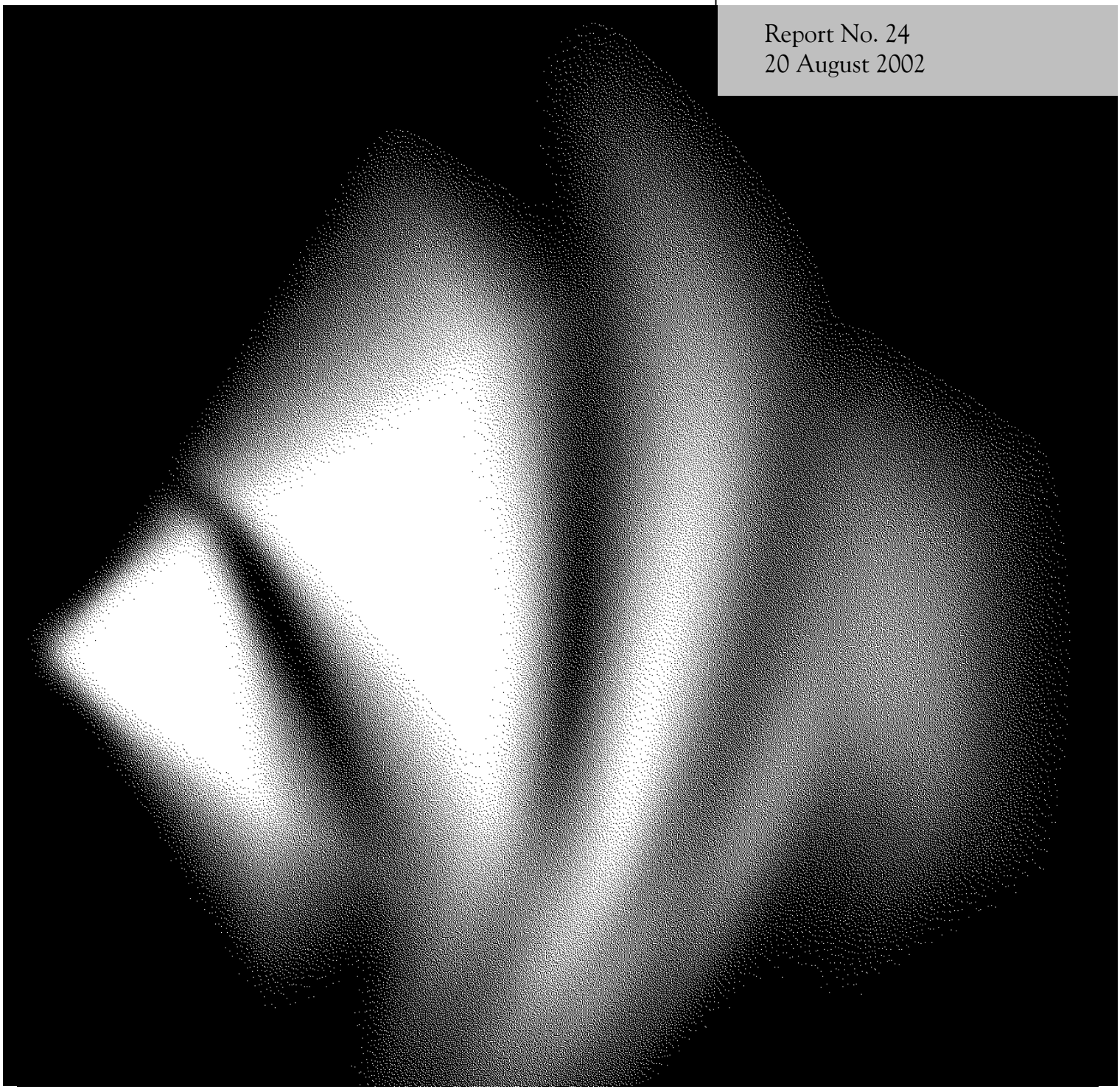
PRODUCTIVITY COMMISSION

Economic Regulation of Harbour Towage and Related Services

Inquiry Report

Report No. 24
20 August 2002



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The Productivity Commission

The Productivity Commission, an independent Commonwealth agency, is the Government's principal review and advisory body on microeconomic policy and regulation. It conducts public inquiries and research into a broad range of economic and social issues affecting the welfare of Australians.

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20 August 2002

Senator the Honourable Ian Campbell
Parliamentary Secretary to the Treasurer
Parliament House
CANBERRA ACT 2600

Dear Senator

In accordance with section 11 of the *Productivity Commission Act 1998*, I have pleasure in submitting to you the Commission's final report on *Economic Regulation of Harbour Towage and Related Services.*

Yours sincerely

A.M. Hinton
Presiding Commissioner

Terms of reference

I, IAN CAMPBELL, Parliamentary Secretary to the Treasurer, pursuant to Parts 2 and 3 of the *Productivity Commission Act 1998*, hereby refer Harbour Towage and Related Services to the Commission for inquiry and report within 6 months of receipt of this reference. The Commission is to hold hearings for the purpose of the inquiry.

Background

2. In 1991, the provision of harbour towage at the major ports of Melbourne, Sydney (Port Botany and Port Jackson), Newcastle, Brisbane, Fremantle and Adelaide was made a 'declared' service under the *Prices Surveillance Act 1983*. A company providing a declared service must notify the Australian Competition and Consumer Commission (the ACCC) of proposed price increases. Once notified of the proposed increases the ACCC can either:

- not object to those increases,
- not object to price increases lower than those proposed or
- object to the proposed increases.

3. The declaration was made to address concerns over the lack of competition in the provision of harbour towage. The declaration has been extended twice since 1991, and is due to expire on 19 September 2002. Since harbour towage services were originally declared, the port sector has undergone structural reforms, including labour market reform. The purpose of this inquiry is to examine whether declaration of harbour towage services continues to be appropriate, and to recommend alternative arrangements where justified.

4. The Government is currently considering the report of the Commission's inquiry into the *Prices Surveillance Act 1983*.

Scope of inquiry

5. The Commission is to report on:

(a) the impact of structural reforms on the provision of harbour towage and related services (eg. mooring lines), including the extent to which efficiency and productivity gains have been passed on to the users of these services;

(b) other measures that could be taken to increase the level of competition in harbour towage and related services, where desirable; and

(c) whether there is a continuing need for prices oversight of certain harbour towage services and, if so, the most effective forms of price oversight.

6. In making its recommendations, the Commission is to review the market structure in the provision of harbour towage and related services, including:

(a) the effectiveness of competition, including factors that might restrict competition;

(b) the extent to which costs structures differ between ports depending on the market structure in each port;

(c) pricing of harbour towage and related services, including structural and regulatory impediments to efficient pricing or service provision; and

(d) relevant regulations and legislation that may affect the efficient provision of harbour towage and related services.

7. The Commission should take account of any recent substantive studies relevant to the above issues.

8. In undertaking the inquiry, the Commission is to advertise nationally, consult with key interest groups and affected parties, and produce a report.

9. The Government will consider the Commission's recommendations, and its response will be announced as soon as possible after the receipt of the Commission's report.

IAN CAMPBELL
20 February 2002

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Abbreviations

AAPMA	Association of Australian Ports and Marine Authorities
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
Adsteam	Adsteam Marine Limited
AIMPE	Australian Institute of Marine and Power Engineers
AMS	Australian Maritime Services
AMSA	Australian Maritime Safety Authority
BIMCO	Baltic & International Maritime Council
BTCE	Bureau of Transport and Communications Economics
BTE	Bureau of Transport Economics
BTRE	Bureau of Transport and Regional Economics
CPI	Consumer Price Index
CRA	Charles River Associates (Asia Pacific) Pty Ltd
CSO	Community Service Obligation
DPC	Darwin Port Corporation
DPC Act	*Darwin Port Corporation Act* (NT)
DoTF	Department of Treasury and Finance (Vic)
EBIT	Earnings before interest and tax
ESC	Essential Services Commission (Vic)
FMC	Federal Maritime Commission (United States)
FPA	Fremantle Port Authority
GOC	Government Owned Corporation
GOC Act	*Government Owned Corporations Act 1993* (Qld)
GRT	Gross registered tonnage
GST	Goods and Services Tax
HoR	House of Representatives
HTS	Hunter Towage Services

IC	Industry Commission
KPI	Key performance indicator
LLDCN	Lloyd's List Daily Commercial News
MPA	Maritime and Port Authority (Singapore)
MPC	Melbourne Port Corporation
MS Act	*Marine Safety Act 1998* (Vic)
MSV	Marine Safety Victoria
NBCG	National Bulk Commodities Group
NCC	National Competition Council
NFF	National Farmers' Federation
ORG	Office of the Regulator-General (Vic)
PA Act	*Port Authorities Act 1999* (WA)
PC	Productivity Commission
PCWM Act	*Ports Corporation and Waterways Management Act 1995* (NSW)
pers. comm.	personal communication
PS Act	*Prices Surveillance Act 1983*
PSA	Prices Surveillance Authority
SAIIR	South Australian Independent Industry Regulator
SAL	Shipping Australia Limited
SAPC	South Australian Ports Corporation
SIRA	Shipping Industry Reform Authority
SOC Act	*State Owned Corporations Act 1989* (NSW)
SPC	Sydney Ports Corporation
sub.	submission
tbp	tonnes of bollard pull
TCS	Thompson Clarke Shipping Pty Ltd
TEU	Twenty-foot equivalent unit
TIRC	Towage Industry Reform Committee
TIRIC	Towage Industry Reform Implementation Committee
TP Act	*Trades Practices Act 1974*

trans.	transcript
VCA	Victorian Channels Authority
VER	Voluntary Early Retirement
WIRA	Waterfront Industry Reform Authority

Explanations

Recommendations

RECOMMENDATION

Recommendations in the body of the report are highlighted using bold italics with a heading, as this is.

Findings

FINDING

Findings in the body of the report are highlighted using italics with a heading, as this is.

Glossary

Bollard pull	A measure of a tug's pulling and pushing power, assessed in terms of the tonnes of force that a tug can exert on a stationary object (for example, the bollard to which ships are moored).
Bow/stern thruster	A device fitted either in the bow or stern of a ship to provide transverse thrust.
Bulk cargo	Cargo (such as coal, ore, sand or oil) that is carried loose or takes the shape of a bulk carrier's hold.
Bulk carrier/ship	Vessel that transports bulk cargoes. Unlike liner services, bulk carriers do not have pre-arranged schedules — they are more akin to a charter service.
Competitive tendering	The process of selecting a preferred supplier from a range of potential contractors by seeking offers (tenders) and evaluating these on the basis of one or more selection criteria.
Containerised cargo	Freight transported in containers (that is, non-bulk cargoes).
Container ship	Ship that carries containerised cargoes. Generally will be part of a liner service, with a pre-arranged schedule of port calls.
'Core' port activities	Activities carried out by a port authority such as planning, providing and allocating port infrastructure such as channels, breakwaters, navigation aids and berths.
Corporatisation	A process which aims to impose private sector commercial incentives and sanctions on public enterprises. Corporatised public enterprises are constituted as either a limited liability company or as a statutory authority under separate legislation.

Declared ports	For the purposes of this report, those ports at which harbour towage is a declared service under the *Prices Surveillance Act 1983*, namely: Melbourne, Sydney (Port Jackson and Port Botany), Newcastle, Brisbane, Fremantle (inner harbour only) and Adelaide.
Gross registered tonnage (GRT)	The total capacity of a vessel in tonnage units of 100 cubic feet.
Landbridging	The movement of cargo between sea ports by road and rail rather than sea.
Landlord port authority	An authority that limits its activities to 'core' port activities.
Linesman	Person employed to tie and untie mooring lines to secure and release vessels from berths.
Mooring line	Line used to secure a ship to its berth.
Pilotage	Navigation of a ship within ports and their approaches by a licensed pilot.
Port authority	Public agency responsible for control and management of a port and its facilities.
Salvage	The act of attending a ship at risk at sea, in a voluntary capacity, and providing appropriate assistance to preserve the environment and the economic value of the vessel and its cargo.
Ship turnaround time	Time that elapses between a ship entering port and leaving port.
Shipper	A person or enterprise having a commercial arrangement with a vessel operator for the carriage of goods. A shipper is the sender or final receiver of cargo.
Shipping line/carrier	Company which provides shipping services.
Ship visit/call	Refers to a ship/vessel calling at a port.
Stevedoring	The process of loading and unloading ships.

