imports	28.60	28.60	66.00	66.00	34.54	34.54	59.95	59.95	49.50	49.50
Exports	28.60	28.60	49.50	49.50	34.54	34.54	59.95	59.95	49.50	49.50
Harbour dues	46.20	46.20	-	-	-	-	-	-	-	-
Berth charge	-	-	-	-	-	-	-	-	15.29	15.29
Total port and related charges (\$/teu)										
Loaded imports	96	107	87	87	52	52	105	101	85	85
Loaded exports	96	107	70.59	70.68	51.67	52.02	104.61	100.57	84.71	85.35
Charges per ship visit (\$/visit)										
Total ship-based charges	26 877	35 565	34 766	35 145	30 722	30 722	35 904	34 862	16 926	16 926
Empty teus ^c	4 439	4 306	-	-	-	-	-	-	-	-

- not applicable

r revised

a. Charged by stevedores and itemised separately from basic stevedoring charge.

b. Components may not sum to totals due to rounding.

c. Sum of wharfage, harbour dues and berth charge per empty teu, multiplied by average exchange of empty teus.

Note Port and related charges are based on the parameters described in table 2.

Sources BTRE estimates based on: ship call data supplied by relevant port authorities/corporations, and price schedules of relevant port authorities/corporations, towage operators and pilotage service providers.



For ships in this range, the average number of teus exchanged decreased by 24 per cent at Brisbane, 7 per cent at Sydney, 30 per cent at Melbourne and by 25 per cent at Fremantle, while increasing by 40 per cent at Adelaide, compared to the previous period.

Compared to the previous period, the overall changes in total ship-based charges per teu in January–June 2005 for ships in the 35 000 to 40 000 GT range were:

- *Brisbane* – 52 per cent increase;
- *Sydney* – 2 per cent increase;
- *Melbourne* – 2 per cent increase;
- *Adelaide* – 9 per cent decrease; and
- *Fremantle* – 3 per cent increase.

In the 35 000 to 40 000 GT range, the average number of teus exchanged fell at all ports except Sydney and Adelaide in the January–June 2005 period when compared to the previous period. In Sydney they increased by 1 per cent and in Adelaide by 7 per cent. In Fremantle they decreased by 3 per cent, in Brisbane by 13 per cent and in Melbourne by 2 per cent.

Fremantle has the lowest ship-based charges on a per ship visit basis for representative vessel sizes for ships in the 15 000 to 20 000 GT and the 35 000 to 40 000 GT range. The large percentage increase in ship based charges for Brisbane were due to the large increases in port charges for that port. Overall however ship based charges make up a small proportion of port interface costs.

Cargo-based charges

There have been no increases in cargo-based charges in this period.

Stevedoring charges per teu

In order to obtain a sufficient sample size for Adelaide and Fremantle of average containers exchanged, the 15 000 GRT to 20 000 GRT ship size range has been broadened to include ships from 10 000 GRT to 26 000 GRT.

The stevedoring charges per teu used in this issue of *Waterline* are those published in the most recently available ACCC report on stevedoring prices (2003–04 data reported in Report No. 6 of November 2004). These charges are \$171.49 per teu.

Land-based charges per teu

Average customs brokers' fees and road transport charges for July–December 2004 and January–June 2005 are included in tables 5 and 6. These charges are based on data provided by some 30 customs brokers and 30 road transport operators.

Customs brokers' fees for imports are higher than fees for exports, reflecting the more complex clearance procedures for import containers. During January–June 2005 the average customs broker fee for imports increased by 1 per cent at Melbourne, remained the same at Adelaide and increased by 15 per cent at Brisbane, 4 per cent at Sydney and 5 per cent at Fremantle. For exports the average fee increased by 15 per cent at Brisbane, 6 per cent at Adelaide, and 28 per cent at Fremantle. They decreased by 4 per cent at Sydney, and remained the same at Melbourne.

Road transport charges increased at Brisbane (17 per cent), Melbourne (16 per cent), Adelaide (19 per cent), Sydney (16 per cent) and Fremantle (21 per cent). One of the parameters used to estimate road transport charges is the time taken to move containers between the wharf and the customer's warehouse. Both distance and traffic congestion impact on this parameter and, therefore, help explain the differences between road transport charges at Melbourne and Sydney compared with Brisbane, Adelaide and Fremantle.

Indices for individual ports

Table 5 indicates that for ships in the 15 000 to 20 000 GT range, between July–December 2004 and January–June 2005, costs per teu for import containers at Brisbane increased by 8 per cent while export containers increased 11 per cent. At Sydney, they increased by 8 per cent and 8 per cent respectively. At Melbourne, import costs per teu container increased by 8 per cent and export costs by 9 per cent. At Adelaide, import costs increased 4 per cent and export costs by 6 per cent, while at Fremantle, they increased by 9 per cent and 12 per cent respectively.



TABLE 5 PORT INTERFACE COSTS FOR SHIPS IN THE 15 000–20 000 GT RANGE, 2004–05

	Brisbane		Sydney		Melbourne		Adelaide		Fremantle	
	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005
Import										
Ship-based charges	27	39	30	32	18	22	43	31	12	17
Cargo-based charges	75	75	66	66	35	35	60	60	65	65
Stevedoring ^p	171	171	171	171	171	171	171	171	171	171
Customs brokers' fees	132	132	131	135	129	131	129	129	150	158
Road transport charges	243	284	346	402	336	389	205	244	196	237
Import total ^a	647	701	744	807	690	748	609	636	595	648
Export										
Ship-based charges	27	39	30	32	18	22	43	31	12	17
Cargo-based charges	75	75	50	50	35	35	60	60	65	65
Stevedoring ^p	171	171	171	171	171	171	171	171	171	171
Customs brokers' fees	99	114	112	107	81	82	73	77	63	81
Road transport charges	243	284	346	402	336	389	205	244	196	237
Export total ^a	615	683	709	763	641	699	552	584	508	571

r revised*p* provisional, updated annually after the release of the ACCC stevedoring monitoring report.*a.* Components may not sum to totals due to rounding.

Notes 1. Based on parameters described in table 2.

2. Waterline data on customs brokers' fees and road transport charges are collected for the purpose of monitoring trends in charges over time. They should not be used for inter-port comparisons, as sample characteristics may vary between ports.

3. The stevedoring charge used in Waterline is monitored by the ACCC and is the weighted average for Brisbane, Sydney, Melbourne, Adelaide, Fremantle and Burnie. Stevedoring charges vary between ports but detailed data for individual ports are not publicly available.

Sources BTRE estimates based on: ship call data supplied by relevant port authorities/corporations; price schedules of relevant port authorities/corporations, towage operators and pilotage service providers; surveys of customs brokers and road transport operators; and stevedoring charge data supplied by the ACCC.

Table 6 indicates that for ships in the 35 000 to 40 000 GT range, costs per teu for import and export containers between July–December 2004 and January–June 2005 increased at Brisbane (8 per cent and 11 per cent respectively), Adelaide (6 per cent and 7 per cent respectively), and Fremantle (8 per cent and 12 per cent respectively). Costs at Sydney increased (8 per cent and 7 per cent respectively), while at Melbourne import costs increased by 8 per cent and export costs by 8 per cent.

TABLE 6 PORT INTERFACE COSTS FOR SHIPS IN THE 35 000–40 000 GT RANGE, 2004–05

	Brisbane		Sydney		Melbourne		Adelaide		Fremantle	
	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005	Jul-Dec 2004	Jan-Jun 2005
Import										
Ship-based charges	21	32	21	21	17	17	45	41	20	21
Cargo-based charges	75	75	66	66	35	35	60	60	65	65
Stevedoring ^p	171	171	171	171	171	171	171	171	171	171
Customs brokers' fees	132	132	131	135	129	131	129	129	150	158
Road transport charges	243	284	346	402	336	389	205	244	196	237
Import total ^a	642	694	735	796	689	743	645	602	602	652
Export										
Ship-based charges	21	32	21	21	17	17	45	41	20	21
Cargo-based charges	75	75	50	50	35	35	60	60	65	65
Stevedoring ^p	171	171	171	171	171	171	171	171	171	171
Customs brokers' fees	99	114	112	107	81	82	73	77	63	81
Road transport charges	243	284	346	402	336	389	205	244	196	237
Export total ^a	609	676	699	752	640	694	593	516	516	575

r revised*p* Provisional, updated annually after the release of the ACCC stevedoring monitoring report.*a.* Components may not sum to totals due to rounding.

Notes 1. Based on parameters described in table 2.

2. Waterline data on customs brokers' fees and road transport charges are collected for the purpose of monitoring trends in charges overtime. They should not be used for inter-port comparisons, as sample characteristics may vary between ports.

3. The stevedoring charge used in Waterline is monitored by the ACCC and is the weighted average for Brisbane, Sydney, Melbourne, Adelaide, Fremantle and Burnie. Stevedoring charges vary between ports but detailed data for individual ports are not publicly available.

Sources BTRE estimates based on: ship call data supplied by relevant port authorities/corporations; price schedules of relevant port authorities/corporations, towage operators and pilotage service providers; surveys of customs brokers and road transport operators; and stevedoring charge data supplied by the ACCC.

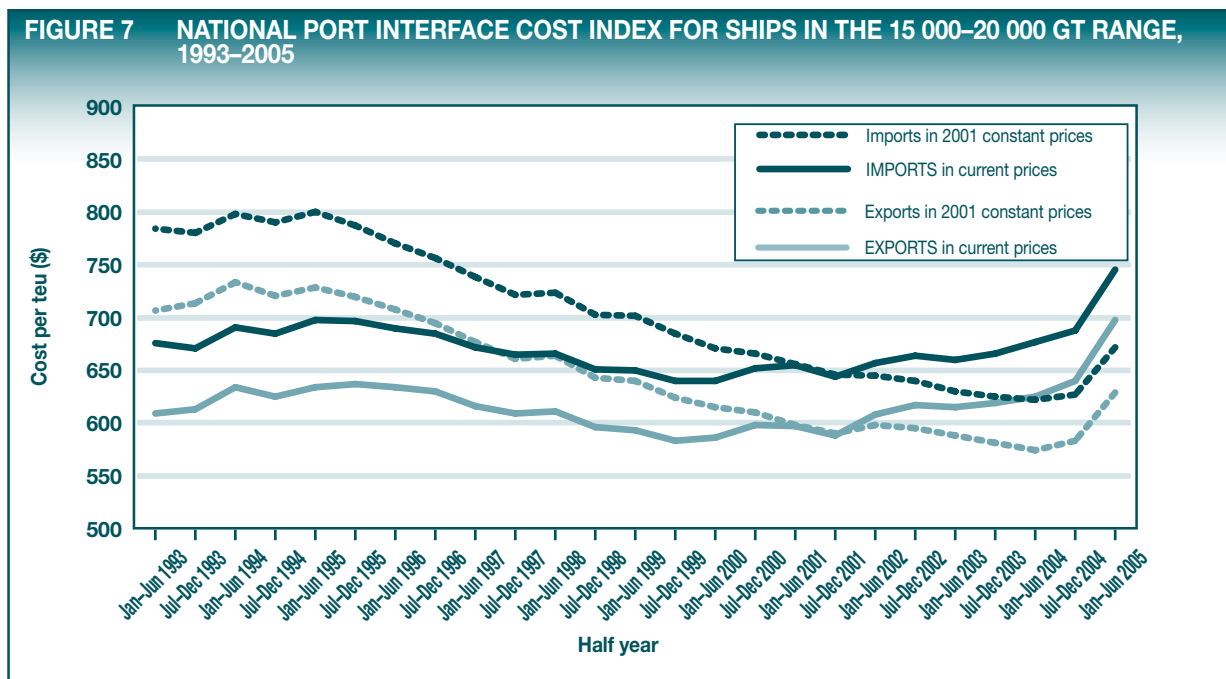


These results should be interpreted with caution. The use of a single stevedoring charge for all ports reflects the scope of the available information, which is not disaggregated on an individual port basis. In practice, container stevedoring charges tend to vary between ports.

