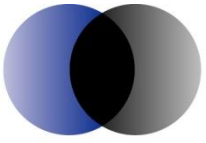
Benchmarking of Port Prices for Victorian Ports

Prepared for Victorian Essential Services Commission

April 2009



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1 Introduction

This benchmarking study of ports has been prepared to assist the Victorian Essential Services Commission in their review of Victorian ports regulation. In this study, the cost of using Victorian ports has been compared against other major capital city ports and Port Kembla using publicly available information.

2 Methodology

In this benchmarking study, a model ship approach has been adopted, a method that has previously been used by the Essential Services Commission of South Australia (ESCOSA) (2006) and by consultants Meyrick and Associates (2007). This approach compares port charges by:

- defining a typical vessel
- defining a typical cargo load for each trade of interest
- examination of the costs incurred by that vessel visiting a particular port.

Table 1 below shows the commodity classifications used in this analysis.

Table 1 **Commodity classification**

Commodity	Vessel Type
Bulk grain	Handymax / Panamax
Standard dry bulk	Handymax
Liquid bulk	Liquid Bulk Carrier
Motor vehicles	Motor Vehicle Carrier
Container	Containership

The Victorian ports included in this study were the Port of Melbourne, the Port of Geelong, the Port of Hastings and the Port of Portland. The non-Victorian ports included in this study were the Port of Adelaide, the Port of Sydney, the Port of Brisbane, the Port of Fremantle and Port Kembla.

Data for the benchmarking study was obtained only from publicly available sources. The primary information was obtained from port websites. In some instances assumptions have had to be made regarding the exact composition of cargoes and prices and where this is done it is acknowledged in the text below. Given the high level nature of the analysis, the estimates provided are only indicative.

In regard to information on container stevedoring performance and the loading rates achievable at bulk handling facilities, the default handling rate assumptions previously made by Meyrick and Associates (2007, p. 19) have been used in this study.

Port charges levied on visiting ships generally fit into the following three categories:

- Navigation service charges: these charges are levied on a ship on entry to port and are generally regarded as a charge for the right to enter the port and the provision of navigational aids, maritime access channels and port traffic control.[1]
- Harbour service charges: these charges are levied against the ship when it is alongside the wharf.
- Cargo service charges: these charges are levied on the basis of the volume loaded or discharges in the port.

3 Vessel specifications

For each of the commodity classes included in this study, a model ship was defined based on the model ships used by Meyrick and Associates (2007, p. 19). For grain two model ships were modelled: a Handymax and a Panamax. For dry bulk, the model ship was assumed to be the same as a grain Handymax.

For bulk liquids, the model ship is based on a 30,000 gross tonne vessel that typically carries 40,000 kilolitres (kl) of liquid cargo. This is the model ship that is typically used to estimate import parity prices in Australian refined petroleum product supply contracts.[2]

For motor vehicle carriers, a carrier that is assumed to carry 2,500 vehicles has been used. For charges at specific ports, some assumptions have had to be made regarding the size of motor vehicles delivered. For containerships, the larger of the two ships used by the Bureau of Infrastructure, Transport, and Regional Economics (BITRE) (2008) in its *Waterline* series has been used which is assumed to exchange on average 1505 twenty-foot equivalent units (TEUs) at each of the major capital city ports of call.

[1] Harbour towage services have not been included as this information is generally not publicly available.

[2] For the Port of Brisbane an assumption has been used for the cost of wharfage that has been based on the cost of harbour dues as the actual price is only available "price on application".

The full specifications for all model vessels are presented in Table 2 below.