Terminal	Wharf and adjoining area where freight is loaded onto or unloaded from ships.
Tug job	Each time a tug is called out to provide towage services for a ship is measured as a tug job. For example, if a ship requires two tugs to berth and one to leave the port, these count as three tug jobs.
Twenty-foot equivalent unit (TEU)	A container unit based on the International Standards Organisation 20 feet by 8 feet by 8 feet container.

OVERVIEW

Key messages

- The harbour towage industry, and the port environment more generally, have undergone substantial reform over the past decade. Tug crew numbers have been reduced and service quality increased. But concerns over towage pricing remain.
- Enduring competition *within* most, if not all, Australian ports is unlikely due to low levels of demand, 'lumpy' investments and economies of scale. In the longer term, only one operator is likely to survive in any particular port.
- However, the market power of the operator in each port is constrained by the threat of entry and, on occasion, actual entry. Barriers to entry, though not insignificant, do not appear large. But they are sufficient for the incumbent operators to earn some margin above efficient costs.
- Contracting and licensing can be used by towage users and port authorities to exert even more pressure. This has occurred at many regional ports. Competitive tenders for the right to operate at multi-user ports for a fixed period likewise could be used to promote more competitive towage outcomes.
- To remove any uncertainty about their powers, port authorities should be given explicit discretion to license towage operators, subject to safeguards that protect and promote towage user interests, including:
  - user consultation processes, demonstration of net benefits of licences and transparent and 'arm's length' tender processes and licence conditions.
- The price notification system applying to Adsteam Marine Limited and its subsidiaries at certain ports has significant deficiencies. The declarations should not be renewed when they expire on 19 September 2002.
- As a transitional measure that would assist changes designed to enhance competition 'for' the market, harbour towage at currently declared ports should be subject to limited price monitoring by the ACCC for a period of three years.
- Towage users would also benefit from reforms that address cost impediments imposed by guidelines in some ports and regulatory differences across jurisdictions.
- There is no case for economic regulation of mooring or fire-fighting services.
- The provision of salvage services need not be adversely affected by efficient pricing and provision of harbour towage. The separate issue of Australia's emergency salvage capability is currently being examined in other forums.

Overview

Why is harbour towage under review?

Harbour tugs assist ships to manoeuvre in navigation channels and to enter and leave berths at ports. Thus they provide an essential intermediate service input for many of Australia's imports and exports, more than two-thirds of which (by value) are transported by sea.

In nearly all Australian ports, there is only one provider of towage services. Moreover, one company currently dominates the industry in Australia. The potential for monopolistic behaviour by towage providers is the principal reason for current price regulation of harbour towage and the main reason for this inquiry.

Background to the inquiry

In 1991, following an inquiry by the Prices Surveillance Authority, the provision of harbour towage at the ports of Melbourne, Sydney (Port Botany and Port Jackson), Newcastle, Brisbane, Fremantle and Adelaide was made a declared service under the *Prices Surveillance Act 1983* (PS Act). (A declared provider of a declared service must notify the Australian Competition and Consumer Commission (ACCC) of proposed price increases.) The declarations reflected concerns over the limited extent of competition in the provision of harbour towage services at these ports. (Other ports were not declared, in part because it was considered that single-user and/or single-commodity bulk ports had more scope to exercise countervailing power against towage operators.)

The declarations have been extended twice since 1991. The current declarations are due to expire on 19 September 2002.

Since harbour towage services were originally declared, the port sector (including harbour towage) has undergone significant structural reform, especially of work arrangements and port governance. Most government-owned ports, including all of the declared ports, were corporatised and, in some cases, privatised. Over the same period, restructuring within the harbour towage industry has led to the situation

where only one harbour towage operator — Adsteam Marine Limited and its subsidiaries (Adsteam) — services the declared ports and many non-declared ports.

The inquiry also has taken place at a time of price increases at five of the declared ports. These increases were implemented in March 2002 despite an ACCC finding that no price increases were justified.

It is against this background that the Commonwealth Government asked the Commission to report on:

- the impact of structural reforms on the provision of harbour towage and related services;
- any other measures that could be taken to increase the level of competition in the provision of these services; and
- whether there is a continuing need for any form of prices oversight of harbour towage (in particular, whether harbour towage at major Australian ports should continue to be a declared service under the PS Act).

Harbour towage in Australia

Harbour towage services are provided at 51 Australian ports (figure 1). One hundred and twenty harbour tugs are based at 45 of these; the remaining six ports are serviced by tugs from ports nearby. While nine ports have only one tug, almost half the ports in Australia — mainly regional ports servicing bulk carriers — have two. Larger ports have from three to eight tugs.

In 2000-01, there were around 25 000 commercial ship visits to Australian ports, of which over 19 000 required towage services (table 1). Total annual harbour towage revenue was estimated at around $200 million (a little over 0.1 per cent of the value of goods shipped). The small size of the towage industry is attributable to the 'thinness' of shipping activity in Australian ports — Australia's total container volume is less than one-fifth of that in the Port of Singapore. Even Australia's busiest bulk ports — Dampier, Newcastle and Hay Point — have a relatively modest number of ship visits. In the major container ports, towage charges represent between 2 and 6 per cent of total port-related charges (including stevedoring but excluding road charges). The proportion tends to be higher for bulk cargoes because typically stevedoring charges are lower and bulk carriers generally use more tugs.

The seven declared ports account for 45 per cent of all tug jobs. (If a ship requires two tugs to berth, this counts as two tug jobs.) Dampier, which mainly services Woodside Energy and Hammersley Iron and where towage services are not declared, is Australia's busiest port in terms of tug jobs per year (table 1).

Figure 1 **Australian ports requiring towage, 2000-01**

Tug fleet and total ship visits

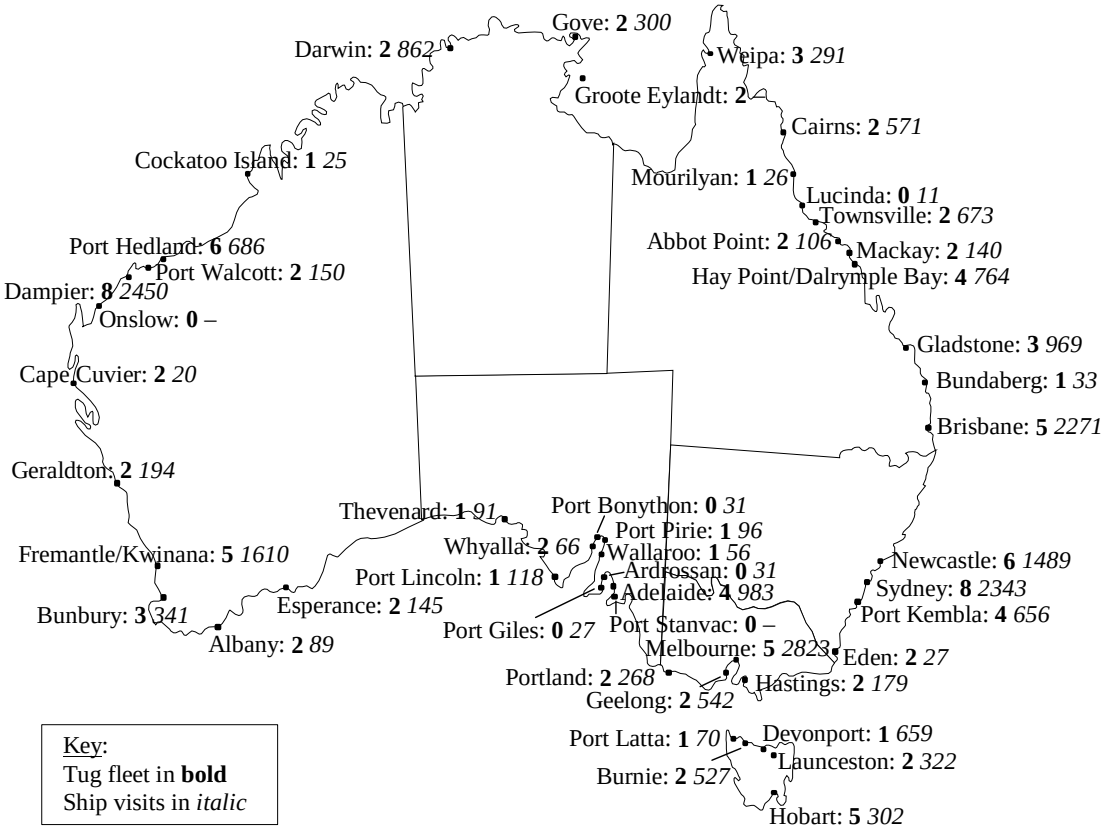


Table 1 **Australia's 10-largest ports by ship visits and tug jobs, 2000-01**

Port	*Ship visits*	*Ships requiring towage*	*Tug jobs*
Brisbane	2 271	1 918	5 869
Dampier	2 450	1 900	8 300
Melbourne	2 823	1 785	4 250
Newcastle	1 489	1 230	6 978
Port Botany	1 207	1 173	3 931
Fremantle	956	879	2 645
Gladstone	969	859	3 412
Port Jackson	1 136	823	2 717
Hay Point/Dalrymple Bay	764	764	3 000
Adelaide	983	699	2 384
All other	10 274	7 223	20 876
Declared ports total	**10 864**	**8 507**	**28 774**
Australian total	**25 322**	**19 253**	**64 362**

Harbour towage services at individual ports typically are provided by a single operator — indeed, towage in many Australian ports is now provided by the same operator, Adsteam. Adsteam operates in 37 ports, including all of the declared ports,

and accounts for around two-thirds of Australia's fleet of harbour tugs. Its dominance is the culmination of significant industry consolidation over the last two decades, through the demise of family-run operations in the 1980s and Adsteam's purchase of Howard Smith's towage operations in 2001.

North Western Shipping & Towage provides towage in Tasmania as well as at the privatised Port of Portland. MacKenzies has provided towage in Esperance for many years and Riverwijs provides towage under contract at the Port of Bunbury and at Dampier. Australian Maritime Services commenced operations in Melbourne in May 2002, in competition with Adsteam. Several privately-owned, single-user ports or terminals provide their own towage in Western Australia and Queensland.

Industry performance

Labour and capital productivity have improved as a result of changes in work practices over the past decade. Reforms targeted at the towage industry in the early 1990s — partially funded by the Commonwealth Government — reduced crew numbers significantly and changed work practices (table 2). More recently, three-man crews have been introduced on many tugs.

Table 2 **Indicative tug manning levels**

	All ports		*Declared ports*	
	1980s	*Late 1990s*	*1996-97*	*2002*
Average number of crews per tug	3.0	2.4	2.7	2.9
Number of employees per crew	6.0	4.0	4.0	3.1
Total employees per tug	18.0	9.6	10.9	8.8

In addition, improvements in ship technology, more powerful tugs and, at some ports, reductions in tug use, have led to a reduction in the average number of tugs used per ship visit at major container ports. However, this will translate into significant reductions in towage costs only if it allows fewer tugs to be stationed at the port.

Prices and quality of service

As shown in table 3, nominal charges per tug job (exclusive of any rebates) have increased at some ports (for example, by 54 per cent at Sydney, 37 per cent at Melbourne and 18 per cent at Adelaide), but have remained the same or even declined at others. Over the same period, prices more generally, as measured by the underlying Consumer Price Index, have risen by 59 per cent.

Table 3 **List charges for a 20 000 GRT ship[a]**

Port	*1988*	*1995*	*2002[b]*	*1988–2002*
	$ per tug job	*$ per tug job*	*$ per tug job*	% change
Sydney	1 551	1 766	2 389	54
Melbourne	2 470	2 500	3 373	37
Brisbane	2 600	2 820	2 702	4
Adelaide	2 939	3 310	3 459	18
Fremantle	1 960	3 520	2 285	17
Port Kembla	1 688	2 354	2 196	30
Bunbury	3 350	2 722	2 038 / 3 135[c]	-39 / -6

a Nominal. **b** GST excluded. **c** $2038 for outward movements and $3135 for inward movements. **GRT** Gross registered tonnage.