National index

Figure 7 provides the national port interface cost index for ships in the 15 000 to 20 000 GT range from 1993 onwards. In current prices, the national index for imports increased from \$687 per teu in July–December 2004 to \$747 in January–June 2005, and the index for exports increased from \$639 per teu to \$697 per teu.

In real terms (2001 prices), the national cost index per import teu has by decreased 14 per cent since 1993, and by 11 per cent per export teu.



Sources BTRE estimates based on: ship call data supplied by port authorities/corporations; price schedules of port authorities/corporations, towage operators and pilotage service providers; surveys of customs brokers and road transport operators; stevedoring charges data supplied by the ACCC and industry sources; and ABS 5206.041 National Accounts table.

Table 7 shows the national port interface cost index from January–June 2002 for ships in the 35 000 to 40 000 GT range. The national index for imports increased from \$684 per teu in July–December 2004 to \$739 per teu in January–June 2005 in current prices. The index for exports increased from \$636 to \$691 per teu in current prices.

The increases in both National Indices are primarily due to the increases in land transport costs at all ports.

TABLE 7 NATIONAL PORT INTERFACE COST INDEX FOR SHIPS IN THE 35 000–40 000 GT RANGE, 2002–2005

	Jan-Jun 2002	Jul-Dec 2002	Jan-Jun 2003	Jul-Dec 2003	Jan-Jun 2004	Jul-Dec 2004	Jan-Jun 2005
IMPORTS in current prices	654	660	653	661	674	684	739
Imports in 2001 prices	643	637	624	620	619	623	666
EXPORTS in current prices	603	610	608	614	623	636	691
Exports in 2001 prices	593	589	581	576	572	579	623

Sources BTRE estimates based on: ship call data supplied by port authorities/corporations; price schedules of port authorities/corporations, towage operators and pilotage service providers; surveys of customs brokers and road transport operators; stevedoring charges data supplied by the ACCC and industry sources; and ABS 5206.041 National Accounts table.

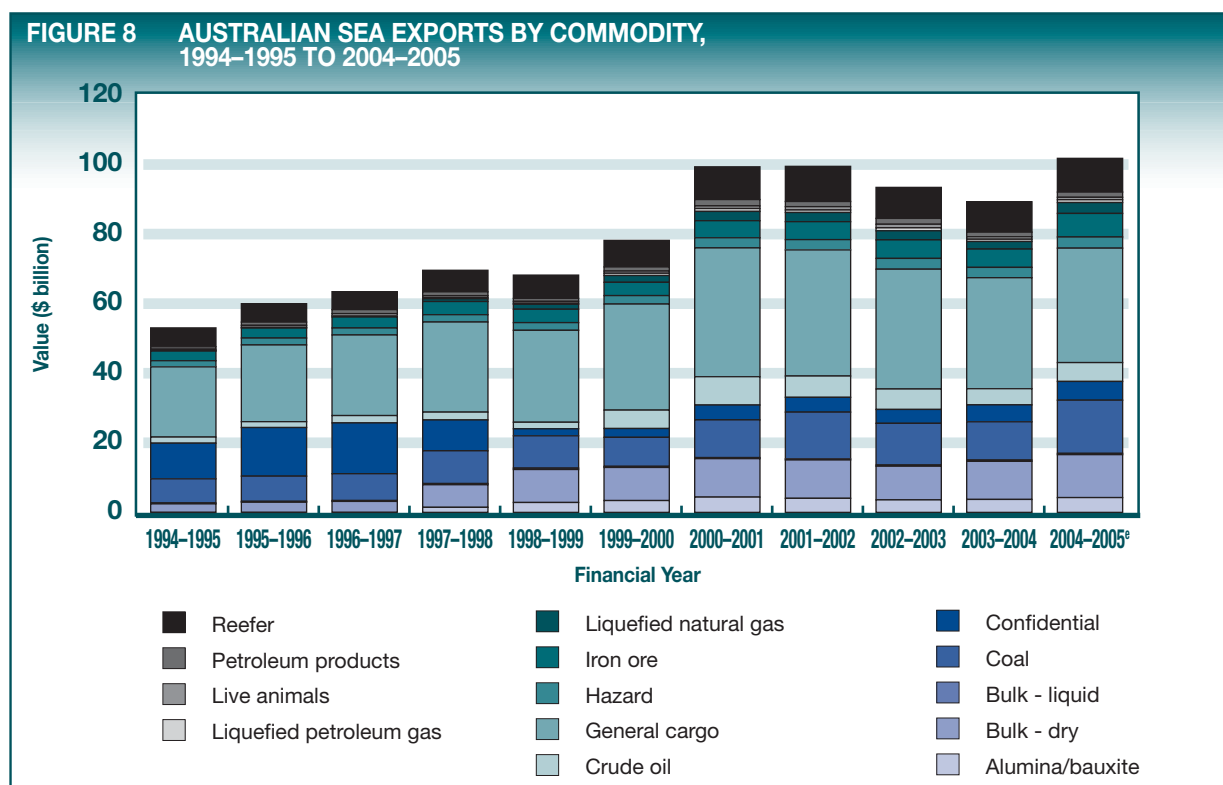


TRENDS IN AUSTRALIAN INTERNATIONAL SEA TRADE 1994–1995 TO 2004–2005³

Between 1994–1995 and 2004–2005 it is estimated that international imports and exports moving across Australian wharves increased by 95 per cent by value (from \$108 billion to \$210 billion) and by 65 per cent by weight (from 408 million to 674 million tonnes).

Commodity exports

Between 1994–1995 and 2004–2005 Australian international sea exports have grown from 362.4 million tonnes to 605.1 million tonnes of cargo. This cargo was valued at \$53.0 billion in 1994–1995 and by 2004–2005 had increased in value to \$101.8 billion. Over the last decade exports have grown 6.73 per cent per annum by value and 5.26 per cent per annum by weight (Figure 8).



e. Estimate based on preliminary data for the first three quarters.

Sources ABS, International cargo statistics, unpublished.

In 2004–2005 the split between export commodities in terms of weight was iron ore 39.6 per cent, coal 38.0 per cent, and other dry bulk 13.1 per cent. In terms of value the split is quite different with general cargo⁴ 32.3 per cent, other dry bulk⁵ 16.3 per cent, coal 15.0 per cent, and reefer 9.5 per cent.

In terms of sea exports over the period 1994–1995 to 2004–2005 the key points of growth were:

- Iron ore increased by 5.9 per cent per annum by weight and 9.3 per cent per annum by value;
- Coal increased by 5.3 per cent per annum by weight and 8.2 per cent per annum by value;
- Other dry bulk (excluding alumina bauxite) increased by 18.7 per cent per annum by weight and 17.6 per cent per annum by value;
- General cargo increased by 3.9 per cent per annum by weight and 5.0 per cent per annum by value;
- Reefer increased by 4.1 per cent per annum by weight and 6.0 per cent per annum by value; and
- Crude oil increased by 11.9 per cent per annum by value but only 1.5 per cent per annum by weight. Crude oil exports have been decreasing by weight at 2.9 per cent per annum since 2001–2002, accelerating to 13.1 per cent per annum decrease between 2003–2004 to 2004–2005.

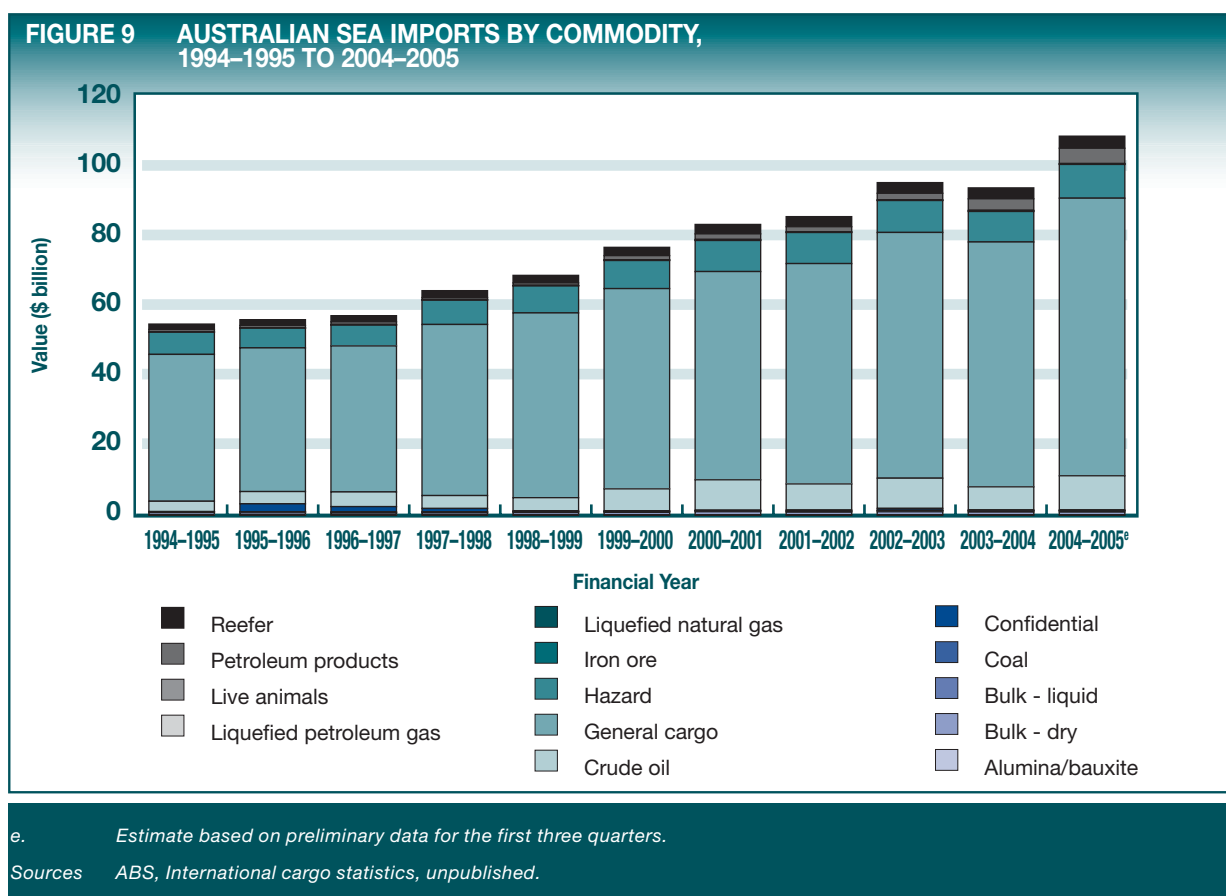
3. Estimate based on first 3 quarters of 2004–05.