Table 2 **Model ship assumptions used for the benchmarking study**

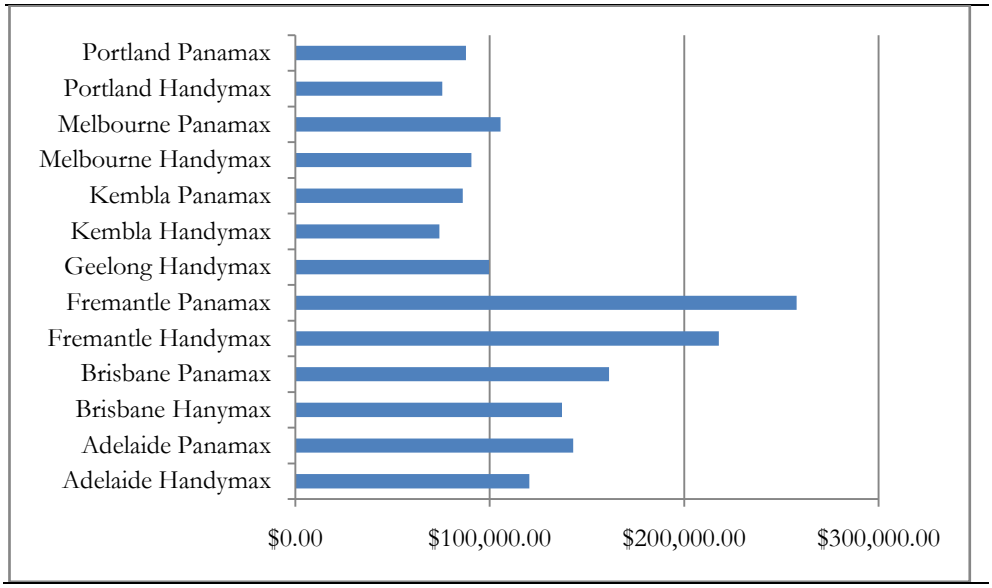
Specification	Grain Handymax	Grain Panamax	Dry Bulk	Liquid Bulk	Motor Vehicle	Container
Gross Tonnage	28,500	30,300	28,500	30,000	42,215.5	37,394
Net Tonnage	20,000	22,000	20,000	12,379		15,644
Deadweight Tonnage	45,000	55,000	45,000	47,030	14,840.8	46,116
Length Overall m	185	190	185	183	178.6	225
Summer Draught m	11.5	13	11.5	12.37	8.5	12
Actual Draught m	11.25	12	11.25	12	8	11
Cargo Type	Bulk Grain	Bulk Grain	Standard Dry Bulk	Liquid Bulk	Motor Vehicles	Container
Cargo Worked	40,000 tonnes	48,000 tonnes	40,000 tonnes	40,000 kl	2,500 Vehicles	1505 TEU
Handling Rates per hour	500 tonnes	500 tonnes	500 tonnes	600 kl	200 vehicles	15 TEU
Non Working Time (hours)	6	6	6	6	2	2

4 Ship visit summary

4.1 Grain vessels

For both Handymax and Panamax grain vessels, Port Kembla was the lowest cost port closely followed by the Port of Portland, and then the Port of Melbourne and the Port of Geelong with a considerable cost differential with the other three ports included in this section of the study.

Figure 1 **Grain vessels (Handymax and Panamax) visit costs total**



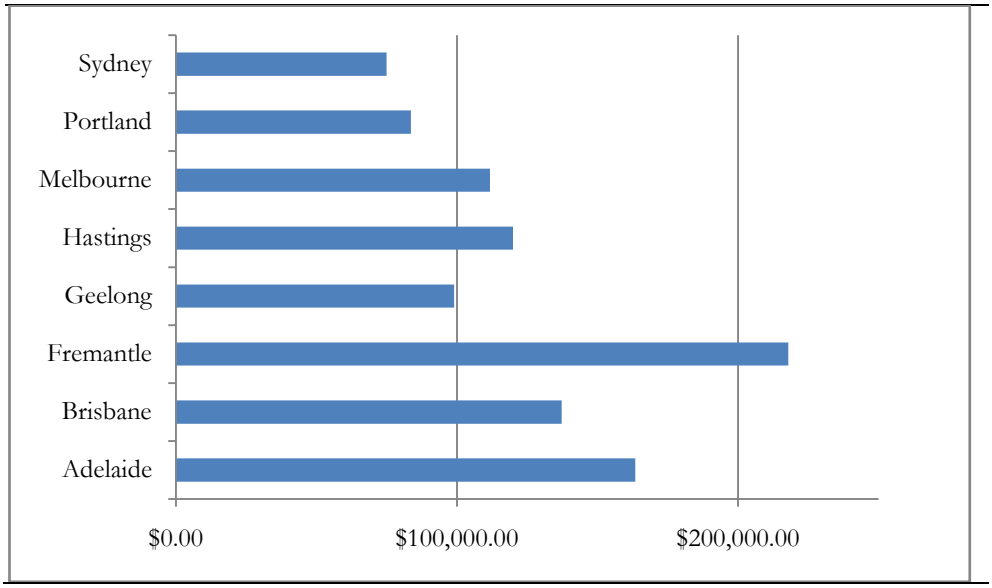
Note: Panamax vessels cannot access the Port of Geelong fully loaded due to draught restrictions so have been excluded from the analysis.