Importantly, changes in charges per tug do not necessarily reflect changes in the towage charge per unit of cargo. For example, at the Port of Melbourne where charges per tug job (excluding GST) have increased by 35 per cent since 1995, increased ship size, higher ship load factors, and reduced average towage requirements per ship visit, have contributed to significant falls in average towage charges per container (table 4).

Table 4 **Towage charges per TEU exchanged, major Australian container ports[a]**

	$ per TEU exchanged		*% total port costs*	
Port	*1994*	*2001*	*1994*	*2001*
Brisbane	30.41	15.47	7.3	4.4
Sydney	14.28	8.31	3.8	2.4
Melbourne	10.76	6.56	2.8	2.1
Adelaide	39.68	21.29	9.7	6.0
Fremantle	32.11	8.67	8.2	2.7

a Nominal. **TEU** Twenty-foot equivalent unit; that is, a standard container measuring 20 feet by 8 feet by 8 feet.

For cargoes that continue to be carried on smaller ships, or on ships where the towage requirement has not fallen, charges per unit of cargo may have increased. This may be the case for bulk cargoes but, unfortunately, time series data for towage costs per tonne of bulk cargoes are not available.

Most towage users agree that service quality is good and has improved markedly over the 1990s. At many ports, tugs now are available on 2-hours notice, 24 hours a day, seven days a week. The reliability and timeliness of towage services are crucial to shipping lines and shippers because they lose revenue if a ship is delayed in port.

Do harbour towage operators have market power?

Though towage users have benefited from improved service levels and from lower towage charges per container, it does not necessarily follow that towage companies do not have market power. Their market power may have prevented even lower prices (in line with costs) being delivered.

Is harbour towage a natural monopoly?

There is consensus that low demand levels, combined with 'lumpy' investments (due to minimum tug fleets needed to offer appropriate service levels) and economies of scale in towage operations, mean that most, if not all, Australian ports can *efficiently* support only one provider of towage services at a time (box 1).

Box 1 **Views on natural monopoly**

… (Sydney and Melbourne) may be able to sustain direct competition by two or more towage service operators with most ports only able to sustain one towage service operator for optimal service outcomes. In some of the regional and remote ports it may be problematical for the demand to sustain a full time commercial presence with the assets only being required for a limited period on an irregular basis. (National Bulk Commodities Group, sub. 11, p. 6)

… towage markets may not be natural monopolies … in the larger container ports. (Adsteam, sub. DR43, p. 7)

The factors, which have driven rationalisation of towage services, are market size. Taking into account the capital cost of a tug and its fixed operating costs, harbour towage is a natural monopoly where there are less than 8000 tug movements per annum. (Dale Cole & Associates Pty Ltd, sub. 9, p. 9)

We contend that individual ports in Australia are too small in terms of vessel movements to sustainably allow a second operator. This situation is likely to continue [to] be made more difficult through further technological developments on vessels which will result in fewer tugs required per vessel, balanced of course, by natural growth in trade. (Australian Association of Ports and Marine Authorities, sub. DR44, p. 7)

While average daily utilisation of tugs has increased moderately at the declared ports over the past ten years (table 5), there is considerable scope for increased utilisation of existing fleets if demand increased. Indeed, over the same period, tug jobs per tug per day at non-declared ports have fallen.

There is some suggestion that economies of scale for a (minimum) tug fleet (and one operator) could be exhausted at around 8000 tug jobs per year. This need not imply, however, that two operators would be efficient at this scale of operation — returns to scale may not decrease until much higher volumes are reached. The Port

of Singapore, with 84 000 tug jobs per year, has issued six licences, equivalent to 14 000 tug jobs per licence.

Table 5 **Average tug jobs per tug per day**

	1991	*1995*	*2001*
Declared ports	2.3	2.3	2.6
Non-declared ports	1.4	1.4	1.1
All ports	**1.9**	**1.9**	**1.5**

Nevertheless, in future, a few Australian ports (Melbourne, Sydney and possibly Brisbane) may be able to accommodate more than one provider. Dampier currently has two operators, each serving one of the two terminal owners, Woodside Energy and Hammersley Iron. Yet at the Port of Newcastle, which has around 7000 tug jobs per year, a period of head-to-head competition in the 1990s culminated in the incumbent buying out the entrant.

Perhaps the strongest evidence of the natural monopoly characteristics of harbour towage is that even in large ports where entry is open, only one operator seems to have been able to survive. (This currently is being tested in the Port of Melbourne.) Thus, on the basis of current and foreseeable towage technology and demand levels, towage services at most, if not all, Australian ports appear to be *local* natural monopolies.

The extent to which economies of scale extend beyond individual ports is less clear. In some regions, there may be efficiencies in coordinating tugs across several ports (particularly where there are different seasonal demands, as in some northern Queensland ports), and where ports with low levels of demand are close to each other, as in northern Tasmania and South Australia. Scope for redeployment of tugs across a range of Australian ports may result in some cost savings, but given the distances and delays involved, such savings are unlikely to be so large that it is efficient for only one operator to service all ports in Australia. Although there may be some benefits from shipping lines dealing with only one towage provider in all Australian ports, these savings also would not appear to be very large.

However, there do appear to be some administrative and managerial economies in towage operators providing services across several ports. This suggests that large specialist towage operators are likely to emerge which operate in several national and even foreign ports. There is some evidence of this — in addition to Adsteam which is now a multinational towage provider, a number of specialist providers with operations in New Zealand, Asia and Europe have emerged as potential providers of towage in Australian ports.

Can towage operators earn monopoly profits?

The existence of a natural monopoly in towage at individual ports need not mean that the incumbent has market power. A towage provider's potential market power will depend on barriers to entry to harbour towage at the port and the sensitivity of demand for towage more generally at that port. Actual entry and also the threat of entry constrain market power.

Barriers to entry

Barriers to entry reflect the size of any cost disadvantage of new entrants, relative to the incumbent. A major potential incumbency advantage arises when an entrant has to incur some costs that cannot be recouped in the event of failure — that is, sunk costs.

In harbour towage, an important factor limiting sunk costs is that tugs are relatively mobile assets that can be used in other ports or even put to other uses. Thus, while an entrant must incur the costs of transporting tugs to (and in the event of failure, from) a port, a significant proportion of capital outlays can be recouped on resale. For example, one international broker lists for sale as many as 500 second-hand tugs of various ages and technical characteristics. Tugs also can be leased. Though Australian ports may require some modification of tugs, any changes appear to be relatively minor. Barriers to entry also appear to be limited because the technology and skills required to run a tug operation are readily transferable among operators, and the costs of training also are not very high.

Some participants have suggested that volume rebates offered by Adsteam across Australian ports to shipping lines may impose an entry barrier. However, these rebates (which, according to Adsteam, on average, reduce charges at some ports below list prices by between 1.5 per cent and 5 per cent) may reflect actual cost savings. In addition, as several potential entrants also offer towage services at other ports in Australia or internationally, there is scope for them also to offer volume rebates.

Though a range of views has been expressed on this issue (box 2), it is the Commission's assessment based on the available evidence that barriers to entry, though not insignificant, are not large.

Moreover, that entry is feasible is supported by the recent entry at the Port of Melbourne of a new towage operator, Australian Maritime Services. Hunter Towage Service's entry into the Newcastle market also provides evidence of the scope for entry when prices or service levels of the incumbent get too far out of line.

That said, these are the only instances of head-to-head competition in the past decade or so. Takeovers have provided another avenue of entry.

Box 2 **Views on barriers to entry**

… barriers to entry are, while not insignificant, not large. We are facing … competition in Melbourne right now and an announcement by that competitor that they intend to move on Sydney and Brisbane … (Adsteam, trans., p. 151)

There would be significant barriers to entry for an alternative service provider, but indications are that these may not be insurmountable. (Melbourne Port Corporation, sub. 7, p. 4)

Entry and exit of operators from the Australian Towage Industry has been quite common over the last decade or more … The overall picture of ownership … has been one of much coming and going of operators and of ownership but limited head to head competition. (Australian Institute of Marine and Power Engineers, sub. 14, pp. 5–6)

There are significant costs in transporting tugs to Australia to compete with an incumbent operator and for resale or redelivery such tugs would either need to be transported back to ports distant from Australia or would be discounted if sold in Australian ports … In addition, contestability is weakened where the incumbent does have a degree of market power by having such a large share of the Australian towage market … (Shipping Australia Limited, sub. DR34, p. 2)

Barriers to entry into the towage industry are high and arise from economies of scale and vertical integration, capital and sunk costs and low utilisation of minimum capital in the industry. Towage operators are largely insulated from potential competition because entry into the market is limited by the size of the market and the capital requirement for large tugs. (ACCC 1995, p. 46)

Demand for towage services

Regardless of the level of competition faced by Adsteam or any incumbent, market power will also depend on the sensitivity of the (derived) demand for towage services at a port. If demand for towage is highly sensitive to price, then any attempt by a towage operator to exploit its apparent monopoly position will lead to lower sales and profits.

The elasticity of demand for towage at a port, in turn, is a function of the elasticity of demand for the final goods being transported, the scope for shippers and shipping lines to substitute between ports, the elasticity of supply of other input providers in the supply chain, the scope for shipping lines to alter the amount of towage services they consume, and the share of towage costs in total costs of shipping and the final good. Though the Commission has not been able to undertake a comprehensive assessment of all of these factors in the time available, the following observations can be made:

- Harbour towage is a very small share of total port and wharf-handling costs. Of itself, this suggests a low demand elasticity for towage. However, the elasticity

of demand for towage at particular ports also will depend on the extent of substitution possibilities available to users, including their ability to reduce tug use and to switch between ports.

- In many export markets, Australian producers are price takers. This means that any increase in towage costs must come at the expense of others in the supply chain (including commodity producers), not from consumers of the final goods. This will tend to increase the elasticity of demand for towage. How much can be squeezed from other producers in the chain will depend on their respective elasticities of supply.
- There is evidence of some competition between major container ports. For example, there is scope for landbridging freight to and from ports with better shipping frequencies and other services and/or lower overall prices. Lower unit-value bulk cargoes tend to go to the nearest port, though proximate regional ports appear to compete with each other.
- While the towage requirement for a ship when it enters a port typically is determined by guidelines developed by the pilots and harbour master and any special factors on the day (eg weather, tides, ship mechanical problems etc), shipping lines may be able to reduce the level of towage to some extent in the medium to longer term through innovation in ship technology.

Overall, though there is some scope for shipping lines and shippers to reduce towage costs in the longer term, demand for towage at most ports is unlikely to be highly sensitive to price. This means that actual entry or the potential for a contest for the provision of towage services at a port is likely to provide the main *market* constraint on market power of an incumbent operator.

Are there regulatory impediments to entry?

There are few explicit regulatory barriers to the provision of towage services by new entrants. Towage providers at all ports are required to meet certain safety requirements. Some government-owned port authorities have issued exclusive licences to towage providers and some privately-owned ports and terminals control access via contract.

Indirect barriers to entry may result from port guidelines or regulations which stipulate higher tug requirements for ships than may be necessary to achieve appropriate service and safety levels. Such requirements could increase the minimum tug fleet or tug size required at that port, or require port-specific modifications to tugs. Different minimum crew qualifications across jurisdictions

also may hinder movements of crews across ports. These requirements in turn could increase costs of entry.

What price margin can a towage operator earn?

The extent to which an incumbent towage provider could earn a price margin above efficient costs (that is, the costs of the most efficient alternative provider, including a normal rate of return) will broadly reflect the extent of barriers to entry. Higher prices may be reflected in excess profits or cost inefficiencies, or some mix of the two.

Adsteam claims that significant falls in towage charges per container handled at declared ports over the 1990s (at the same time as service quality improved), demonstrate that it is pricing efficiently. However, the relevant comparison is between towage prices and efficient unit costs.