4. General cargo: non bulk cargo not including reefer (eg refrigerated and chilled foods), live animals, hazardous goods or confidential.

5. Includes alumina and bauxite.

Commodity imports

Between 1994–1995 and 2004–2005 Australian sea freight imports grew from 45.9 million tonnes to 69.0 million tonnes. Imported sea cargo was valued at \$54.5 billion in 1994–1995 and has increased in value to \$108.2 billion in 2004–2005. Over the last decade imports have grown 7.09 per cent per annum by value and 4.16 per cent per annum by weight (Figure 9).



In 2004–2005 the main international sea imports by weight consisted of crude oil 31.6 per cent, general cargo 24.5 per cent, hazardous materials 15.5 per cent and petroleum products 13.1 per cent. In terms of value the split is different with general cargo items dominating at 73.3 per cent, hazardous materials 8.9 per cent, and crude oil 9.0 per cent.

In terms of sea imports over the period 1994–1995 to 2004–2005, the key points of growth were:

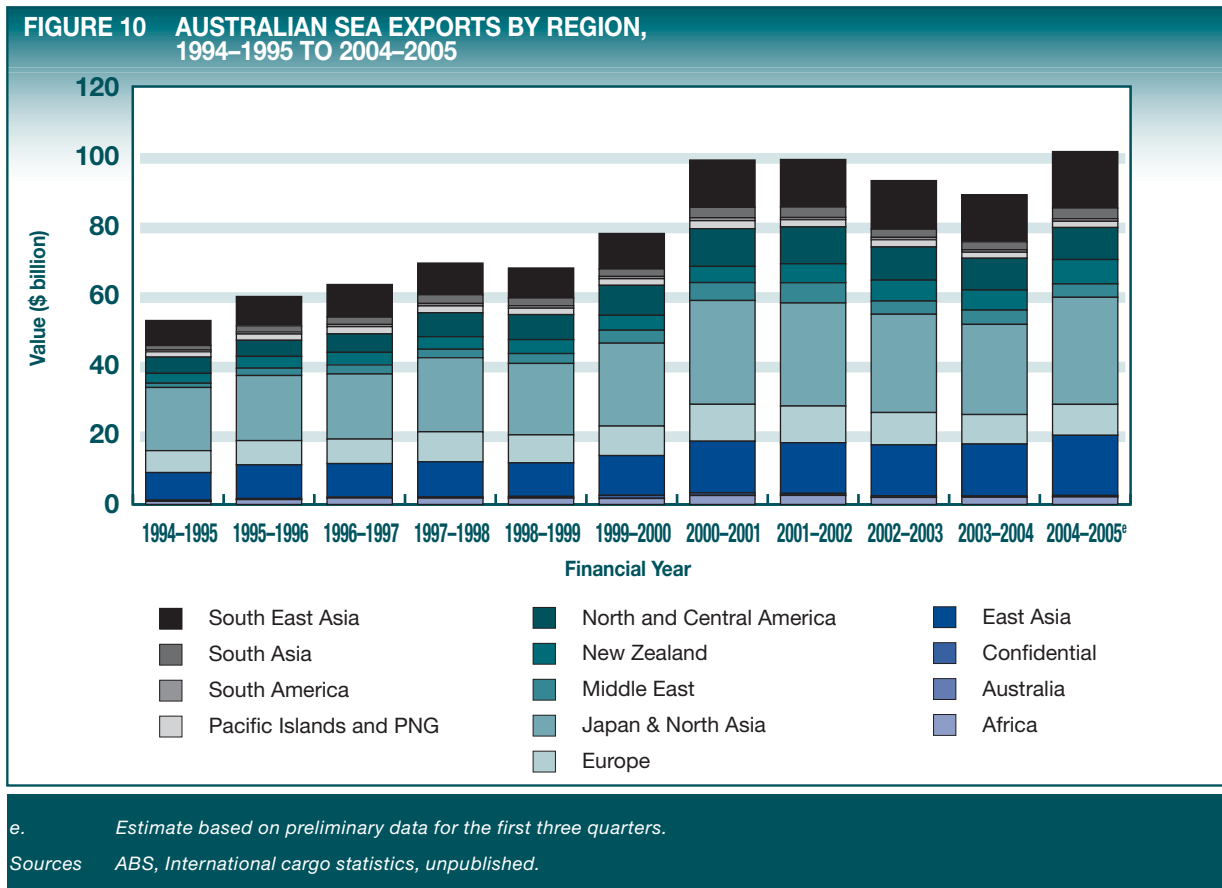
- Crude oil increased by 2.5 per cent per annum by weight and 12.7 per cent per annum by value;
- General cargo increased by 6.1 per cent per annum by weight and 6.6 per cent per annum by value;
- Hazardous materials increased by 4.4 per cent per annum by weight and 4.3 per cent per annum by value; and
- Petroleum products increased by 20.7 per cent per annum by weight and 10.0 per cent per annum by value.

Trade Regions

In the period 1994–1995 to 2004–2005 Australian international sea exports grew mainly to four regions (Figure 10):

- *Japan and North Asia:* Sea exports to Japan and North Asia grew at 3.9 per cent per annum by weight from 200.1 million tonnes to 293.9 million tonnes and 5.4 per cent per annum by value from \$18.2 billion to \$30.9 billion.
- *East Asia:* Sea exports to East Asia grew at 12.3 per cent per annum by weight from 50.7 million tonnes to 161.8 million tonnes and 8.1 per cent per annum by value from \$8.0 billion to \$17.3 billion.
- *South East Asia:* Sea exports to South East Asia grew at 6.8 per cent per annum by weight from 12.4 million tonnes to 24.0 million tonnes and 8.5 per cent per annum by value from \$7.2 billion to \$16.3 billion.

- **New Zealand:** Sea exports to New Zealand grew at 8.1 per cent per annum by weight from 2.9 million tonnes to 6.4 million tonnes and 9.4 per cent per annum by value from \$2.9 billion to \$7.0 billion.



Although large increases occurred in exports to Europe, North and Central America, and Middle East in terms of growth over the decade, exports to these regions have shown some decline:

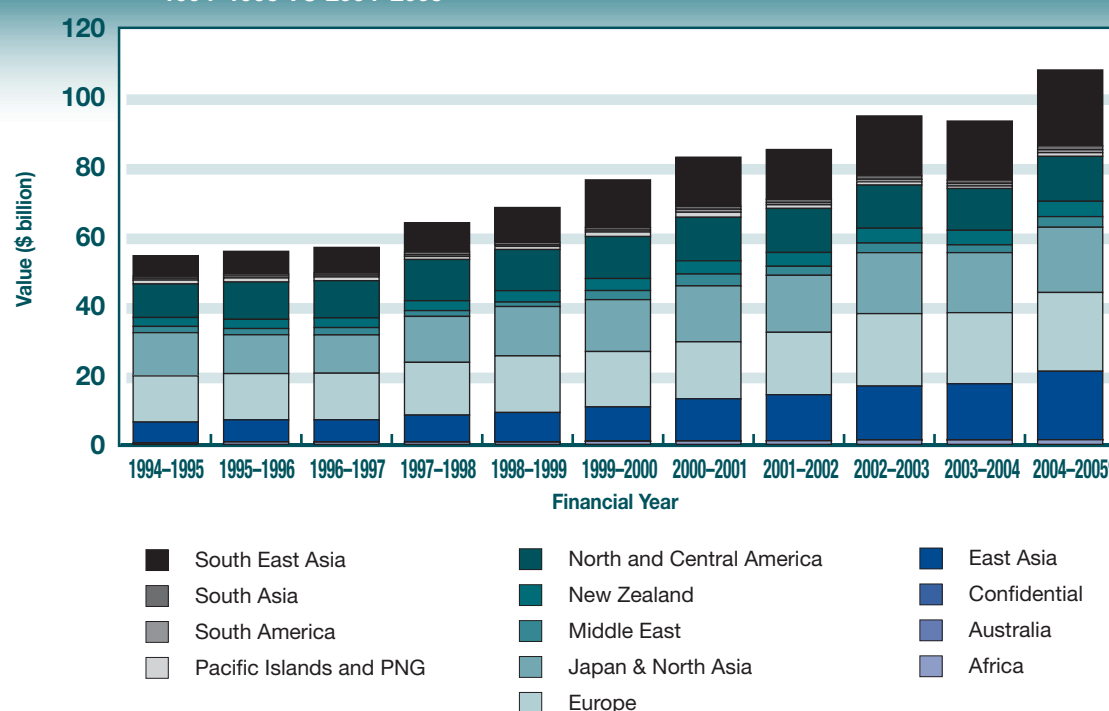
- **Europe:** Sea exports to Europe have declined by 0.7 per cent per annum by weight over the last decade, with an accelerated decline 3.0 per cent per annum over the last 4 years. In 1994-1995 exports to Europe totalled 56.1 million tonnes; this trade peaked at 62.3 million tonnes in 2000-2001 and then declined to 52.1 million tonnes in 2004-2005. In terms of value, European exports grew at 3.5 per cent per annum over the decade but declined by 4.1 per cent per annum over the last 4 years. In 1994-1995 exports to Europe totalled \$6.3 billion in value; this trade peaked at \$10.6 billion in 2000-2001 and has now declined to \$8.9 billion in 2004-2005.
- **North and Central America:** Exports to North and Central America increased by 2.5 per cent per annum by weight over the last decade, but declined by 2.9 per cent per annum over the last 4 years. In 1994-1995 exports to North and Central America totalled 10.9 million tonnes; this trade peaked at 15.7 million tonnes in 2000-2001 and then declined to 14.0 million tonnes in 2004-2005. In terms of value, exports to North and Central America grew at 7.1 per cent per annum over the decade but declined by 3.5 per cent per annum over the last 4 years. In 1994-1995 exports to North and Central America totalled \$4.7 billion in value; this trade peaked at \$10.9 billion in 2000-2001 and has now declined to \$9.2 billion in 2004-2005.
- **Middle East:** Exports to the Middle East increased by 10.4 per cent per annum by weight over the last decade, but declined by 3.5 per cent per annum over the last 4 years. In 1994-1995 exports to Middle East totalled 4.7 million tonnes; this trade peaked at 14.7 million tonnes in 2000-2001 and then declined to 12.6 million tonnes in 2004-2005. In terms of value, exports to the Middle East grew at 12.3 per cent per annum over the decade but declined by 9.8 per cent per annum over the last 4 years. In 1994-1995 exports to the Middle East totalled \$1.2 billion in value, this trade peaked at \$5.8 billion in 2000-2001 and has now declined to \$3.9 billion in 2004-2005.

Sea imports to Australia in the period 1994-1995 to 2004-2005 grew mainly from five regions (Figure 11):

- **Europe:** Sea imports from Europe grew at 3.6 per cent per annum by weight from 3.2 million tonnes to 46.6 million tonnes and 5.5 per cent per annum by value from \$13.3 billion to \$22.8 billion.
- **South East Asia:** Sea imports from South East Asia grew at 12.4 per cent per annum by weight from 8.6 million tonnes to 27.6 million tonnes and 13.9 per cent per annum by value from \$6.0 billion to \$21.9 billion.