The total dollar amounts for each type of grain vessel for each port are provided below in Table 3 in the Appendix.

4.2 General dry bulk vessels

For general dry bulk vessels, the Port of Sydney was the cheapest port closely followed by the Port of Portland and then the Port of Geelong. Melbourne and Hastings were more expensive, with Brisbane, Adelaide and Fremantle more expensive again.

Figure 2 **General dry bulk vessel visit costs total**

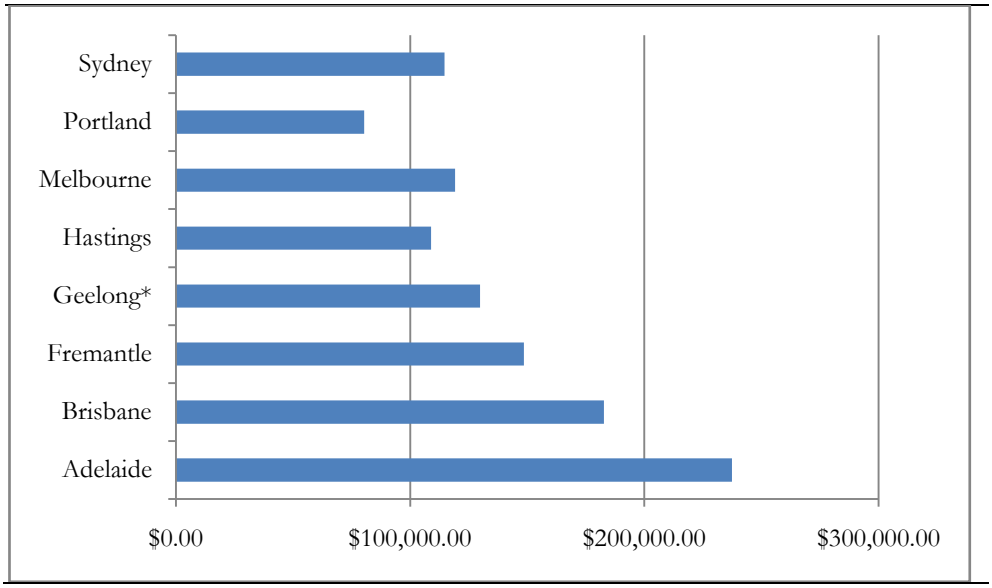


The total dollar amounts for general dry bulk vessel visit costs for each port are provided below in Table 4 in the Appendix.

4.3 Liquid bulk vessels

For liquid bulk, the Port of Portland was the cheapest followed by the Port of Hastings, the Port of Sydney, the Port of Melbourne and the Port of Geelong with a considerable cost differential opening up with the other three ports included in this section of the study.