The Commission has not endeavoured to undertake a full assessment of the efficiency of Adsteam's costs and prices (or costs and prices of any other towage provider). First, a detailed 'audit' of the company's operations is not the function of this inquiry. Second, the Commission does not have access to all the relevant data. And third, it would in any case be difficult to make such an assessment with any accuracy. Not only are data likely to be incomplete, but there are difficult conceptual problems in determining efficient costs and appropriate rates of return. Nevertheless, there are some other indicators of pricing efficiency including:

- *Rates of return earned in Adsteam's towage operations*. Based on its assessments of various price notification proposals, the ACCC has concluded that, historically, rates of return in the provision of towage services exceed returns in similar activities with similar risk levels.
- *The results of competitive tenders.* Tenders for towage at three ports (Bunbury and Gladstone (exclusive licences) and Fremantle (non-exclusive licence)) have resulted in price reductions of between 5 and 15 per cent (without any reported reduction in service levels). Some care must be taken in making such comparisons. For example, actual prices charged by the incumbent may have been lower than published prices, the incumbent's prices may have fallen in future anyway or, indeed, the successful bidder's prices may have erred on the low side. Nevertheless, these price reductions are at least suggestive of the presence of barriers to entry to some degree and some capacity to charge above efficient costs at these ports. At the Port of Fremantle the margin may be under-estimated (the Commission understands that lower prices were offered for an exclusive licence).

Price margins also are likely to vary across ports because of variations in demand levels relative to entry costs. The strength of competition between some ports and countervailing power exerted by users (especially at regional ports with only a few major users where users directly contract with or can threaten to contract with another towage provider) may also limit or eradicate any price margins at some ports.

Price margins of the magnitude indicated by competitive tendering seem consistent with the assessment that barriers to entry, while not insignificant, are not large. Certainly these margins do not appear consistent with unconstrained monopoly pricing.

Moreover, variations in towage prices across ports appear to reflect differences in average costs (driven largely by differences in demand), suggesting that even if the incumbent provider were charging prices somewhat higher than efficient levels, they are not pricing according to the capacity of users to pay (that is, the pricing that would be consistent with unconstrained monopoly pricing, potentially yielding very large profits).

To the extent that there is a 'monopoly' margin in Adsteam's (or any other incumbent's) prices, it is not clear that only the service provider is benefiting. For example, though labour productivity improved substantially over the 1990s, there is concern about the need to reform further employment conditions in the towage sector. Some participants have suggested that two-man tugs may be feasible in some Australian ports. In other words, while an incumbent's costs may be above efficient levels, any excess profits may be dissipated. Though this would increase any efficiency losses due to market power, it also could make an incumbent vulnerable to competition.

Can better outcomes be achieved?

Lower prices for harbour towage could be achieved by addressing external industry-wide cost impediments. For example, subject to maintaining appropriate levels of safety, prescriptive port guidelines or regulations that stipulate tug use and/or tug size or type, could be modified to promote provision of required levels of service at minimum cost.

Lower, more efficient prices could also be achieved by reducing or eliminating price margins attributable to market power.

Given the technology of harbour towage and trends in the demand for towage, currently there appears to be little scope for generating lasting competition *within*

most Australian ports. Nonetheless, the ever-present *threat* of entry by way of takeover or direct competition regulates to some degree the pricing behaviour of an incumbent provider at those declared and non-declared ports that operate without any explicit contractual or licensing arrangements. In effect, the threat of entry will tend to constrain prices to a level that is not so high that it will entice entry.

If this margin were exceeded persistently (for example, because an incumbent allowed its costs to rise above the levels of a potential competitor), the incumbent would become vulnerable to competition from a new entrant. Thus, even without actual entry, over time, an incumbent will face pressure to keep costs and prices in check. However, given barriers to entry, scope for prices somewhat above their efficient level remains. The question is whether there are cost-effective ways of achieving even better price outcomes.

In circumstances of market contestability not generating efficient prices or quality, there are a further two main options — periodic competitive tendering *for* the market or price regulation.

Competitive tenders, contracts and licences

Competitive tendering is simply a means of choosing a supplier and is used in a wide range of industries for a variety of services. It is a more formal and controlled process than occasional market entry (via head-to-head competition between a new entrant and the incumbent or by takeover of the incumbent), whereby those conducting the tender select the winning supplier according to specified criteria.

Tenders and direct contracting by towage users

Competitive tendering can help users search for a supplier who provides appropriate quality for the lowest-possible price. The process is not costless however and, to be warranted, these costs need to be less than the potential benefits.

Many regional ports are owned by, or service, single users. At most of these ports, harbour towage services are provided by either the port operator-cum-owner (eg Hammersley Iron at its Dampier terminal), or are contracted out to a specialist provider (eg Comalco's contract with Adsteam at Weipa, Woodside Energy's with Riverwijs at Dampier). (At those remaining single-user/commodity ports where the towage market is 'open', several do not have a permanent tug fleet — they use tugs from nearby ports.) Privately-owned ports servicing multiple users (Geelong, Portland) also have entered into contracts with towage providers.

These arrangements demonstrate that, although economies of scale mean that towage at these ports will be provided most efficiently by a single operator, users can choose between different ways of obtaining towage (contracting out, self-provision or some mix of the two) and between different specialist operators. The availability of alternatives (including a growing number of international providers who have been expressing interest in operating in Australia) gives users the leverage to promote more efficient towage pricing and quality. The fact that numerous regional ports (with a permanent tug fleet) do not rely solely on the threat of entry to regulate towage suggests that they regard the outcomes from self-provision or periodic contracting to be superior — that is, the benefits of contracting or self-provision would seem to outweigh the costs of implementing these options.

This raises a question as to why tenders and contractual arrangements (subject to meeting port authority safety and other requirements) are not being pursued at multi-user ports, especially the larger container ports at which towage services are currently declared. It may reflect the likely requirement for users to obtain authorisation under the *Trade Practices Act 1974* for a buying group, or high costs of coordinating the numerous users of towage at those ports (in addition to the cost of conducting tenders and monitoring contracts), relative to the benefits. Users also may have relied on the price notification system to restrain towage prices.

Tenders and licensing by port authorities

It is feasible that where users cannot efficiently contract directly with towage operators (eg because of problems coordinating many users), port authorities could act on their behalf. While towage companies would still supply services to shipping lines or shippers directly, the port authority, via licence conditions, could influence the terms (including the price and level of service offered to users) under which a towage provider is allowed to operate in the port.

Several State government-owned regional ports servicing multiple users have entered into arrangements with towage providers that stipulate service levels as well as prices. Examples include the ports of Albany, Bunbury, Bundaberg, Geraldton, Gladstone and Townsville (exclusive licences) and Cairns, Fremantle and Mackay (non-exclusive licences). Several others have suggested that they would pursue similar arrangements if, like some ports in Queensland and Western Australia, they were given explicit permission to do so by the relevant authorities.

In principle, competitive tendering and the licensing of harbour towage providers by a port authority could bring about a result similar to user-negotiated contracts, *provided* port authorities act in the interests of towage users. This is a crucial requirement.

If a port authority faces the correct incentives to deliver the appropriate quality of port services at the lowest cost to users, a competitive tender for a licence could help bring about efficient towage prices and service quality. As with any commercial decision to contract out, an assessment would need to be made of the costs (including the risks) of conducting the tender and writing and monitoring a contract, relative to the benefits. If these conditions were met, then a port authority letting a towage contract would be little different from Woodside Energy contracting out towage to Riverwijs at Dampier.

Over the 1990s, significant reform of port authorities accompanied reforms on the waterfront and in harbour towage. Most port authorities have been corporatised, and their commercial focus and accountability to users (including shippers) have improved. Nonetheless, port authorities often face legislative requirements that may not accord with user interests. For example, it has been suggested that a profit-maximising port authority would have an incentive to appropriate some of the cost savings arising from competitive tenders by way of excessive licence fees or other charges imposed on the successful bidder. In other words, some or all of the potential savings could accrue inappropriately to the port authority rather than towage users. Moreover, scope for government intervention in port authority decision-making, which may not correspond to user needs, generally remains.

Exclusive licences

While many submissions (especially from towage users) endorse the view that exclusive licences issued by port authorities could be used to promote efficient towage outcomes, some participants have reservations (box 3). A necessary (but not sufficient) condition for the benefits to outweigh the costs is that one towage operator in a port will be able to provide an appropriate service at less cost than two.

If this condition is met, a competitive tender for an exclusive licence is merely an alternative means of allocating the towage 'market' to a single provider at the port — and a means by which users potentially can have a greater influence on the choice of supplier. It is an alternative to allocation by virtue of incumbency, by a limited period of head-to-head competition (a price 'war') or by way of a takeover. The question then is whether competitive tendering for an exclusive licence can produce better outcomes than the status quo.

A potential advantage of a competitive tender is that the resource costs of a price war are avoided. For this reason, a competitive tender can extract prices closer to current (and foreseeable) efficient costs — *how* close will depend largely on the extent of competition between bidders and the rigour of the tender process. The

main potential advantage of a contract or licence for a set period is the certainty it provides — which, in particular, allows for specific investments to be recouped.

Box 3 **Views for and against exclusive licences**

Intuitively, the term 'exclusive' sounds bad: it seems 'anti-competitive' or 'monopolistic' by creating an absolute barrier to entry … For this conclusion to be correct, however, the argument relies on the assumptions of perfect competition and, further, in the absence of the licence that perfect, or near perfect competition would prevail in the market – ***this is not the case for the provision of towage services***. (Association of Australian Ports and Marine Authorities, sub. 4, p. 24)

The granting of an exclusive contract for a set period with price and performance conditions that are acceptable to users and the supplier would provide the incentive for the introduction of effective competition in ports. (National Bulk Commodities Group, sub. 11, p. 8)

… there is a strong case for regulating this industry, preferably by issuing exclusive licences for tug operations to the lowest cost, highest quality tenderer. (NFF, sub. 10, p. 7)

Ultimately, Adsteam does not believe that exclusive licences will increase the efficiency of any aspect of towage services in Australian ports over and above what can already be achieved, at less cost, through open-market competition. Indeed, it believes that the detriment of this form of regulation could be very significant, especially when the economic costs of licensing are fully assessed. (Adsteam, sub. DR43, p. 3)

It is likely that exclusive licensing does expand entry into the harbour towage market increasing competitive pressures and lowering prices. However, what is at issue is precisely whether the expansion of entry facilitated by exclusive licensing is efficient in the sense that it durably lowers the total price of the bundle of services users purchase. There are good reasons to doubt that it is in fact efficient. (Adsteam, sub. DR43, report 3, p. 12)

With non-exclusive licences, on the other hand, potential new service providers, after being granted a non-exclusive licence, will still face the prospect of having to engage in head-to-head competition with the licensed incumbent.

Potential costs of tenders and licences

Costs will be incurred in conducting a tender and monitoring adherence to licence conditions. Adsteam suggested that these costs would be so high that they almost inevitably would outweigh any potential efficiency benefits derived from prices that more closely reflected the costs of providing towage. However, this assessment ignores the likelihood of dissipation of 'monopoly' rents when towage markets are 'open' to new entry. Any form of competition for a market involves costs. In the Commission's view, case-by-case, port-by-port assessment will be required.

Adsteam has also argued that competitive tenders may allow users and/or ports to expropriate cost-saving investments it (as the incumbent service provider) has made, especially investments (redundancy payments) to reduce crews and labour

costs. However, the benefits of such investments that initially may raise Adsteam's costs could still be appropriated by a new entrant. As far as the Commission is aware, in those ports where Adsteam operates without a contract or exclusive licence, it has no guarantee that towage users will not seek out other providers. (In these circumstances, it is unlikely that Adsteam would undertake investments other than those from which it expects to benefit more than its rivals.) Indeed, a towage provider may be more willing to undertake sunk investments if a contract or licence were in place.

On the other hand, an exclusive licence (as with any contract) also means that the benefits of cost reductions achieved during the licence term but not foreseeable at the time of the contracting process, may not be passed on to users. (Conversely, users could be cushioned from the impact of unforeseeable cost increases.) Thus, the length of the contract requires careful consideration, balancing the benefits of commitment and certainty against the temporary removal of the further discipline imposed by the threat of entry. Given that the provision of towage does not seem to require very large port-specific investments, the contract or licence period should not be too long. For example, at the Port of Bunbury, the exclusive licence runs for five years, with scope for another two years if key performance indicators are met by Riverwijs.