- **East Asia:** Sea imports from East Asia grew at 17.7 per cent per annum by weight from 1.6 million tonnes to 8.3 million tonnes and 12.6 per cent per annum by value from \$6.0 to \$19.8 billion.
- **Japan and North Asia:** Sea imports from Japan and North Asia grew at 5.0 per cent per annum by weight from 3.8 million tonnes to 6.5 million tonnes and 5.2 per cent per annum by value from \$12.5 to \$18.9 billion.
- **North and Central America:** Sea imports from North and Central America declined at 1.1 per cent per annum by weight from 7.2 million tonnes to 6.5 million tonnes but increased at 2.9 per cent per annum by value from \$9.7 billion to \$13.0 billion.

FIGURE 11 AUSTRALIAN SEA IMPORTS BY REGION, 1994–1995 TO 2004–2005



e. Estimate based on preliminary data for the first three quarters.

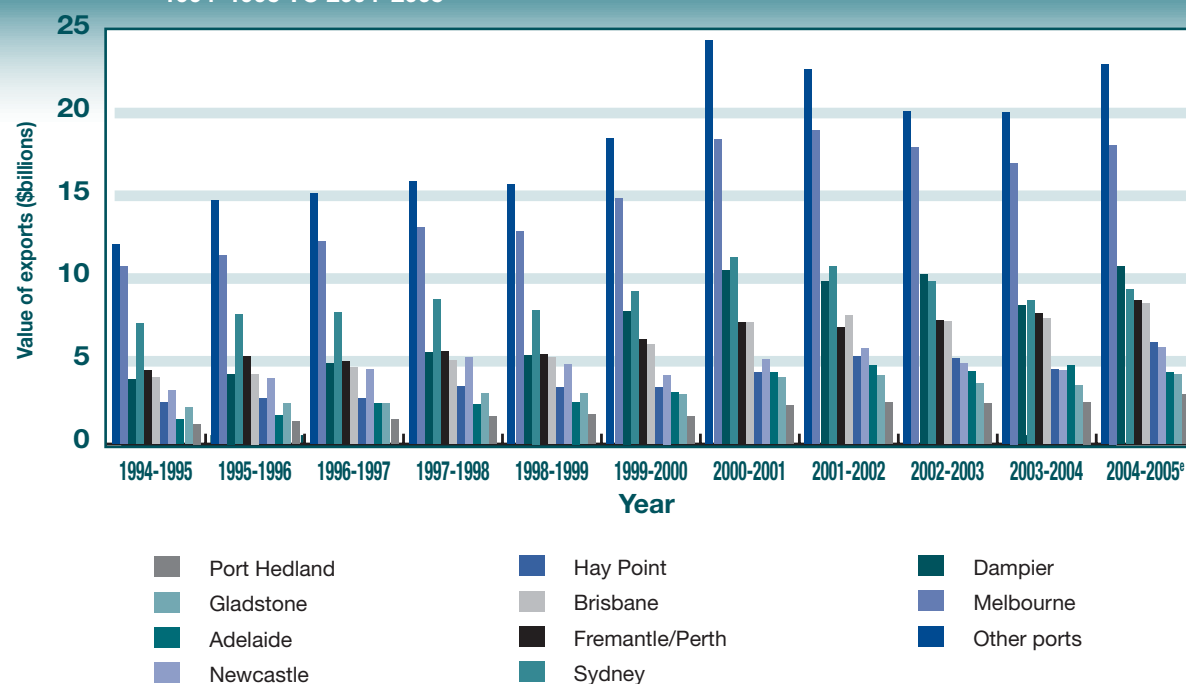
Sources ABS, International cargo statistics, unpublished.

Port activity

Figures 12 and 13 show the top ten ports for Australian international sea exports and imports over the last decade. Of particular note is the change in the balance of the ports. Although Melbourne still dominates as our number one international export port (\$22.95 billion estimated in 2004–2005) ten years ago exports were primarily through the four major ports of Melbourne, Sydney, Brisbane and Fremantle. Since then the large bulk ports have become more prominent, with Dampier (iron ore and gas) now the second largest exporter by value (\$10.73 billion) and largest by weight. Also during this period, both Brisbane (\$8.5 billion in value) and Fremantle (\$8.77 billion in value) have moved from handling about 50 per cent as much as Sydney's export trade to now challenging Sydney (\$10.7 billion in value) as the third largest exporter.

On the other hand little has changed in terms of imports through particular ports over the last 10 years. In 2004–2005 Sydney (\$36.2 billion) and Melbourne (\$35.4 billion) still both dominate, although to lesser extent Brisbane (\$15.5 billion) and Fremantle (\$9.2 billion) are becoming more important as regional importers.

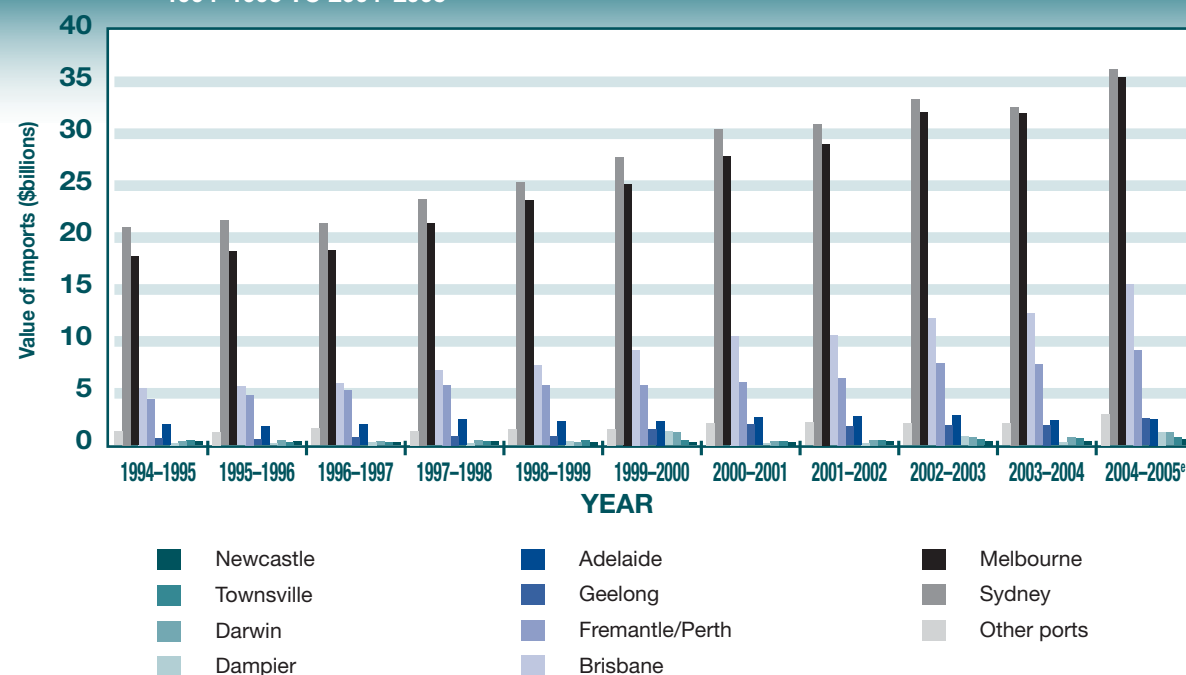
FIGURE 12 TOP TEN AUSTRALIAN EXPORT PORTS
1994-1995 TO 2004-2005



e. Estimate based on preliminary data for the first three quarters.

Sources ABS, International cargo statistics, unpublished.

FIGURE 13 TOP TEN AUSTRALIAN IMPORT PORTS
1994-1995 TO 2004-2005



e. Estimate based on preliminary data for the first three quarters.

Sources ABS, International cargo statistics, unpublished.



SHIP VISITS

Table 8 provides the five-port total number of ship visits and the average number of teus exchanged per ship visit for container vessels with sizes ranging from 5 000 to 60 000 GT. Ship visits measures the number of times a ship calls at a port or ports. For example, a ship that sails to Australia 3 times and makes a total of 15 port calls in a year counts as 1 ship, 3 voyages and 15 ship visits.

Total ship visits increased by 8 per cent in the year ended June 2005 compared to the preceding year, with ship visits peaking at 1911 in the six months to June 2005. In most ranges, the number of ship visits varied in each period. The lowest variation was in the mid ranges, while the largest was in the 15 000–20 000 GT range, which registered 148 visits in the six month period to December 2004 and 290 in the six month period to June 2005. The change in the average number of teus carried varied considerably across the ranges. The largest increase was in the 50 000–55 000 GT range (119 per cent) while the smallest increase was in the 35 000 to 40 000 GT range (0.4 per cent). The largest decrease was in the 15 000 to 20 000 range (26 per cent).

On a national level, 16 per cent of all ship visits were vessels in the 25 000–30 000 GT range, and 82 per cent of ship visits fell within the 15 000 to 45 000 GT ranges. This pattern reflects the slow but steady range 'creep' that has been occurring in recent years as the number of older smaller ships are phased out and many mid-ranged ships are modified to take more 40 foot containers.

Table 9 provides the GT range distribution of ship visits by port for the 2004–05 financial year. The distribution varies between the ports. The median visit for Brisbane and Melbourne was in the 20 000 to 30 000 GRT range, and Sydney and Fremantle the 30 000 to 35 000 GT range. The larger ships tend to call at Sydney where the 75 percentile ship visit occurred in the 40 000–45 000 GT range, while Melbourne had the 75 percentile visit in the 30 000–35 000 GT range.

TABLE 8 FIVE PORT AVERAGE NUMBER OF TEUS EXCHANGED AND TOTAL SHIP VISITS PER 6 MONTH PERIOD FOR SELECTED GT RANGES, WEIGHTED BY NUMBER OF SHIPS

GT	Jun-97	Dec-97	Jun-98	Dec-98	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Dec-01	Jun-02	Dec-02	Jun-03	Dec-03	Jun-04	Dec-04	Jun-05
5,000–10,000																	
average teus exchanged	302	321	347	323	217	369	380	383	456	284	239	187	161	193	333	207	287
total ship visits	189	159	130	145	143	123	88	118	93	77	66	78	75	72	93	80	71
10,000–15,000																	
average teus exchanged	513	569	473	530	546	660	683	702	702	706	712	424	405	485	688	639	561
total ship visits	141	204	172	143	146	183	152	123	106	108	79	59	53	54	40	84	89
15,000–20,000																	
average teus exchanged	547	605	539	678	656	768	776	813	825	885	763	839	839	826	971	911	675
total ship visits	337	329	361	309	349	363	255	278	330	293	285	223	181	191	153	148	290
20,000–25,000																	
average teus exchanged	425	518	506	598	629	790	754	833	838	830	762	818	902	990	1014	948	802
total ship visits	219	217	200	278	280	249	270	314	276	240	233	241	182	214	199	336	321
25,000–30,000																	
average teus exchanged	513	559	608	545	591	740	682	636	869	777	888	1070	1027	1031	959	1076	954
total ship visits	103	105	97	125	95	129	153	132	116	129	186	252	286	323	344	224	332
30,000–35,000																	
average teus exchanged	808	951	754	695	696	821	912	1041	991	1061	1014	1149	1262	1374	1478	898	1221
total ship visits	207	192	206	251	252	180	208	222	187	196	216	232	175	257	247	188	223
35,000–40,000																	
average teus exchanged	746	799	793	807	831	945	1071	1149	1111	1223	1262	1403	1408	1445	1474	1396	1401
total ship visits	188	205	235	246	239	207	193	224	210	197	203	223	214	189	225	224	227
40,000–45,000																	
average teus exchanged	716	869	759	894	878	1013	1073	1133	1102	1246	1228	1465	1450	1558	1601	1101	1518
total ship visits	84	76	91	146	137	148	153	140	158	176	195	172	162	186	181	154	196
45,000–50,000																	
average teus exchanged	0	0	35	174	188	233	0	0	0	0	808	938	1201	1270	1379	868	1296
total ship visits	0	0	4	3	3	1	0	0	0	0	5	38	72	77	75	47	65
50,000–55,000																	
average teus exchanged	254	678	734	810	737	932	1007	1274	1143	1062	1134	1027	995	1044	1366	795	1744
total ship visits	5	28	24	61	64	68	56	63	55	56	60	55	61	69	22	71	89
55,000–60,000																	
average teus exchanged	513	1139	991	1026	1046	1248	1099	1223	1072	1019	1069	1166	1252	0	0	694	543
total ship visits	5	36	36	25	31	28	29	21	13	17	15	14	3	0	0	6	8
Total ship visits	1478	1551	1556	1732	1739	1679	1557	1635	1544	1489	1543	1587	1464	1632	1579	1562	1911

Source BTRE estimates based on ship call data supplied by relevant port authorities/corporations.