Figure 3 **Liquid bulk vessel visit costs total**



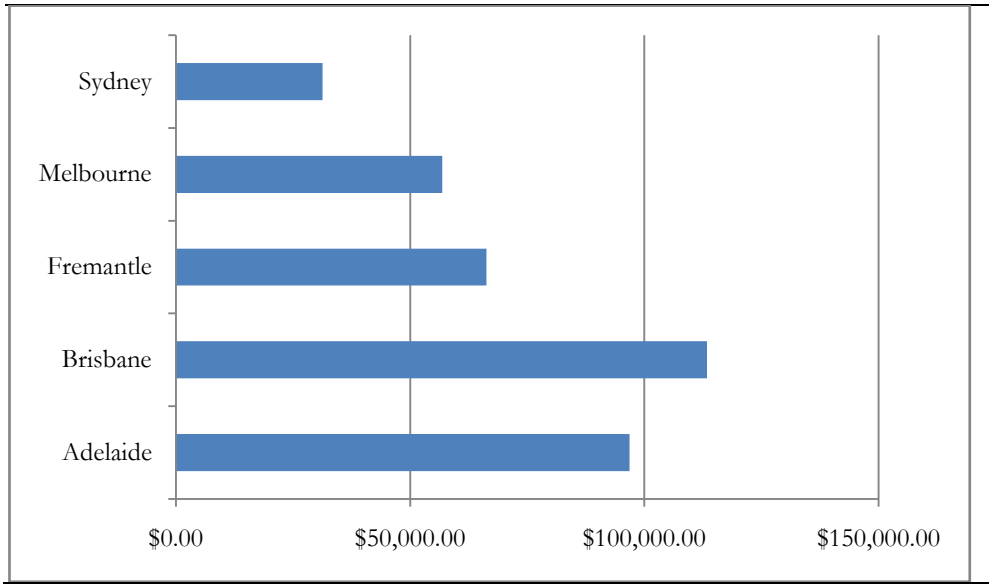
Note: For the Port of Geelong the vessel is assumed to be loaded to only 94 per cent of capacity in order to meet draught restrictions.

The total dollar amounts for liquid bulk vessel visit costs for each port are provided below in Table 5 in the Appendix.

4.4 Motor vehicle vessels

For motor vehicle vessels, the Port of Sydney is the lowest cost port followed by the Port of Melbourne and the Port of Fremantle with a considerable cost difference with the other two ports included in this section of the study.

Figure 4 **Motor vehicle visit costs total**

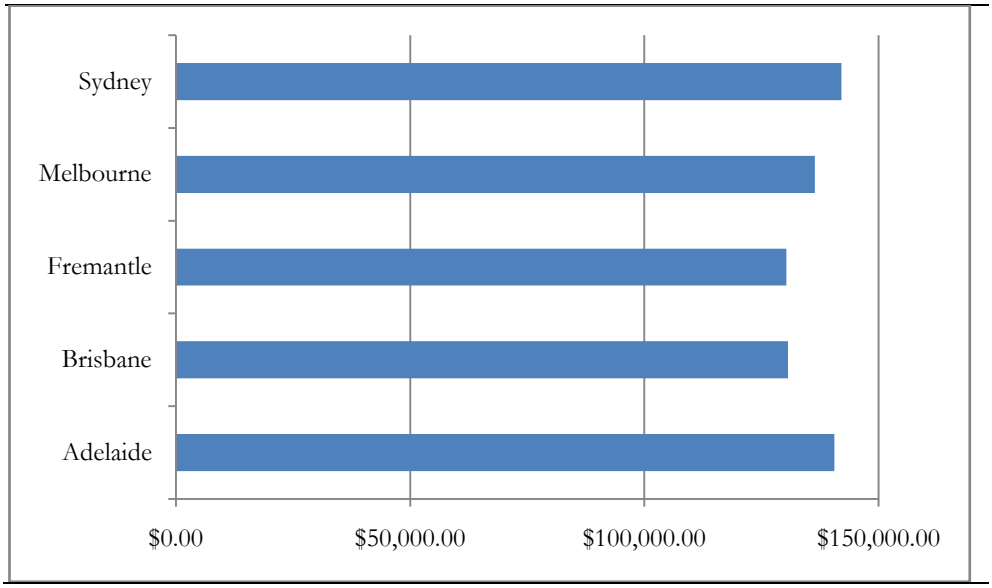


The total dollar amounts for motor vehicle vessel visit costs for each port are provided below in Table 6 in the Appendix.

4.5 Container vessels

For container vessels, the Port of Fremantle and the Port of Brisbane were the lowest cost ports closely with the three other ports included in this section of the study closely grouped together.