Adsteam also has claimed that competitive tendering for licences at ports would adversely affect the provision of salvage capability. However, efficient provision and pricing of harbour towage (whether this is promoted though direct competition, competitive tenders or price regulation) need not affect the provision of salvage. Indeed, to the extent that there are economies of scope in the provision of harbour towage and salvage capability, a firm exploiting these economies should be in a stronger position to win a competitive tender for harbour towage in a port or group of ports. The separate issue of Australia's emergency salvage capability is currently being examined in other forums.

Price regulation

It is conceivable that price regulation could promote efficient towage prices. However, the view prevailing among many participants — which is also the view of the Commission — is that the system of price notification that has applied to harbour towage services has substantial deficiencies and is unlikely to have had much effect on pricing of declared towage providers. While there was broad agreement on this point (albeit with different reasoning), views differed about the appropriate coverage, form and duration of any *future* prices oversight (box 4).

Box 4 **Views on prices oversight**

PSA [Prices Surveillance Act] declaration and PSA monitoring involve high regulatory costs. An [enquiry] … of those who have been subject to PSA monitoring which involves not just prices, but costs and profits, will find that is an unbelievably intrusive piece of regulation. We would support the view that any regulation ought to be light-handed. (Adsteam, trans., p. 166)

The process of declaration must be strengthened to ensure that harbour towage and related service providers seek approval from the Australian Competition and Consumer Commission (ACCC) in order to vary prices. (The Sea Freight Council of Western Australia, sub. 8, p. 1)

… SAL [Shipping Australia Limited] would urge that … monitoring be on the same basis as that which applies to the major stevedores in Australia i.e. monitoring of costs, prices and profits in order to give interested parties the most complete picture possible of what is occurring … We strongly urge the Commission to extend monitoring to all major ports in Australia, both declared and non-declared at the present time. SAL would also recommend that there be on-going monitoring of the selected ports if no competitive tendering is introduced in those ports and that it not be limited to a 3-year period. (Shipping Australia Limited, sub. DR34, p. 2)

… while there is only one major operator providing services in the majority of ports nationally, and until such time that competitive tendering has been successfully introduced, the ACCC should continue to be involved in prices oversight and price control regulation. (Fremantle Port Authority, sub. DR35, p. 1)

… we support some cost-effective form of price monitoring of towage prices in all ports where there is no exclusive licence or other acceptable form of market-testing or market-monitoring which is acceptable to towage users … If the process of prices declaration is to continue, then it is essential that a far wider range of ports be declared rather than only the container ports…(Association of Australian Ports & Marine Authorities, trans., pp. 54–5)

The ACCC considers there is a need for effective regulation of price setting of harbour towage in major ports. (ACCC, sub. DR38, p. 1)

In principle, it may be possible to devise a system of price regulation that addresses the shortcomings of price notification. However, several recent Productivity Commission reports have highlighted the limitations and risks of strict price controls, not the least of which is the scope for regulatory error. The overriding conclusion has been that price controls should be used only where the problem to be addressed generates substantial inefficiencies. In the Commission's assessment, harbour towage does not appear to meet this test. Even if Adsteam's prices are above efficient levels, the margin would not appear to be large.

Price monitoring, which may require firms to provide price, cost, profit and other data to the regulator but which does not control prices directly, attempts to influence prices through information provision, public and regulatory scrutiny, and moral suasion. As such, it is likely to be more appropriate where the degree of market power is considered moderate and/or as a transitional measure.

The Commission's assessment

The constant threat of entry and, on occasion, actual entry, imposes some discipline on towage prices and costs at declared and non-declared ports. This competitive discipline could be increased somewhat by addressing State and port-specific requirements that may indirectly increase entry costs. Addressing these also could reduce the incumbent's costs.

Many privately-owned and/or single-user ports have chosen to use their bargaining position to enter into exclusive contracts with towage providers, suggesting that such arrangements, if properly implemented, have the potential to deliver efficient outcomes.

Users at declared or non-declared multiple-user ports, in principle, could likewise cooperate and enter into a contract with a towage provider at a port, subject to ACCC requirements. If towage users are dissatisfied with towage services and/or the price of those services, the Commission would encourage them to explore the possibility of collective negotiation as one option to address these problems.

Competitive tendering for exclusive licences at multiple-user ports offers another means of selecting the towage provider at a port and one which, in principle, could promote efficient prices and quality. Several previous inquiries into harbour towage in Australia and in New Zealand have reached a similar conclusion.

There are several important caveats, however. Some of these apply to any commercial decision to conduct a competitive tender and/or to enter into a long-term contract. Others — which are of greater public policy relevance — relate to using the port authority as an agent for towage users.

A major concern is the ability and incentive of the port authority to act in the interests of users. Substantial reforms of port authorities over the 1990s have made it more likely that ports, in pursuing commercial objectives, will promote user interests, but such a coincidence of interests is not guaranteed.

Consequently, the Commission stresses that it does not consider that exclusive licensing by port authorities in practice will always deliver superior outcomes to non-exclusive licences or, indeed, other options including no licences. Costs and benefits of the various options need to be assessed in each case. In particular, in addition to the need for proper consideration of commercial risks, the risks of a port authority overriding user interests, mismanaging the tender process, or using licences to extract rents for itself, should be minimised by applying a range of safeguards.

In short, competitive tenders for exclusive licences should neither be prescribed nor proscribed by relevant jurisdictions. But they are an option, along with non-exclusive licences, which ports should have the discretion to implement (or threaten to implement) *provided* appropriate procedures and guidelines are in place that ensure that they are implemented only when the benefits outweigh the costs.

Shipping lines and shippers (which in this inquiry generally have favoured port authorities being given licensing powers for towage) have an important role to play in ensuring that a port authority acts in their interest. Clear and appropriate port governance arrangements and objectives would assist in this regard. User consultation mechanisms and tendering processes that are public, transparent and competitive should be in place.

The price notification system that currently applies to part of the towage sector has substantial deficiencies and is unlikely to have had much effect on pricing of declared towage providers. In any case, a degree of pricing discipline is imposed on incumbent towage operators by the threat of entry and there is scope for towage users and ports to exercise choice through competitively-awarded contracts or licences (or a credible threat of using such arrangements). Even if their assessment is that the costs of pursuing such arrangements would outweigh the benefits, this does not mean there is a case for price regulation. If users or port authorities cannot see net benefits in attempting to bring about lower towage prices by exploiting the availability of alternative providers of towage, it is even less likely that there will be any scope for price regulation to deliver net benefits.

The Commission therefore considers that continued price control at the declared ports is not warranted. Declaration of harbour towage services for price notification purposes should not be renewed at any port when current declarations expire in September 2002.

Limited price monitoring by the ACCC of harbour towage services could, however, assist users and ports during a period of transition — say, three years — away from government price regulation towards an environment in which they take a more active role in selection of harbour towage providers.

The objective of this monitoring would be to impose some degree of public accountability on incumbent towage providers as to their charging practices. For this reason, only list price data should be monitored and reported.

While some towage users sought wider application of monitoring to ports not currently declared, the Commission has received little evidence that charging at non-declared ports (many of which have contractual or licensing arrangements in place) is excessive or that the benefits of a wider information-gathering exercise

would outweigh the costs. Given the absence of a compelling case to expand the scope of regulation, the Commission is of the view that such monitoring should be limited to those ports where towage services are currently declared.

Recommendations and findings

Recommendations

RECOMMENDATION 1

Subject to maintaining appropriate levels of safety, prescriptive regulations that stipulate tug use and/or tug size or type, should be modified to promote provision of required levels of service at minimum cost.

Relevant jurisdictions should also promote harmonisation or, where appropriate, introduction of a system of mutual recognition of minimum crew qualifications and standards, to minimise impediments to the movement of crews and tugs across Australian ports in different jurisdictions.

RECOMMENDATION 2

Where port authorities currently do not have explicit discretion to license towage operators (on an exclusive or non-exclusive basis), the relevant jurisdiction should grant them that discretion.

The granting of such discretion should be accompanied by safeguards to ensure that a port authority, if and when exercising its discretion to license towage providers:

- ***does not use the tender process to appropriate savings in the provision of harbour towage for itself (over and above the additional administrative costs incurred by the port authority);***
- ***demonstrates the net benefits of proposed licensing arrangements;***
- ***formally consults with towage users in a transparent manner prior to changing existing arrangements and about the conditions attached to any licences; and***
- ***implements 'arm's length', transparent competitive-tendering processes.***

RECOMMENDATION 3

Declaration of harbour towage services at the ports of Melbourne, Sydney (Port Botany and Port Jackson), Newcastle, Brisbane, Fremantle and Adelaide under

s. 21 of the Prices Surveillance Act 1983 should not be renewed when the current declarations expire on 19 September 2002.

RECOMMENDATION 4

Harbour towage charges at ports where declarations currently apply should, as a transitional measure, be subject to limited monitoring by the ACCC for a three-year period. Price data should be published annually.

Findings

This section draws together all findings contained in this report. Findings are listed under the relevant chapter.

Chapter 6 Market power in harbour towage and related services

FINDING 6.1

Most if not all Australian ports can efficiently support only one towage service provider in the longer term. There are cost advantages for a single common operator across some regional groupings of ports. However, natural monopoly characteristics do not extend to one operator providing towage at all ports in Australia or even at all of the major container ports.

FINDING 6.2

Barriers to entry into the towage market include the costs of transporting tugs, losses on resale of tugs, development of a customer base, training of crews and redundancy payments on exit. Available evidence suggests that these barriers, while not insignificant, are not large. There is a pool of alternative towage operators able to enter the Australian market.

FINDING 6.3

While towage users have some longer-term options in responding to price increases, overall demand for towage at a particular port is not very responsive to price changes in the short to medium term.

FINDING 6.4

Countervailing power of towage users has the potential to limit or even eliminate the market power of individual towage providers. At ports with a small number of users, their negotiating power should be sufficient to temper significantly the market power of towage providers. At ports where there are a larger number of

users, the cost and complexity of organising them to negotiate as a group will limit their countervailing power. In these situations, shipping industry organisations or port authorities could provide a lower-cost and more effective forum for organising towage users.

FINDING 6.5

Available evidence indicates that towage prices in some Australian ports have been above efficient levels but the margins have not been large.

FINDING 6.6

Entry barriers to the provision of mooring-line services generally are negligible. However, in some ports, State industrial awards and/or port requirements significantly add to costs and may create barriers to entry by restricting the opportunities for innovation by new entrants.

FINDING 6.7

Harbour towage operators generally have little market power in the provision of non-emergency salvage services, as reflected in the ready availability of competing salvage providers, including from international sources. Market power of proximate salvors would be greater in emergency salvage situations but payment in these cases is determined by international convention.

Chapter 7 Options for economic regulation of harbour towage

FINDING 7.1

There are substantial deficiencies in the price notification arrangements applying to harbour towage services as a means of reducing any sustained price margin above efficient costs.

- *Notification does not allow for ongoing assessment of the efficiency of harbour towage prices.*
- *The regulator faces difficulties in determining whether proposed prices are 'efficient'.*

FINDING 7.2

There are tensions in the application of best practice principles to the administration of the price notification system, such as between transparency and timeliness.

FINDING 7.3

Costs arise for both the regulated entity and the regulator in relation to the current price notification system for harbour towage under the Prices Surveillance Act 1983. These costs have not been insignificant and would seem to have exceeded the benefits.

FINDING 7.4

Price notification under the Prices Surveillance Act 1983 (which currently applies to towage service providers at declared ports), is an inappropriate instrument to address potential misuse of market power in the provision of harbour towage services.

FINDING 7.5

The costs and limitations of price control regulation are likely to outweigh significantly the benefits of using it to address potential misuse of the limited market power held by towage providers at some ports.

FINDING 7.6

Price monitoring, if undertaken through clearly specified and focussed indicators, may have a role during a period of transition from a system of prices surveillance.

Chapter 8 Options for increasing competition in the provision of harbour towage

FINDING 8.1

There appears to be little scope for sustainable long-term competition for towage services within most, if not all, Australian ports (that is, competition 'within' the market).

FINDING 8.2

While there is a need for further regulatory reform in the towage market, such reforms are unlikely to generate ongoing competition in the provision of towage within Australian ports.

FINDING 8.3

Competitive tendering for the right to provide towage services in a port offers an alternative and potentially more effective mechanism for promoting competition

'for' the towage market in a port, resulting in more efficient pricing and service outcomes.