The average number of teus exchanged has also grown in recent years. The biggest increases in the six month period to June 2005 have been in the 5 000–10 000 (39 per cent), 30 000–35 000 (36 per cent), 40 000–45 000 (38 per cent), 45 000–50 000 (49 per cent) and in the 50 000–55 000 range (119 per cent).

TABLE 9 SHIP VISITS BY PORT, 2004–05						
Number of ship visits	Brisbane	Sydney	Melbourne	Adelaide	Fremantle	Total
5,000–10,000	84	0	66	0	1	151
10,000–15,000	36	71	59	0	7	173
15,000–20,000	146	63	214	13	2	438
20,000–25,000	195	240	132	19	71	657
25,000–30,000	120	87	122	88	139	556
30,000–35,000	85	183	54	21	68	411
35,000–40,000	92	135	113	40	71	451
40,000–45,000	83	135	52	27	53	350
45,000–50,000	62	52	26	0	0	140
50,000–55,000	3	70	15	25	47	160
above 55,000	0	14	0	0	0	14
Total	841	914	812	208	412	3501

Source BTRE estimates based on ship call data supplied by relevant port authorities/corporations.



PORT PERFORMANCE – NON-FINANCIAL

The January–June 2002 to January–June 2005 non-financial indicators for the five mainland capital city ports are presented in table 10.

Cargo throughput

Total cargo throughput at the five ports was 57.1 million tonnes for January–June 2005, compared with 58.6 million tonnes for the previous half-year July–December 2004 and 57.7 million tonnes for January–June 2004. This represented a decrease of 1.1 per cent in total cargo throughput for the five ports compared with January–June 2004 and a decrease of 2.6 per cent compared with July–December 2004.

Compared with January–June 2004, total cargo throughput in January–June 2005 increased 5.2 per cent at Brisbane, and decreased by 0.8 per cent at Sydney, 0.1 per cent at Melbourne, 5.7 per cent at Adelaide and 6.6 per cent at Fremantle.

Non-containerised general cargo throughput at the five ports was 2.518 million tonnes for January–June 2005, which represents a decrease of 7.7 per cent on the 2.338 million tonnes throughput for July–December 2004 and an increase of 10.2 per cent on the 2.285 million tonnes throughput for January–June 2004.

Total container traffic throughput for the five ports was 2.244 million teus for January–June 2005, which represents a decrease of 5.6 per cent on the 2.376 million teus throughput for July–December 2004 and an increase of 4.9 per cent on the 2.140 million teus throughput for January–June 2004.

Compared with January–June 2004, loaded teus at the five-ports increased by 3 per cent, with loaded imports increasing by 3 per cent and loaded exports increasing by 4 per cent.



TABLE 10 NON-FINANCIAL PERFORMANCE INDICATORS, SELECTED AUSTRALIAN PORTS, 2001–2005

	Jul-Dec 2001	Jan-Jun 2002	Jul-Dec 2002	Jan-Jun 2003	Jul-Dec 2003	Jan-Jun 2004	Jul-Dec 2004	Jan-Jun 2005
Five ports^d								
Total cargo throughput ('000 tonnes)	50 638	51 422	52 110	51 797	54 283	57 713	58 593	57 064
Non-containerised general cargo ('000 tonnes) ^c	1 876	1 964	2 143	2 060	2 316	2 285	2 338	2 518
Containerised cargo (teus exchanged)								
Full import	767 239	714 041	898 549	834 191	972 737	952 302	1 074 324	978 300
Empty import	144 929	134 785	127 665	117 616	116 179	129 114	115 887	135 088
Full export	640 288	632 229	659 965	618 896	651 772	694 261	721 595	719 329
Empty export	192 083	213 298	302 462	344 846	373 294	364 000	464 271	411 302
TOTAL	1 744 539	1 694 353	1 988 641	1 915 549	2 113 982	2 139 677	2 376 077	2 244 019
Average total employment ^b	759	795	803	816	865	914	934	967
Port turnaround time (hrs) ^c								
Median result	-	-	-	-	-	-	-	-
95th percentile	-	-	-	-	-	-	-	-
Brisbane								
Total cargo throughput ('000 tonnes)	11 642	11 525	12 172	12 399	12 745	12 326	13 006	12 967
Non-containerised general cargo ('000 tonnes) ^a	306	304	316	304	412	392	373	447
Containerised cargo (teus exchanged)								
Full import	88 281	85 688	114 878	107 977	137 111	124 773	158 781	133 594
Empty import	37 675	32 112	35 719	28 565	31 633	31 676	37 379	34 136
Full export	102 634	95 966	101 229	91 446	104 279	100 760	114 029	113 090
Empty export	17 874	21 393	41 581	48 809	56 923	52 117	73 495	61 643
TOTAL	246 464	235 159	293 407	276 797	329 946	309 326	383 684	342 463
Average total employment ^b	206	212	215	209	214	225	238	248
Port turnaround time (hrs) ^c								
Median result	34	32	32	31	35	32	36	45
95th percentile	53	52	55	49	59	59	72	57
Sydney								
Total cargo throughput ('000 tonnes)	12 462	11 838	12 073	11 485	12 429	12 738	13 215	12 635
Non-containerised general cargo ('000 tonnes) ^a	291	279	319	316	320	307	299	329
Containerised cargo (teus exchanged)								
Full import	270 691	236 594	309 070	277 860	320 061	323 051	366 037	320 732
Empty import	13 341	8 853	8 071	6 005	4 503	7 222	5 262	7 670
Full export	159 494	147 918	154 314	139 456	149 314	154 195	161 310	158 342
Empty export	78 535	94 027	123 810	141 927	154 189	157 721	185 558	170 699
TOTAL	522 061	487 392	595 265	565 248	628 067	642 189	718 167	657 443
Average total employment ^b	195	199	198	199	198	198	198	200
Port turnaround time (hrs) ^c								
Median result	32	30	36	32	32	32	33	28.3
95th percentile	68	55	63	58	66	55	55	51
Melbourne								
Total cargo throughput ('000 tonnes)	11 452	12 138	12 388	12 283	12 458	14 222	14 115	14 211
Non-containerised general cargo ('000 tonnes) ^a	753	834	896	930	984	1 032	1 015	1 126
Containerised cargo (teus exchanged)								
Full import	310 034	295 343	358 818	337 671	388 339	386 413	446 960	406 623
Empty import	60 384	58 936	52 600	52 238	48 478	57 082	51 113	59 334
Full export	273 910	279 866	291 272	277 392	276 401	315 000	323 454	329 766
Empty export	68 761	73 547	104 266	119 541	127 967	118 038	152 055	141 136
TOTAL	713 089	707 692	806 956	786 842	841 185	876 533	973 582	936 859
Average total employment ^b	93	96	95	102	142	170	171	184
Port turnaround time (hrs) ^c								
Median result	36	35	37	36	35	38	39	33
95th percentile	68	63	68	62	57	65	78	60
Adelaide								
Total cargo throughput ('000 tonnes)	3 934	4 446	4 130	3 524	4 478	4 982	5 273	4 699
Non-containerised general cargo ('000 tonnes) ^a	189	239	251	171	238	213	263	207
Containerised cargo (teus exchanged)								
Full import	21 097	19 591	21 864	19 015	22 214	19 317	20 564	19 785
Empty import	11 714	15 055	11 715	13 050	15 895	14 073	16 774	19 663
Full export	34 482	35 793	37 358	33 468	43 874	41 734	39 277	40 259
Empty export	4 117	3 377	5 660	6 203	6 757	5 244	7 503	6 760
TOTAL	71 410	73 816	76 597	71 736	88 740	80 368	84 118	86 467
Average total employment ^b	98	95	97	95	94	95	97	95
Port turnaround time (hrs) ^c								
Median result	22	21	19	21	23	24	23	22
95th percentile	43	43	29	40	41	43	60	41
Fremantle								
Total cargo throughput ('000 tonnes)	11 147	11 476	11 348	12 105	12 173	13 445	12 984	12 551
Non-containerised general cargo ('000 tonnes) ^a	337	309	361	338	361	341	389	409
Containerised cargo (teus exchanged)								
Full import	77 136	76 825	93 919	91 668	105 012	98 748	111 982	97 566
Empty import	21 815	19 829	19 560	17 758	15 670	19 061	14 630	14 285
Full export	69 768	72 686	75 792	77 134	77 904	82 572	83 525	77 872
Empty export	22 796	20 954	27 145	28 366	27 458	30 880	36 389	31 064
TOTAL	191 515	190 294	216 416	214 926	226 044	231 261	246 526	220 787
Average total employment ^b	167	193	199	211	217	226	230	241
Port turnaround time (hrs) ^c								
Median result	21	22	25	25	28	29	31	24
95th percentile	46	52	60	52	57	63	60	51

- not applicable

a. Excludes bulk cargoes.

b. Comparisons between ports are not appropriate because each port authority/corporation has a different structure.

c. Port turnaround times refer only to ships calling at container terminals. Comparisons between ports are not appropriate because each port has a different set of parameters to measure the turnaround time. Normally, only inter-temporal comparison at individual ports is of use.

d. Components may not sum to totals due to rounding.

Source AAPMA



HARBOUR TOWAGE CHARGES

Table 11 provides the publicly available towage charges for the five mainland capital city ports, as well as a selection of regional ports, as at 30 June 2004 and the 30 June 2005 for the two representative vessel sizes, 19 999 GRT and 59 999 GRT.