Figure 5 **Container vessel visit costs total**



The total dollar amounts for container vessel visit costs for each port are provided below in Table 7 in the Appendix.

5 Comparisons with previous benchmarking studies

ESCOSA (2006) has previously undertaken a benchmarking study of port charges for grain vessels which included the Port of Fremantle. The most significant difference between this study and the ESCOSA study is that the Port of Fremantle has gone from being one of the lowest cost ports for grain vessels in the ESCOSA study to the most expensive port in this study.

The previous benchmarking study by Meyrick and Associates did not include either the Port of Fremantle or the Port of Hastings. However, the price relativities between ports in the Meyrick and Associates study are generally consistent with the findings in this study for vessels for grain, liquid bulk and motor vehicles. In regard to dry bulk vessels, the price relativities between ports in this study are generally consistent with the Meyrick and Associates study with the notable exception of the Port of Sydney which has gone from being a mid-range cost port in the Meyrick and Associates study to the lowest cost port in this study. In relation to container vessels, there have been notable changes between the results recorded in the Meyrick and Associates study and this study. In the Meyrick and Associates study, Melbourne was the lowest cost port for container ships, whereas in this study Brisbane is now relatively less costly than Melbourne. In the Meyrick and Associates study, the cost differences between Sydney, Melbourne, Adelaide and Brisbane were much more pronounced whereas they are now more huddled together in terms of costs. The relatively higher costs for Melbourne are probably due to the cost recovery associated with the Channel Deepening Project in Port Phillip Bay.

A Bibliography

Bureau of Infrastructure, Transport and Regional Economics. (2008). *Waterline*. Canberra: Department of Infrastructure, Transport, Regional Development and Local Government.

Essential Services Commission of South Australia. (2006). *2006 Ports Price Monitoring Report*. Adelaide.

Meyrick and Associates. (2007). *Benchmarking of Port Prices in Australia: Final Report Prepared for Essential Services Commission of South Australia, April 2007*. Wollongong.

B Appendix

Table 3 **Grain vessels (Handymax and Panamax) visit costs total**

Port and vessel type	Cost ($)
Portland Panamax	$87,703
Portland Handymax	$75,613
Melbourne Panamax	$105,584
Melbourne Handymax	$90,543
Kembla Panamax	$86,100
Kembla Handymax	$74,100
Geelong Handymax	$99,606
Fremantle Panamax	$257,853
Fremantle Handymax	$217,861
Brisbane Panamax	$161,401
Brisbane Handymax	$137,229
Adelaide Panamax	$142,925
Adelaide Handymax	$120,372

Note: Panamax vessels cannot access the Port of Geelong fully loaded due to draught restrictions so have been excluded from the analysis. Totals have been rounded to the nearest dollar amount.

Table 4 **General dry bulk vessel visit costs total**

Port	Cost ($)
Sydney	$74,891
Portland	$83,613
Melbourne	$111,743
Hastings	$119,893
Geelong	$99,030
Fremantle	$217,861
Brisbane	$137,229
Adelaide	$163,401

Note: Totals have been rounded to the nearest dollar amount.

Table 5 **Liquid bulk vessel visit costs total**

Port	Cost ($)
Sydney	$114,709
Portland	$80,421
Melbourne	$119,130
Hastings	$108,923
Geelong*	$129,788
Fremantle	$148,521
Brisbane	$182,692
Adelaide	$237,470

Note: For the Port of Geelong the vessel is assumed to be loaded to only 94 per cent of capacity in order to meet draught restrictions. Totals have been rounded to the nearest dollar amount.

Table 6 **Motor vehicle visit costs total**

Port	Cost ($)
Sydney	$31,308
Melbourne	$56,864
Fremantle	$66,292
Brisbane	$113,355
Adelaide	$96,845

Note: Totals have been rounded to the nearest dollar amount.

Table 7 **Container vessel visit costs total**

Port	Cost ($)
Sydney	$142,066
Melbourne	$136,369
Fremantle	$130,293
Brisbane	$130,669
Adelaide	$140,593

Note: Totals have been rounded to the nearest dollar amount.