FINDING 8.4

In certain circumstances, exclusive licences for the provision of towage services have the potential to generate greater benefits for towage users than non-exclusive licences.

FINDING 8.5

In some States, specific regulation and uncertainty over the powers of port authorities may be inhibiting consideration of the full range of options for promoting competition 'for' the market in towage services.

FINDING 8.6

Port reform has resulted in more commercially-focussed port authorities. In some cases, however, unclear or conflicting objectives and scope for government intervention may distort port authority incentives to act in the interests of port users. Competition between ports, although limited, provides some pressure on ports to operate in the interests of towage users.

FINDING 8.7

A close alignment of interests between the port authority and towage users is required to ensure that a competitive tender conducted by a port authority for an exclusive towage licence results in an efficient outcome.

FINDING 8.8

Port authorities conducting tenders for towage licences will incur transaction costs as will bidding firms. Alternative mechanisms for selecting a towage provider to service a port (such as new entry and head-to-head competition or mergers and takeovers) also will incur transaction costs.

FINDING 8.9

The provision of salvage services need not be adversely affected by the efficient pricing and provision of harbour towage services.

1 Introduction

This chapter provides some background to the inquiry and outlines how the Commission has approached its task.

1.1 Background

Harbour towage is a comparatively small but important service provided at ports. Revenue from towage operations Australia-wide was estimated to be in the order of $200 million in 2001. Towage is an essential intermediate service input for many of Australia's imports and exports, more than two-thirds of which (by value) are transported by sea. The quality of towage services is crucial to shipping lines and shippers as costs arise from delays in ports. It is estimated that towage costs for containerised cargoes in 2001 accounted for between 10 and 20 per cent of port charges (excluding stevedoring) per container, but only about 2 per cent of total port and port interface costs.

Generally speaking, a reduction in the price of towage (consistent with the costs of providing the service at a desired quality) that is reflected in the price of final goods, will increase Australia's international trade, bringing benefits to Australian consumers of imports and producers of exports. Price reductions also will reduce the costs of transporting domestic cargoes by sea.

Evidence suggests that because of the 'lumpy' capital requirement for the provision of adequate towage services at any port (combined with the comparatively low level of shipping calls and therefore low demand for towage at Australian ports), efficiency may be served by having only a single towage operator in most, if not all, Australian ports. Such economies of scale could give an incumbent operator some degree of market power. This is the principal argument underpinning current price regulation of harbour towage.

In 1991, following a review by the Prices Surveillance Authority (PSA 1990), the provision of harbour towage at the ports of Melbourne, Sydney (Port Botany and Port Jackson), Newcastle, Brisbane, Fremantle and Adelaide was made a declared service under the *Prices Surveillance Act 1983* (PS Act). (A declared company providing a declared service must notify the Australian Competition and Consumer Commission (ACCC) of proposed price increases.) The PSA recommended

declaration of only the larger container ports because it considered that they met the twin criteria for declaration, namely an absence of effective competition and 'pervasiveness' (that is, the impact of the price of towage at these ports on the wider economy was of significance) (PSA 1990, p. 55). It also considered that single user and/or single commodity bulk ports had more scope to exercise countervailing power against towage operators.

The declaration applying to the seven ports has been extended twice since 1991. The current declaration is due to expire on 19 September 2002.

Since harbour towage services were originally declared, the port sector (including towage) has undergone significant structural reform, including reform of work arrangements. In addition, restructuring within the harbour towage industry has led to greater industry concentration and a situation where only one harbour towage operator (Adsteam Marine Limited and its subsidiaries (Adsteam)) services most major Australian ports. In light of these developments, the Commission was asked to examine whether declaration of harbour towage services continued to be justified, and to recommend alternative arrangements where appropriate.

The inquiry also took place against the background of price increases at five ports serviced by Adsteam. Adsteam formally notified the ACCC of its proposed price increases in January 2002. On the basis of submissions by users and its analysis of the costs of providing harbour towage services, the ACCC concluded that Adsteam was not justified in raising prices at any of the ports subject to the notification. However, on 6 March 2002 Adsteam implemented the price increases.

1.2 Scope of the inquiry

The Commonwealth Government asked the Commission to report within six months on:[1]

- the impact of structural reforms on the provision of harbour towage and related services;
- any other measures that could be taken to increase the level of competition in the provision of these services; and
- whether there is a continuing need for any form of prices oversight of harbour towage (in particular, whether harbour towage at major Australian ports should continue to be a 'declared' service under the PS Act). (Terms of reference, para. 5)

1 The terms of reference are reprinted in full at the beginning of this report.

Hence, a key focus of the inquiry was the provision of harbour towage services and providers that have been declared under the PS Act; that is, towage services provided at the ports of Melbourne, Sydney (Port Botany and Port Jackson), Newcastle, Brisbane, Fremantle and Adelaide.

Several participants commented that they considered the Commission should make recommendations also on towage services at non-declared ports (prices of harbour towage at other ports are regulated by State and Territory authorities or are not regulated). While every port is different, and the Commission has not been able to assess the provision of towage services at every port in detail, there are generic issues relevant to all ports or various types of port which the Commission has attempted to identify and to analyse. Thus many of the findings and recommendations in this report are of relevance to towage services at both declared and non-declared ports.

The performance of non-declared ports and the regulatory and structural arrangements that influence them also have been relevant in assessing the performance of declared ports and formulating desirable reforms. Regulation and provision of towage services at selected overseas ports also has been examined.

The Commission also was asked to examine the provision of services related to harbour towage (such as mooring lines, fire-fighting and salvage which may be provided by towage operators), including measures that could be taken to increase the level of competition in these services.

While this inquiry occurred against the background of price increases by Adsteam, the Commission has not addressed directly the question of whether these price increases were justified. Any such specific determinations are the domain of the regulator. Nonetheless, evidence on prices, costs and profitability of harbour towage operators has been one element in ascertaining the degree of market power and therefore the need to continue any form of prices oversight or to implement other measures.

1.3 The Commission's approach

The Commission's approach to this inquiry took into account the terms of reference and the general policy guidelines in the *Productivity Commission Act 1998*. Although this inquiry is not a legislative review under the requirements of the

Competition Principles Agreement (CPA),[2] the principles embodied in this agreement, and the principles for good regulation that flow from that agreement, are relevant.

Specifically, the Commission's approach has been to:

- outline and analyse the market and the institutional and regulatory environment in which harbour towage is provided;
- describe and assess the performance of harbour towage over time;
- analyse the economics of providing harbour towage, including the likely extent of market power of harbour towage providers and the effects of them exercising such power;
- assess the performance of current price regulation;
- identify and evaluate options for promoting more competitive outcomes in harbour towage and reforms that could facilitate successful implementation of such options; and
- determine whether there is a need for continued price regulation and, if so, the preferred form and extent of that regulation, in the light of scope for the introduction of reforms promoting more competitive outcomes, and the costs and benefits of price regulation itself.

1.4 Conduct of the inquiry

The terms of reference for this inquiry were received on 20 February 2002. The inquiry was to be completed within six months — that is, by 20 August 2002.

As required by the terms of reference, and in line with normal Commission inquiry procedures, the Commission encouraged and sought maximum public participation. Soon after receipt of the terms of reference, advertisements were placed in the national press and a circular was sent to a range of individuals and organisations thought likely to have an interest in the inquiry. An issues paper was released in early March 2002 to assist participants in preparing their initial submissions.

The Commission held informal discussions with organisations, companies and individuals to seek information and canvass a wide range of views. Twenty-seven submissions were received in response to the issues paper. A position paper was released on 6 June 2002. Interested parties had an opportunity to respond to matters

[2] In 1995, the CPA was signed by the Commonwealth, States and Territories as part of the National Competition Policy reform package. The CPA, in essence, sets out the principles to be followed by governments in relation to the agreed competition policy reforms.

raised in the position paper by way of written submissions and at public hearings (which were advertised in the national press) held in Brisbane, Sydney and Melbourne in July. Nineteen submissions were received in response to the position paper and 12 participants appeared at public hearings. All non-confidential parts of submissions and transcripts of public hearings were made available on the Internet, at Commission and State libraries, and from Photobition Digital Imaging Centre.

The Commission thanks participants for their participation in meetings with the Commissioner and Commission staff, their participation in public hearings and for their submissions in response to both the issues paper and position paper.

Mr Tony Hinton was the Presiding Commissioner for this inquiry.

1.5 Report structure

The structure and performance of the harbour towage industry in Australia are described in chapter 2. In chapter 3, major reforms of the harbour towage industry, and the waterfront more generally, are discussed, while details of current regulations affecting the delivery of, and demand for, harbour towage services are provided in chapter 4. Governance of ports is discussed in chapter 5. Market power in harbour towage is analysed in chapter 6. In chapter 7, the performance of price notification arrangements for harbour towage and alternative prices oversight mechanisms are assessed. Chapter 8 assesses alternative reform options including competitive tenders and licensing by port authorities and regulatory reform. The Commission's recommendations are presented in chapter 9.

There are six appendixes. Appendix A lists interested parties visited during the inquiry and those who appeared at public hearings and also provides a complete list of submissions. Issues relating to efficient pricing of harbour towage are discussed in appendix B. International arrangements for harbour towage are outlined in appendix C; further details of governance of Australian port authorities are provided in appendix D. Appendix E provides elaboration of issues relating to competitive tendering and exclusive licensing by port authorities. The links between competitive tenders, licences and provision of salvage services are explored in appendix F.

2 Harbour towage and its market

This chapter provides an overview of the Australian harbour towage industry. Its structure, costs and demand are examined. The industry's operational performance and prices are also discussed. The chapter provides information on both declared and non-declared ports.[1]

2.1 The Australian harbour towage industry

The size and limited manoeuvrability of ocean-going ships and restricted clearances in channels and berth areas mean that towage plays a necessary and important role in Australian ports. Tug boats assist ships on arrival and departure and also protect other vessels and port facilities from damage.

Harbour tugs in port areas:

- manoeuvre ships through navigation channels and turn them in swinging basins prior to berthing or sailing;
- assist ships on and off berths, including movement between berths; and
- free grounded ships, thereby clearing blocked channels.

Apart from the size and number of ships requiring assistance, the physical characteristics of each port largely determine its harbour towage requirements. Weather conditions, ship design, port authority regulations, pilotage guidelines and the needs of shipping lines also influence towage requirements.

Industry size

Harbour towage services are provided at 51 Australian ports. Tugs are based at 45 of these; the remainder receive towage services from neighbouring ports. In 2000-01, there were around 25 000 commercial ship visits to Australian ports, of

1 The term 'declared ports' is used to describe those ports where harbour towage is a declared service under the *Prices Surveillance Act 1983*.

which over 19 000 required towage services (AAPMA 2002; Adsteam, sub. 15, appendix A).[2]

Total annual harbour towage revenue is estimated at around $200 million[3] — a little over 0.1 per cent of the value of goods shipped. The seven declared ports account for nearly half the towage market by volume. In the major container ports, towage charges typically represent between 2 and 6 per cent of total port-related charges, excluding road charges (BTRE 2002, pp. 11–12).

The small size of the industry is attributable to the 'thinness' of shipping activity in Australian ports. For example, Australia's total container throughput is less than one-fifth of the Port of Singapore's throughput. Even the more moderately-sized Port of Los Angeles handles more containers than all Australian ports combined. Australia's busiest port, Melbourne, ranks fortieth in the world in terms of container throughput (Containerisation International 1999). Australia's largest bulk ports by throughput — Dampier, Newcastle and Hay Point — have relatively small numbers of ship visits. The small volume of trade through Australian ports has significant ramifications for the towage industry.

However, the small size of the harbour towage industry belies its importance. The towage industry forms part of an interdependent chain of port activity. Although towage charges may represent a small proportion of total port and related charges, 'substandard towage services can easily lead to extended ship delays or damage to property far in excess of the direct cost of the towage service itself' (Adsteam, sub. 15, p. 6).

Market structure

The direct participants in the harbour towage industry are shippers, shipping lines, agents, port authorities, pilots, towage operators, tug crews and unions. In addition, State governments, national and State regulators, marine safety authorities and others are involved in the industry. They affect the operation of the towage industry in a variety of ways and to varying degrees.