Six of the ten ports recorded changes to towage charges during the 2004-05 financial year:

- *Sydney*—a 2.1 per cent increase in the 19 999 GRT vessel size and a 2.1 per cent increase in the 59 999 GRT vessel size;
- *Adelaide*—a 3.0 per cent increase in the 19 999 GRT vessel size and a 9.4 per cent increase in the 59 999 GRT vessel size;
- *Fremantle*—a 3.3 per cent increase in the 19 999 GRT vessel size and a 3.3 per cent increase in the 59 999 GRT vessel size;
- *Bunbury*—a 3.0 per cent increase for both vessel sizes;
- *Gladstone*—a 6.5 per cent increase for both vessel sizes;
- *Newcastle*—a 3.0 per cent increase in the 19 999 GRT vessel size and a 8.9 per cent decrease in the 59 999 GRT vessel size;

There was some variation in the five port and regional ports average charge levels between the two periods, however the variation was small.

Towage charges are collected for the purpose of monitoring trends in charges over time and should, therefore, be interpreted with caution. They should not be used for inter-port comparisons as local conditions vary between ports, and charges may vary for individual ship operators based on negotiated contracts.

TABLE 11 HARBOUR TOWAGE CHARGES 2004 AND 2005

Capital City Port	Adelaide		Brisbane		Fremantle		Melbourne		Sydney ^b		5 Ports Average	
	30-Jun 2004	30-Jun 2005	30-Jun 2004	30-Jun 2005	30-Jun 2004	30-Jun 2005	30-Jun 2004	30-Jun 2005	30-Jun 2004	30-Jun 2005	30-Jun 2004	30-Jun 2005
Vessel size (GT)												
19 999 GT												
\$ Per Tug Rate ^a	3 805	3 918	2 971	2 971	2 513	2 596	3 592	3 592	2 860	2 920	3 148	3 199
59 999 GT												
\$ Per Tug Rate ^a	5 109	5 587	4 368	4 368	4 251	4 389	3 988	3 988	3 313	3 382	4 206	4 343
Regional Port	Bunbury		Burnie		Gladstone		Newcastle		Port Kembla		5 Ports Average	
	30-Jun 2004	30-Jun 2005	30-Jun 2004	30-Jun 2005	30-Jun 2004	30-Jun 2005	30-Jun 2004	30-Jun 2005	30-Jun 2004	30-Jun 2005	30-Jun 2004	30-Jun 2005
Vessel size (GT)												
19 999 GT												
\$ Per Tug Rate ^a	3 014	3 105	3 080	3 080	1 793	1 909	3 179	3 274	2 416	2 416	2 696	2 757
59 999 GT												
\$ Per Tug Rate ^a	4 494	4 629	na	na	3 339	3 556	5 044	4 597	5 377	5 377	4 563	4 540

na not applicable

a. Cost for each tug to assist a ship arriving at or departing from a berth within the limits of the port at any time.

b. Sydney is represented by tariffs charged at Port Botany only.

Source BTRE estimates based on towage operators' tariff schedules, where there is more than one operator, the charges have been averaged.

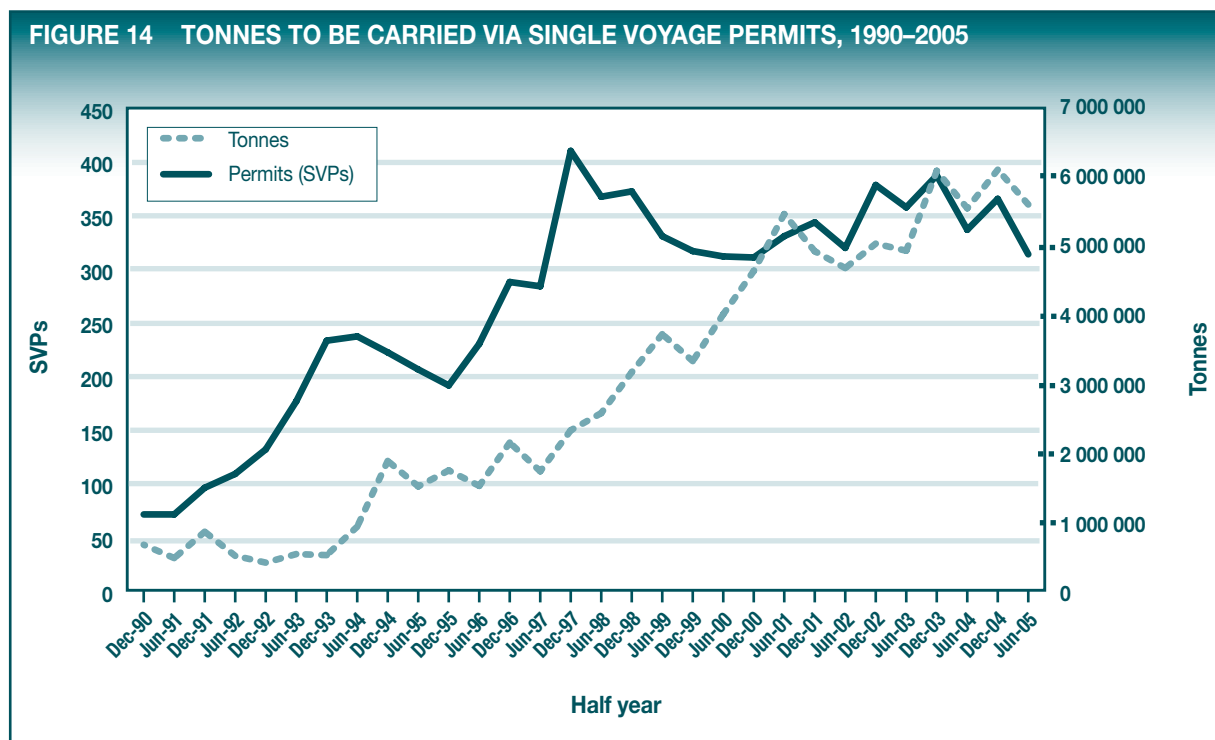


COASTAL SHIPPING PERMITS

Total tonnages of cargo permits issued to applicants under Single Voyage Permits (SVPs) and Continuing Voyage Permits (CVPs) increased by 1.6 per cent from 15.0 million tonnes in the calendar year 2004 to 15.2 million tonnes in the financial year 2004–05.

Single voyage permits

Figure 14 illustrates the number of SVPs issued, and the pre-voyage estimation of tonnes of cargo to be carried, between January–June 1991 and January–June 2005. The number of SVPs issued in January–June 2005 decreased by 14.2 per cent compared with July–December 2004 and by 6.8 per cent compared with the January–June 2004 period. The associated estimated tonnes of cargo to be carried decreased by 8.3 per cent compared with July–December 2004, and increased by 1.0 per cent compared with January–June 2004.



Note All tonnages are pre-voyage estimates.

Source Office of Transport Security, Department of Transport & Regional Services.

Table 12 gives a breakdown of SVPs by cargo types for January–June 2005. General cargo (including containerised cargo) permits now represent 3 per cent by weight, while making up 41 per cent of total permits issued. Bulk cargo accounts for 97 per cent of the total tonnage moved under SVPs.

TABLE 12 SUMMARY OF SINGLE VOYAGE PERMITS ISSUED, JANUARY–JUNE 2005

Cargo Category	Permits	Tonnes
Bulk Cargo		
Petroleum Products	48	1 514 883
Liquefied Gas	4	43 830
Other Bulk Liquids	8	71 268
Dry Bulk	125	3 806 486
General Cargo	129	174 853
Total	314	5 611 320

Note Tonnages are the pre-voyage estimation of the tonnes to be carried.

Source Office of Transport Security, Department of Transport & Regional Services.

Continuing voyage permits

Although CVPs were available prior to 1998, they were rarely requested or issued during this period. Since 1998, there have been significant fluctuations in both the number of permits issued and the tonnage to be carried, as shown in figure 15. In January–June 2005, a total of 1.57 million tonnes of CVPs were issued, compared with 1.93 million tonnes in July–December 2004 and 1.38 million tonnes in January–June 2004.

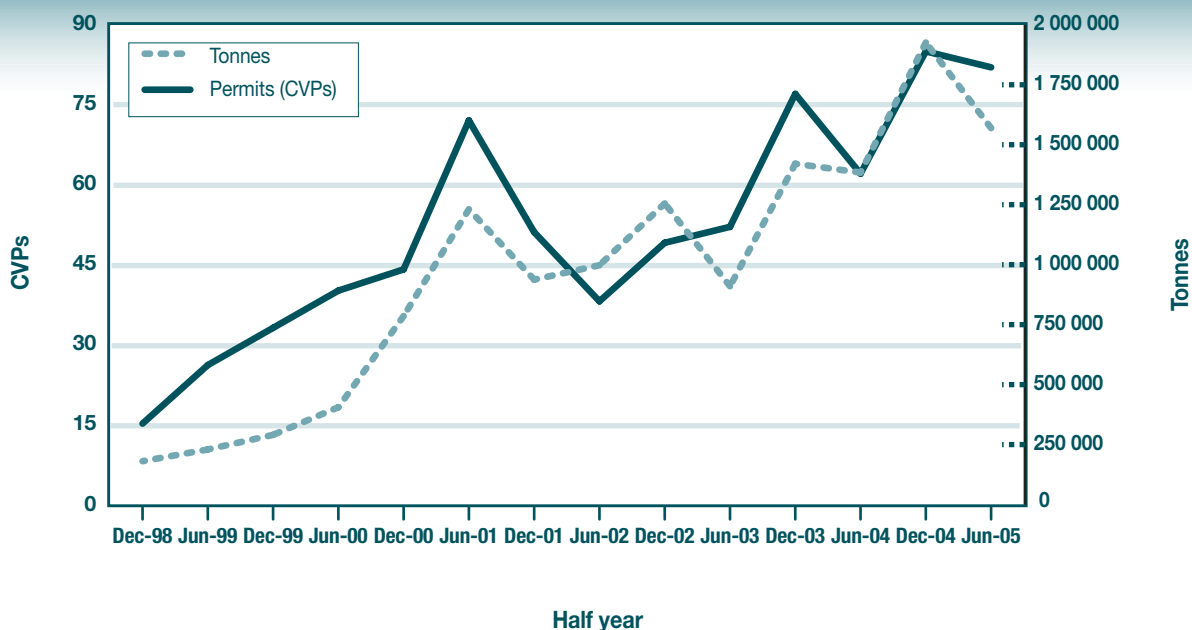
CVPs issued since the start of 2003 have been for 3 months maximum duration rather than the 6 months allowed previously. One CVP is estimated to be equivalent to three SVPs on average.

In January–June 2005 there were 82 CVPs issued compared with 62 in the same period in 2004, an increase of 32.3 per cent.

More information on coastal permits can be found on the Department of Transport and Regional Services' internet site at http://www.dotars.gov.au/transreg/str_permits.aspx



FIGURE 15 TONNES TO BE CARRIED VIA CONTINUING VOYAGE PERMITS, 1998–2005



Note All tonnages are pre-voyage estimates.

Source Office of Transport Security, Department of Transport & Regional Services.

FIGURE 16 TOTAL COASTAL TRADE, 1990–2005



Note Total coastal trade figures for 2003–04 are not available at the time of publishing.

Sources BTRE estimates and the Office of Transport Security, Department of Transport & Regional Services.



WATERFRONT RELIABILITY

Waterline reliability indicators provide partial measures of the variability of waterfront performance for container movements at major Australian ports. They cover the timeliness of selected port services, factors contributing to ship waiting time, aspects of stevedoring performance and the accuracy of ship arrival advice.

Berth availability, pilotage, towage

Table 13 presents information on berth availability, pilotage and towage for samples of ship calls in the March and June quarters 2005. The data indicates the extent to which selected port services were available at the scheduled or confirmed time.

TABLE 13 AVAILABILITY OF BERTH, PILOTAGE AND TOWAGE SERVICES AT THE SCHEDULED/CONFIRMED TIME, MARCH AND JUNE QUARTERS 2005

Number of ship calls—Delay in hours																				
March Quarter 2005										June Quarter 2005										
Port/operation	0	1	2	3	4	5-10	11-20	>20	Total calls	0	1	2	3	4	5-10	11-20	>20	Total calls		
Five ports																				
Berth availability	84	1	5	5	5	10	2	4	118	102	0	5	4	7	6	2	3	129		
Pilotage	116	0	0	0	1	1	0	0	118	127	0	1	1	0	0	0	0	129		
Towage	118	0	0	0	0	0	0	0	118	128	0	1	0	0	0	0	0	129		
Brisbane																				
Berth availability	8	1	3	3	2	1	1	0	19	20	0	0	2	1	1	0	1	25		
Pilotage	18	0	0	0	1	0	0	0	19	25	0	0	0	0	0	0	0	25		
Towage	19	0	0	0	0	0	0	0	19	25	0	0	0	0	0	0	0	25		
Sydney																				
Berth availability	38	0	0	0	0	4	0	1	43	39	0	2	0	0	3	1	2	47		
Pilotage	43	0	0	0	0	0	0	0	43	47	0	0	0	0	0	0	0	47		
Towage	43	0	0	0	0	0	0	0	43	47	0	0	0	0	0	0	0	47		
Melbourne																				
Berth availability	22	0	2	1	3	4	1	3	37	31	0	2	1	6	2	1	0	43		
Pilotage	37	0	0	0	0	0	0	0	37	41	0	1	1	0	0	0	0	43		
Towage	37	0	0	0	0	0	0	0	37	42	0	1	0	0	0	0	0	43		
Adelaide																				
Berth availability	8	0	0	1	0	0	0	0	9	6	0	1	0	0	0	0	0	7		
Pilotage	8	0	0	0	0	1	0	0	9	7	0	0	0	0	0	0	0	7		
Towage	9	0	0	0	0	0	0	0	9	7	0	0	0	0	0	0	0	7		
Fremantle																				
Berth availability	8	0	0	0	0	1	0	0	10	6	0	0	1	0	0	0	0	7		
Pilotage	10	0	0	0	0	0	0	0	10	7	0	0	0	0	0	0	0	7		
Towage	10	0	0	0	0	0	0	0	10	7	0	0	0	0	0	0	0	7		
<i>Note Inter-port comparisons should be interpreted with caution as there is significant variation between ports in factors such as sample sizes and ship call patterns.</i>																				
<i>Source Data for a sample of ship calls provided by shipping lines.</i>																				

Note Inter-port comparisons should be interpreted with caution as there is significant variation between ports in factors such as sample sizes and ship call patterns.

Source Data for a sample of ship calls provided by shipping lines.

The sample for the March quarter 2005 covers 118 ship calls, equivalent to around 13 per cent of total ship calls at the five major container terminals during the period. The proportion of ship calls covered at individual ports ranges from 9 per cent at Fremantle to 17 per cent at Adelaide. The sample for the June quarter 2005 covers 129 ship calls, equivalent to around 16 per cent of total ship calls at the five major container terminals during the period. The proportion of ship calls covered at individual ports ranges from 6 per cent at Fremantle to 17 per cent at Adelaide. The March quarter figures for Fremantle should be treated with caution due to the low percentage of calls captured in the sample. The samples include calls by container ships operating to and from Europe, the Mediterranean, the Middle East, North America, Asia and New Zealand.

The berth availability indicator measures the proportion of ship arrivals where a berth is available within four hours of the scheduled berthing time. Figure 17 shows that berth availability for the sample of ship calls was 84.7 per cent in the March quarter 2005. This was lower than in the previous quarter. Berth availability was 91.5 per cent in the June quarter 2005. Caution should be used in undertaking inter-port comparisons of the berth availability data, as there is significant variation between ports in sample sizes and ship call patterns.

Average waiting time for ships unable to obtain a berth within four hours of the scheduled berthing time was 15.6 hours in the March quarter 2005, an increase of 1.6 hours over the previous quarter. Average berth waiting time was 18.5 hours in the June quarter 2005.

The pilotage and towage indicators reported in *Waterline* measure the proportion of ship movements where the service is available to the ship within one hour of the confirmed ship arrival/departure time. The proportion in the March quarter 2005 was 98.3 per cent for the pilotage indicator, lower than in the previous December quarter 2004, and 100 per cent for the towage indicator. Pilotage was 98 per cent in the previous quarter and towage was 99 per cent. The proportion in the June quarter 2005 was 98 per cent for pilotage indicators and 100 per cent for towage indicators. Performance has been at similar levels since the first data (covering the March quarter 1997) were published in *Waterline*.



Other waiting time

The five shipping lines that supplied information for table 13 also provided data on other ship waiting time. This category incorporates waiting time that is attributable to factors other than the unavailability of a berth, pilot or towage service at the scheduled/confirmed time. The data on other ship waiting time reported in *Waterline* exclude ship schedule adjustments.

Table 14 summarises the data on other waiting time incidents which had a duration of at least one hour, in the March and June quarters 2005. The shipping lines identified a total of 58 incidents (affecting 118 ship calls) for the sample of ship calls over the March quarter. They identified 50 incidents (affecting 129 ship calls) in the June quarter. These incidents involved both ship-related and waterfront factors.

TABLE 14 OTHER SHIP WAITING TIME INCIDENTS AT THE FIVE MAINLAND CAPITAL CITY PORTS, MARCH AND JUNE QUARTERS 2005

Incident type	March Quarter 2005								June Quarter 2005							
	Number of incidents—Ship waiting time (hours)															
	1	2	3	4	5-10	11-20	>20	Total	1	2	3	4	5-10	11-20	>20	Total
Awaiting labour	0	2	1	0	3	2	0	8	1	0	1	0	4	1	0	7
Early ship arrival	2	0	1	0	2	0	0	5	1	2	0	0	0	1	1	5
Stevedoring finished early	1	6	1	2	1	0	0	11	0	1	0	0	5	0	0	6
Crane breakdown	1	0	0	0	1	0	0	2	1	1	0	1	2	2	1	8
Pilot/tug booking not at preferred time	0	0	1	0	0	0	0	1	8	1	0	0	0	1	0	10
Stevedoring finished late	0	0	0	0	1	0	0	1	2	0	1	0	1	0	0	4
Late ship arrival	0	0	0	0	2	0	0	2	0	1	0	0	0	0	1	2
Industrial action	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Ship repairs or maintenance	0	0	0	1	0	0	0	1	0	0	0	1	1	1	1	4
Weather or tides	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Other	0	0	0	0	2	3	1	6	0	0	0	0	3	3	1	7
Total incidents	4	8	4	3	12	5	1	37 ^a	13	6	3	2	16	10	5	55 ^b

a. These incidents affected 58 of the 118 ship calls covered in the March quarter.

b. These incidents affected 50 of the 129 ship calls covered in the June quarter.

Sources Data for a sample of ship calls provided by shipping lines.

The total waiting time attributable to particular incident types reflects the number of incidents and the waiting time associated with individual incidents. The largest single source of other ship waiting time in the March quarter 2005 was the category of “stevedoring finished early”, which accounted for 30 per cent of total waiting time incidents. “Awaiting labour” was related to a further 22 per cent of total waiting time incidents. The largest single source of other ship waiting time in the June quarter 2005 was the category of “pilot /tug booking not at a preferred time”, which accounted for 18 per cent of total waiting time incidents. “Awaiting labour” accounted for 13 per cent of total waiting time incidents, and “stevedoring finished late” was related to a further 7 per cent of total waiting time incidents.

In the March quarter 2005, 49 per cent of ship calls in the sample were affected by other waiting time incidents that had a duration of at least one hour, down from 62 per cent in the December quarter 2004. The average duration of other waiting time incidents was 7 hours per affected ship call in the March quarter 2005, down from 9 hours per affected ship call in the previous quarter. In the June quarter 2005, 39 per cent of ship calls in the sample were affected by other waiting time incidents that had a duration of at least one hour. The average duration of other waiting time incidents was 14 hours per affected ship call in the June quarter 2005.

Figure 18 provides information on other ship waiting time over the period since the June quarter 1997. It indicates the proportion of ship calls affected and the average duration of other waiting time per affected ship call in each quarter.

Stevedoring

Table 15 presents the available information on another aspect of stevedoring reliability at major container terminals — cargo receipt. Data were not available for Adelaide.

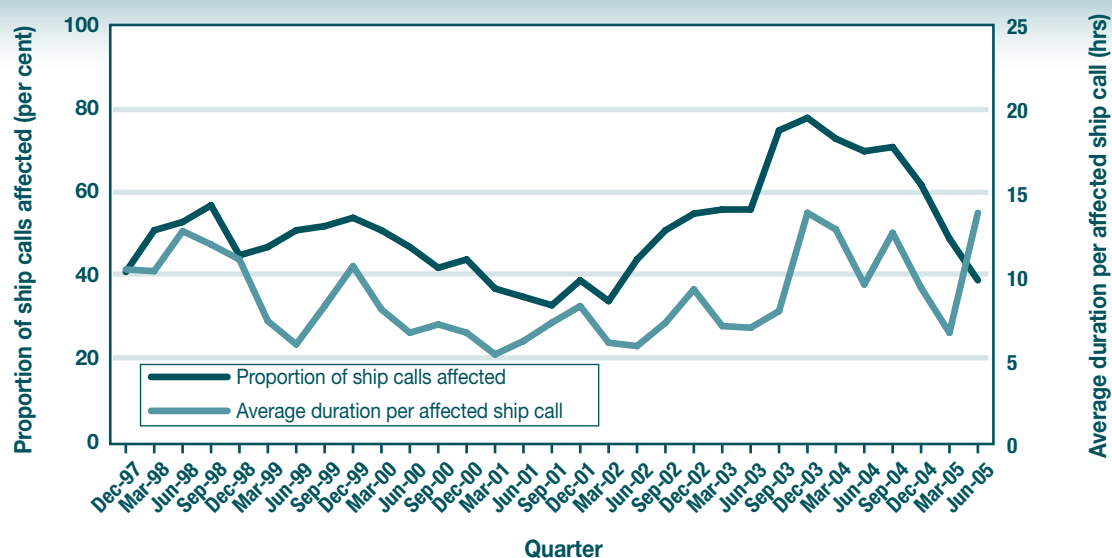
Cargo receipt is the proportion of receipts (exports) completed by the stevedore’s cut-off time. It provides a partial measure of one factor that can affect container terminal performance. Cargo receipt in the March quarter 2005 increased at Melbourne and was elsewhere unchanged compared with the previous quarter. Cargo receipt in the June quarter 2005 increased Brisbane and Melbourne, was unchanged at Fremantle and fell at Sydney, compared with the previous quarter.

Ship arrival

Table 15 also includes data for two indicators of ship arrival advice.