There are some ownership links between these participants. In particular, a towage operator may be involved in shipping agency services, moorage, lines launches, port

2 Includes multiple counting of ships visiting more than one port.

3 There are no official estimates. Based on Adsteam data, total towage revenue is estimated to be between $174 million and $275 million (see Adsteam, sub. DR43, p. 11). In 1995, total revenue was estimated at $158 million (ACCC 1995, p. 26).

authority operations and pilotage. There may also be vertical integration between participants and other aspects of the waterfront, such as stevedoring.

Providers of towage services

Harbour towage services at individual ports generally are provided by a single operator. Further, towage in most Australian ports is provided by Australia's largest towage service provider, Adsteam Marine Limited (Adsteam) or its fully-owned subsidiaries. Adsteam, which provides towage in 37 ports (including all of the declared ports), operates 66 per cent of Australia's harbour tugs. Table 2.1 lists the providers of harbour towage in Australia.

Table 2.1 **Providers of harbour towage, 2002**

Port	*Towage provider*
New South Wales, all ports	Adsteam
Queensland, all ports	Adsteam
Except:	
Weipa	Adsteam (Comalco owns tugs)
Abbot Point	MIM and Adsteam jointly
Hay Point	BHP/Teekay Shipping
Dalrymple Bay	Dalrymple Marine Services
Victoria	
Melbourne	Adsteam and Australian Maritime Services[a]
Hastings, Geelong	Adsteam
Portland	North West Shipping & Towage
South Australia, all ports	Adsteam and Stannard/Adsteam
Western Australia	
Albany, Fremantle, Geraldton, Cockatoo Island	Adsteam
Bunbury	Riverwijs
Esperance	McKenzies Tug Service
Port Hedland	BHP/Teekay Shipping
Cape Cuvier	Hammersley Iron
Port Walcott	Robe River
Dampier/Hammersley	Hammersley Iron
Dampier/Woodside and public wharf	Riverwijs
Tasmania, all ports	North West Shipping & Towage
Northern Territory	
Darwin	Stannard/Adsteam
Gove	Nabalco (Adsteam owns tugs)
Groote Eylandt	Gemco

a Australian Maritime Services entered the Melbourne market in May 2002.

Sources: AAPMA (sub. 4); Adsteam (sub. 15, appendix A; sub. DR43, appendix B); SAL (sub. 6, attachment B).

Australia's harbour towage industry has consolidated significantly over the last two decades. Originally consisting of many family-run operations in each port, by 1988 three companies (Howard Smith, Adelaide Steamship and Brambles) accounted for 80 per cent of the towage fleet and market.[4] Moreover, over half the harbour tugs in Australian ports were controlled by joint ventures involving these companies (BTCE 1988, p. 23). This situation continued into the 1990s. By 1995 the three companies provided towage services in 41 ports, 23 of which were joint ventures (ACCC 1995, p. 36).

Further consolidation then followed, with Howard Smith and Adsteam buying out the interest of their Melbourne partner, McIlwraith McEacharn, and acquiring Brambles' mainland fleet. P&O's Western Australian towage interests and BHP's Newcastle venture were sold to Adsteam/Howard Smith joint-venture companies. This period of consolidation culminated in Adsteam's purchase of Howard Smith's towage operations in 2001, leaving Adsteam as the dominant provider of harbour towage in Australia.

North West Shipping & Towage, previously owned by Brambles, remains the sole provider of towage in Tasmania. Other smaller towage operators continue in some ports. For example, McKenzies has provided towage in Esperance for many years. Some privately-owned, single-user ports provide their own towage (such as Hammersley Iron at its Dampier terminal).

More recently, two new towage operators have appeared in Australia. Riverwijs, a joint venture between Riverside Marine and Wijsmuller, successfully bid for the Bunbury towage licence in 1999. It also provides towage services for Woodside Energy at its Dampier terminal. In May 2002, a new operator, Australian Maritime Services (AMS), commenced operating in Melbourne, using two tugs leased from Hong Kong.

Towage operators decide the power, propulsion systems and most of the basic specifications of tugs. However, in some ports a towage contract or service agreement with the port authority may specify technical requirements, service levels and charges (Adsteam, sub. 15, pp. 15–16). Negotiations with unions and employees over crew sizes, wages and conditions are handled by towage operators (sometimes with an independent arbitrator).

4 The three companies had interests in 80 per cent of the fleet (a half share or more in the operating companies, but not necessarily tug ownership) and assisted 81 per cent of ships requiring towage services (see BTCE 1988, p. 23).

Users of towage services

Shipping companies are the direct users of harbour towage services. Towage operators charge ship operators directly for their services and, in most cases, payment for towage services flows from shipping lines or their agents to the towage provider — even in those ports where towage is booked through the harbour master.

Towage costs ultimately are borne by shippers. However, shippers usually have little direct interaction with towage providers — the exception being user-owned or single-user ports, where shippers provide towage themselves or contract out.

Port authorities are responsible for the development of ports, the control of shipping movements and the safe manoeuvring of ships within ports. Given the importance of harbour towage to port safety and its ability to provide fire-fighting and other services, port authorities also are users — as well as coordinators and regulators — of towage services.

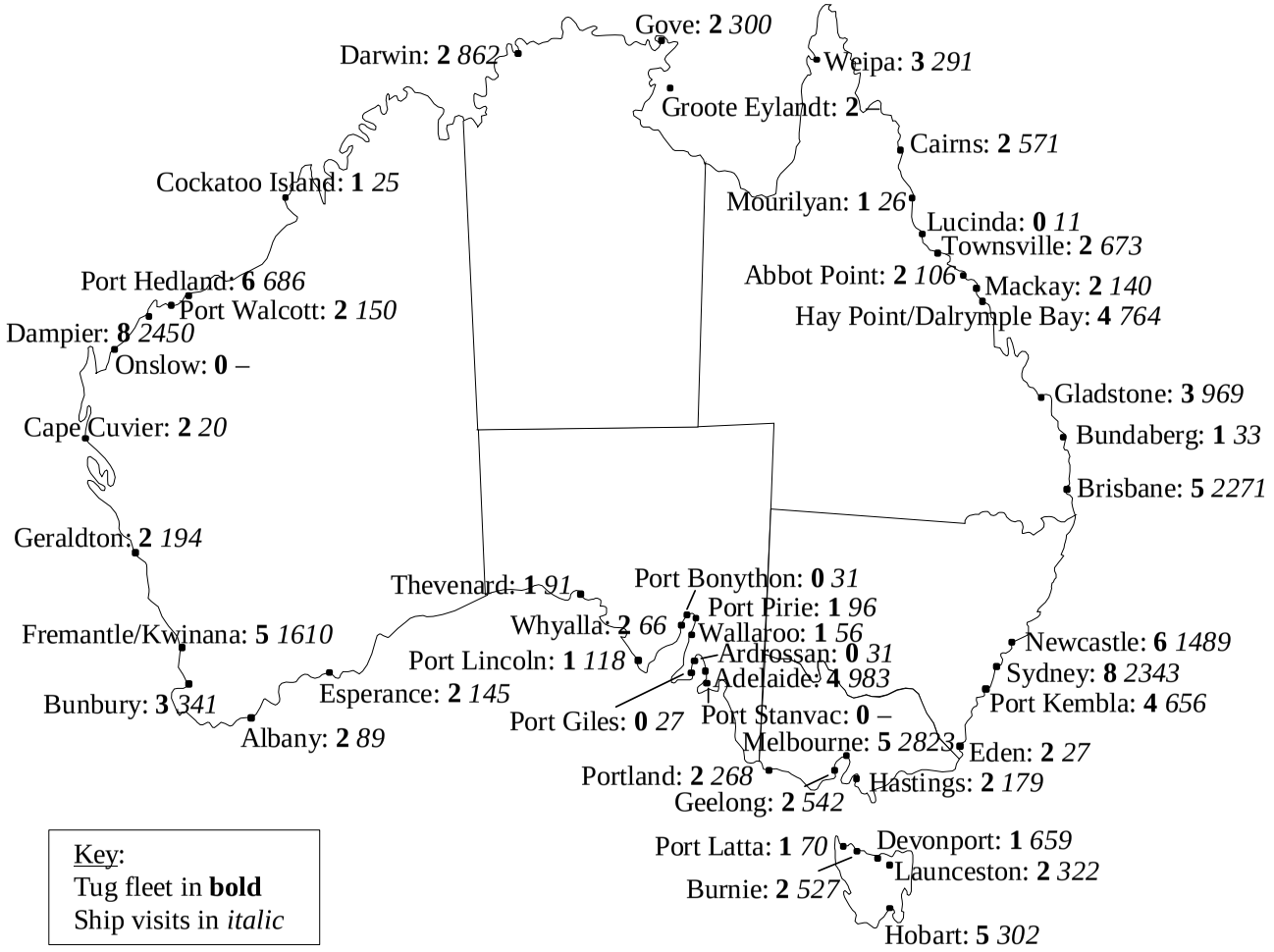
Towage in Australian ports

Figure 2.1 depicts for each of the 51 Australian ports, the tug fleet and number of ship visits in 2000-01.

There is a large variety of towage arrangements and requirements across Australian ports. For example, nearly all ships calling in Port Botany use towage services, compared with only 62 per cent of ships calling in Melbourne (Adsteam, sub. 15, report 2, p. 9). Some ships, such as large tankers, require four tugs for safe berthing — others may require none. The largest ports receive over 2000 commercial ships each year while others service fewer than 20. Tidal ports may have multiple ships waiting to enter on the same tide. Some ports are single-user bulk ports while others predominantly serve container trade. A number of ports in South Australia, where ship visits are relatively infrequent, have no resident tug boats, and receive towage services from Port Adelaide.

Figure 2.1 **Australian ports requiring harbour towage, 2000-01**

Tug fleet and total ship visits



Data sources: AAPMA (2002; sub. 4); Adsteam (sub. 15, appendix A).

There are 120 harbour tugs operating in Australia (including relief tugs but excluding at least five tugs that are 'laid up' awaiting redeployment), slightly more than in 1988 (table 2.2). In addition, there is a variety of other tugs operating in a number of ports. These smaller 'workboats' undertake a range of activities — such as serving off-shore oil rigs from Dampier or towing small barges in Fremantle and Brisbane — and are not considered 'harbour tugs'. Therefore, they operate in a different market from that which is the subject of this inquiry.

Table 2.2 **Tugs in operation at major Australian ports[a]**

Port	*1988*	*1994*	*2002*
Dampier	6	8	8
Sydney (Port Jackson and Port Botany)	10	8	8
Melbourne	6	6	7[b]
Newcastle	4	8	6
Port Hedland	6	6	6
Brisbane	6	6	5
Fremantle[c]	6	5	5
Hobart	6	6	5
Adelaide	4	4	4
Hay Point/Dalrymple Bay	4	4	4
Port Kembla	4	4	4
Gladstone	4	4	3
Weipa	3	3	3
Other	*47*	*50*	*52*
Total	**116**	**122**	**120**
Declared ports[d]	**34**	**35**	**33**

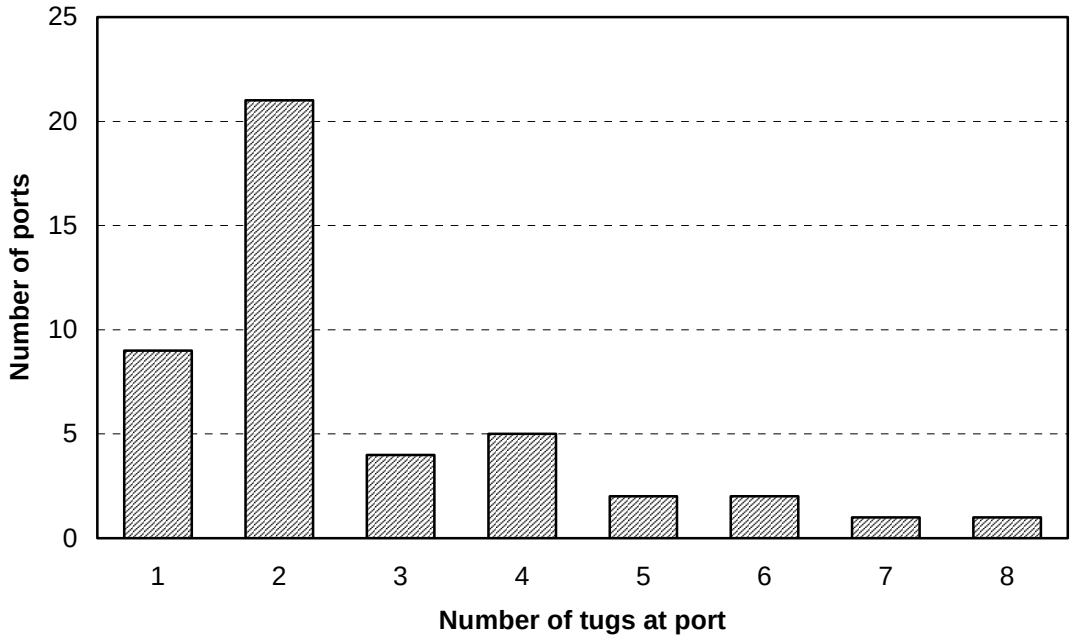
[a] Including relief tugs. [b] Including two new tugs (not declared). [c] Including the outer harbour of Kwinana (not declared). [d] Includes non-declared towage providers in those ports; excludes Kwinana.