The first indicator is the proportion of ship arrivals within one hour (plus or minus) of the most recently advised arrival time available to the port authority/corporation at 24 hours prior to actual arrival. Compared with the previous quarter, the March quarter 2005 indicator rose at Brisbane, Sydney and Fremantle. It was not available



FIGURE 18 OTHER SHIP WAITING TIME INCIDENTS AT MAJOR CONTAINER TERMINALS, 1997–2005

Source Data for a sample of ship calls provided by shipping lines.

for Melbourne and Adelaide. In the June quarter 2005, the indicator fell at Brisbane, Sydney and Fremantle. It was not available for Melbourne and not comparable for Adelaide.

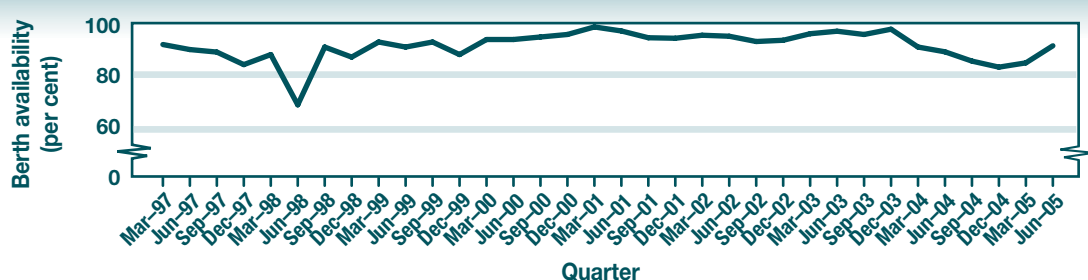
TABLE 15 STEVEDORING AND SHIP ARRIVAL RELIABILITY INDICATORS, MARCH AND JUNE QUARTERS 2005

Indicator	(per cent)									
	Brisbane		Sydney		Melbourne		Adelaide		Fremantle	
	Jan-Mar	Apr-Jun	Jan-Mar	Apr-Jun	Jan-Mar	Apr-Jun	Jan-Mar	Apr-Jun	Jan-Mar	Apr-Jun
Stevedoring										
Cargo receipt	92	95	91	90	83	84	na	na	98	98
Ship arrival										
Advice at 24 hrs	52	45	41	40	na	na	na	94	72	52
Advice inside 24 hrs	94	94	94	91	na	na	na	96	92	86

na not available

Sources AAPMA, Patrick and P&O Ports, DPI Terminals.

The second indicator is the proportion of ship arrivals within one hour (plus or minus) of the last scheduled arrival time advised inside the 24 hours prior to actual arrival. In the March quarter 2005, this indicator rose at Sydney and Fremantle, remained the same for Brisbane and was not available for Melbourne and Adelaide. In the June quarter 2005, this indicator fell at Sydney and Fremantle remained the same at Brisbane and was not available for Melbourne and not comparable for Adelaide.

FIGURE 19 BERTH AVAILABILITY AT MAJOR CONTAINER TERMINALS, 1997–2005

Source Data for a sample of ship calls provided by shipping lines.



ABBREVIATIONS AND OTHER PORT SERVICE PROVIDERS

AAPMA	Association of Australian Ports and Marine Authorities
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
BTRE	Bureau of Transport and Regional Economics
CVP	Continuing Voyage Permit
DOTARS	Department of Transport and Regional Services
Five-port	The five mainland capital city ports (Brisbane, Sydney, Melbourne, Adelaide, Fremantle)
GT	Gross Tons, formerly GRT
SVP	Single Voyage Permit
Teu	Twenty-foot equivalent unit
UCC	Fully cellular container vessel

STEVEDORING PRODUCTIVITY DEFINITIONS

Containers Handled	The total number of containers lifted on/off fully cellular ships.
Crane Intensity	The total number allocated crane hours, divided by the elapsed time from labour first boarding the ship and labour last leaving the ship.
Crane Rate	The total containers/teus handled divided by the Elapsed Crane Time.
Elapsed Crane Time	The total allocated crane hours, less operational and non-operational delays.
Elapsed Labour Time	The elapsed time between labour first boarding the ship and labour last leaving the ship, less non-operational delays.
Ship Rate	The Crane Rate multiplied by Crane Intensity (as defined above).
Ships	Only fully cellular ships are included in calculations. Fully cellular ships are defined as purpose-built container ships equipped with 40-foot cell guides below deck as a minimum, and exclude such vessels if used for mixed cargoes of containers and general cargo.
TEUs Handled	The total 40-foot containers lifted on/off fully cellular ships multiplied by 2, plus the total 20-foot containers lifted on/off fully cellular ships.
Vessel Working Rate	The total containers/teus handled divided by the Elapsed Labour Time.



TABLE 16 CONTAINER TERMINAL PERFORMANCE INDICATORS, SELECTED AUSTRALIAN PORTS—PRODUCTIVITY IN TEUS PER HOUR

	Jun-01	Sep-01	Dec-01	Mar-02	Jun-02	Sep-02	Dec-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	Jun-04	Sep-04	Dec-04	Mar-05	Jun-05
Five Ports																	
Ships handled	813	825	846	824	868	858	856	821	822	841	850	801	825	905	936	890	993
Total teus	661326	762202	787093	724311	788090	878522	938913	871089	870861	952273	1023224	963667	1018623	1096611	1161451	1042313	1035658
Crane rate	35.2	34.2	34.8	35.4	35.9	35.9	35.6	35.3	37.4	38.5	37.8	38.2	39.0	38.9	38.4	38.2	38.6
Vessel working rate	37.8	39.2	39.6	39.6	41.1	43.4	42.2	42.9	44.3	47.9	46.5	46.7	47.3	46.2	46.6	48.9	49.3
Ship rate	53.3	55.0	55.4	55.4	56.3	59.9	59.4	58.8	61.7	67.4	64.4	64.6	66.1	65.0	64.8	65.4	64.8
Throughput pbm	92.7	106.8	110.3	101.5	110.4	122.8	131.6	122.1	122.0	133.4	143.4	135.0	142.7	153.7	162.7	146.1	145.1
Brisbane																	
Ships handled	188	175	198	202	211	216	216	206	184	192	194	179	175	219	227	205	222
Total teus	108810	105746	112586	100033	121920	136771	143882	130384	124854	147273	158065	146104	151138	188092	191414	165403	158860
Crane rate	35.1	32.7	32.1	34.1	35.2	34.6	35.6	33.8	35.8	35.0	35.4	36.1	37.5	37.7	37.8	38.5	37.4
Vessel working rate	30.2	28.7	28.5	28.5	30.0	32.0	32.3	32.6	36.3	34.2	36.3	36.9	40.7	36.9	33.1	37.1	36.7
Ship rate	46.5	46.8	45.5	46.9	48.2	50.2	53.9	50.4	55.3	53.7	55.9	57.7	61.5	59.3	58.9	58.8	55.1
Throughput pbm	67.7	65.8	70.1	62.2	75.9	85.1	89.5	81.1	77.7	91.6	98.4	90.9	94.0	117.0	119.1	102.9	98.9
Sydney																	
Ships handled	202	208	206	196	203	204	210	211	217	228	238	221	231	253	262	258	283
Total teus	205126	242823	252521	228723	235664	277733	302267	278456	271501	303745	336988	306080	327661	347047	371243	330140	330816
Crane rate	34.0	34.4	35.2	36.8	37.4	36.2	35.2	35.7	38.0	39.4	37.3	37.7	39.0	39.0	38.6	38.3	39.5
Vessel working rate	38.2	42.5	42.7	43.9	46.7	49.4	45.8	46.2	49.5	53.3	47.1	51.0	51.0	48.5	50.4	49.9	52.6
Ship rate	54.1	60.1	60.2	60.7	62.8	65.5	61.7	61.9	67.2	73.0	64.8	67.8	67.7	65.1	68.0	66.8	68.8
Throughput pbm	105.6	125.0	130.0	117.8	121.4	143.0	155.6	143.4	139.8	156.4	173.5	157.6	168.7	178.7	191.2	170.0	170.3
Melbourne																	
Ships handled	215	243	249	234	251	250	243	229	235	240	241	223	244	266	272	260	299
Total teus	228400	285947	294753	274108	295284	325945	342684	317711	327822	342966	361225	351753	379002	397048	425247	392776	386211
Crane rate	35.7	33.9	35.0	35.1	35.6	36.6	35.7	35.3	38.0	39.7	39.8	40.6	40.8	40.5	38.7	38.4	38.4
Vessel working rate	41.0	40.7	41.9	42.0	42.4	45.5	43.8	45.7	45.1	51.9	53.0	50.4	50.3	50.9	50.1	54.8	53.7
Ship rate	57.3	56.2	57.1	57.9	58.5	63.6	61.9	61.8	61.6	72.4	71.8	69.9	72.1	71.7	67.2	69.6	67.5
Throughput pbm	125.1	156.6	161.4	150.1	161.7	178.5	187.7	174.0	179.5	187.8	197.8	192.6	207.6	217.4	232.9	215.1	211.5
Adelaide																	
Ships handled	57	57	57	54	59	55	58	50	58	62	63	60	60	54	56	53	68
Total teus	33308	34867	36633	31815	41829	37317	39354	37731	40012	44510	47571	43768	44335	44741	43850	43588	47775
Crane rate	33.4	32.1	32.8	33.0	30.7	30.2	31.3	33.2	34.2	35.4	36.4	35.0	35.7	36.0	37.7	37.4	38.7
Vessel working rate	44.9	38.6	40.8	42.2	43.9	42.2	44.3	46.5	44.9	39.4	43.4	40.9	39.7	42.9	44.7	46.8	42.7
Ship rate	49.5	42.7	44.7	46.5	47.4	44.7	49.7	53.1	52.8	47.6	49.9	47.3	45.4	50.9	49.6	54.8	49.5
Throughput pbm	70.9	74.2	77.9	67.7	89.0	79.4	83.7	80.3	85.1	94.7	101.2	93.1	94.3	95.2	93.3	92.7	101.6
Fremantle																	
Ships handled	151	142	136	138	144	133	129	125	128	119	114	118	115	113	119	114	121
Total teus	85682	92819	90600	89632	93393	98756	110726	106807	106672	113779	119375	115962	116487	119683	129697	110406	111996
Crane rate	37.9	37.4	37.5	35.4	36.6	36.8	38.4	36.7	37.3	38.7	36.7	36.7	36.3	36.4	38.3	36.5	38.7
Vessel working rate	35.0	37.8	36.6	32.8	35.7	36.0	39.5	37.2	38.3	42.3	40.0	38.2	38.5	40.1	44.6	43.4	45.0
Ship rate	50.8	52.3	53.0	46.6	47.4	51.2	56.2	54.2	59.1	62.5	57.6	55.4	56.1	57.0	61.7	60.1	63.5
Throughput pbm	66.3	71.9	70.2	69.4	72.3	76.5	85.7	82.7	82.6	88.1	92.4	89.8	90.2	92.7	100.4	85.5	86.7
<i>na not available</i>																	
<i>r revised</i>																	
<i>pbm per berth metre</i>																	

Notes 1. Data from CSX World Terminals at Brisbane are incorporated from the December quarter 1999 until June quarter 2001

2. For data back to the December quarter 1993, refer to Waterline 34.

Sources Patrick, P&O Ports and DPI Terminals





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