Sources: ACCC (1995); Adsteam (sub. 15, appendix A; pers. comm., 20 May 2002); BTCE (1988, appendix 1); SAL (sub. 6, attachment B).

More tugs (eight) are stationed in the Port of Dampier than any other single Australian port. This is largely because terminals belonging to Woodside Energy and Hammersley Iron employ separate towage services. Following the recent entry of AMS, seven tugs operate in Melbourne (previously five). Sydney's eight tugs are divided between two ports: Port Botany and Port Jackson. Other capital city ports have four or five tugs. Most regional ports employ only two tugs (figure 2.2). By comparison, more than 85 tugs operate in Singapore, around 35 in Rotterdam and 15 in Boston (Adsteam, sub. 15, report 3).

Relief tugs — which are not operational or permanently manned — are used to replace normal tugs when they are out of service for maintenance or undertaking salvage operations. Generally, one relief tug will service a number of ports in a geographic area, such as New South Wales.

Figure 2.2 **Distribution of Australian harbour towage fleet by number of tugs at ports[a]**



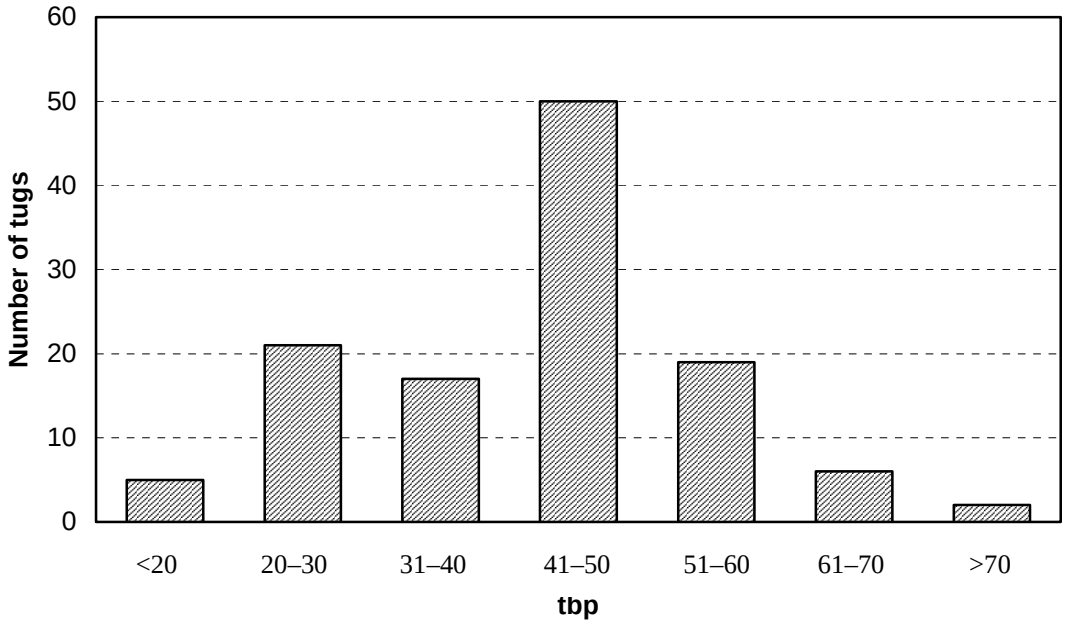
a Port Jackson, Port Botany, Fremantle and Kwinana are treated as separate ports; Hay Point and Dalrymple Bay are treated as a single port.

Data sources: Adsteam (sub. 15, appendix A; pers. comm., 20 May 2002); SAL (sub. 6, attachment B).

The distribution of tugs between ports has altered little over the last decade. In 1988, 63 per cent of ports had one or two tugs; today it is 67 per cent. Also, in 1988 the 12 ports with more than two tugs accounted for 54 per cent of the fleet. Today 15 ports have more than two tugs, accounting for 58 per cent of the fleet (Adsteam, sub. 15, appendix A; BTCE 1988, p. 13; SAL, sub. 6, attachment B).

The availability of sufficient towing power in a port usually is as important as the number of tugs. For many ship movements, one powerful tug may be used instead of two smaller tugs. The power of individual tugs is measured in terms of tonnes of bollard pull (tbp). This is the force that can be exerted on a static object (a bollard, for example) by a tug. Some ports with only two tugs have a total bollard pull similar to that of ports with three or four tugs (notably BHP's two 75 tbp tugs at Hay Point). Nearly two-thirds of the Australian fleet has a bollard pull of more than 40 tonnes (figure 2.3). This has been the case since 1988, although there does appear to have been a trend to more powerful tugs since the late 1970s (BTCE 1988, p. 13).

Figure 2.3 **Australian harbour towage fleet by tonnes of bollard pull (tbp)**



Data source: SAL (sub. 6, attachment B).

Shipping Australia Limited (SAL) commented that 'the minimum bollard pull for a tug handling the largest container ships afloat is 50 tonnes' (SAL 2001, p. 3). Experience in Singapore supports this view, with the recent commissioning of four new tugs with bollard pull of 55–60 tonnes — Singapore's most powerful harbour tugs to date (Marcon 2002). According to Adsteam, nearly all tugs in the declared ports have bollard pull of either 47 or 60 tonnes (sub. 15, report 2, appendix E). SAL stated that Melbourne, Brisbane and Fremantle have tugs in excess of 60 tbp (sub. 6, attachment B).

Technology and investment

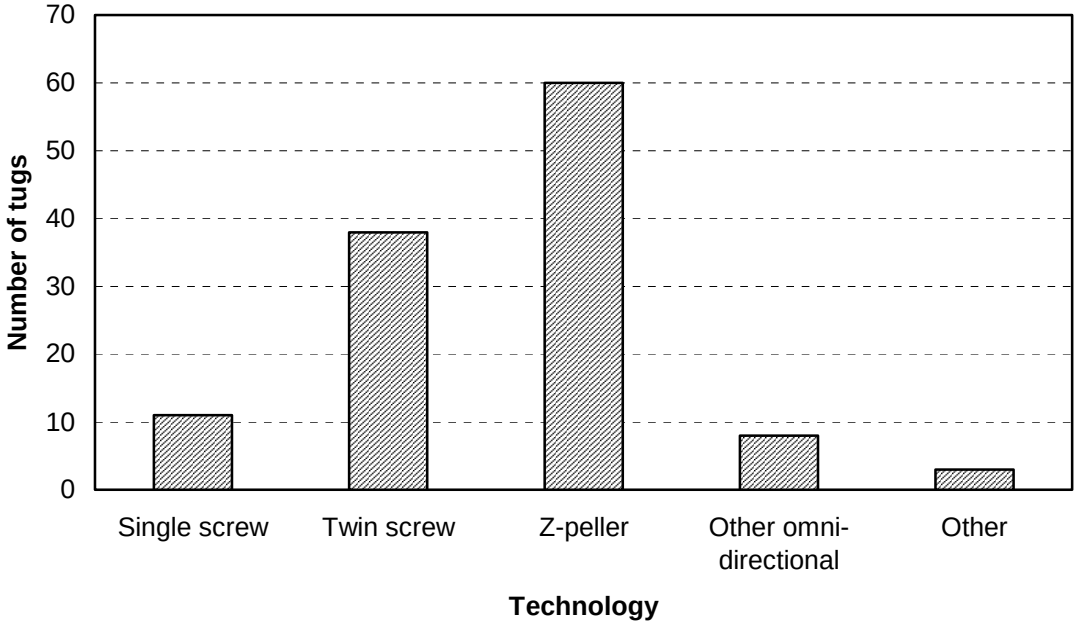
Technology

Australian towage operators were among the first companies in the world to introduce on a large scale omni-directional propulsion systems (BTCE 1988, p. 13). These systems provide a high degree of manoeuvrability and also enable the tug to exert almost as much pull astern as ahead.

There is a variety of types of tug boat operating in Australian ports. Earlier generation technologies include single-screw and twin-screw (fixed or steerable nozzle) propulsion systems. Omni-directional tugs include Z-pellers and Voith Schneider tugs. More than 59 per cent of Australian harbour tugs have omni-

directional propulsion systems (SAL, sub. 6, attachment B). The most common tug type in Australia are of the Z-peller variety (figure 2.4). The new entrant in the Port of Melbourne is using two Z-peller tugs, each with a bollard pull of 43 tonnes.

Figure 2.4 **Australian harbour towage fleet by technology type**



Data source: SAL (sub. 6, attachment B).

Towage winches are an important aspect of tug technology, particularly because of their impact on operational costs. Modern tugs with a towage winch are usually operated by a crew of two or three. Tugs without a winch require a crew of four.

Age

Tug boats can have an effective technical life of up to 50 years. Some tugs currently operating in the Australian fleet were constructed as early as the 1960s. However, factors such as technological obsolescence mean that economic lives can be much shorter: 'new generation Z-pellers … have a 'shelf' life of at least twenty-five to thirty years' (SAL 2001, p. 3). For financial reporting, Adsteam depreciates its vessels over 30 years with a 30 per cent residual value (Adsteam 2001, p. 35). Prior to Adsteam's fleet upgrade in 2000-01, the average tug age in the declared ports was 17 years — it is now 12 years (Adsteam, sub. 15, p. 10). The average age at other ports is unknown, although older tugs tend to be moved to smaller ports as the fleet is upgraded.

Capital cost

The capital cost of a tug boat varies, depending on its size, power and technology. Those with ocean-going salvage capability can cost up to $10 million. According to Adsteam, 'the most common tugs in Australia's capital city ports now have a build cost of over $10 million each' (2002c, p. 3), though this has been disputed by SAL (2001, p. 3). Some modern harbour tugs, which are smaller, are as powerful as older, larger tugs (with a bollard pull of 65 tonnes) and cost around $5.5 million each (Nowland 2001). One such tug is now operating in Esperance.

Since 1999, Adsteam has introduced seven new tugs into its fleet, at a cost of $8–10 million each. According to Adsteam (2002c), this has been deemed necessary to:

- replace aging tugs;
- meet the power demands of moving larger ships; and
- respond to pressure to reduce tug use by using fewer, more powerful tugs.

When Riverwijs took over Woodside Energy's towage operations in Dampier it purchased Woodside Energy's four 50 tbp Z-peller tugs for an estimated total cost of $11–13 million (LLDCN 2001b).

Cost structure

Although individual tugs may involve significant capital expenditure, labour and related expenses account for a large proportion of the costs of providing towage services. Labour's proportion of a towage operator's costs has fallen over the past decade. Table 2.3 indicates the cost structure of the Australian towage industry. These costs exclude the operator's return on capital. The relative capital intensity of the industry is highlighted by the share of depreciation in total costs.

In 1990, the Prices Surveillance Authority (PSA) found that gross margin[5] accounted for 24 per cent of towage operator's revenue in the capital city ports, while depreciation represented 11 per cent. Total labour costs accounted for 44 per cent of total revenue (PSA 1990, p. 5). The ACCC (1995, p. 75) estimated that the EBIT/assets ratio of the major towage operators in 1995 was 25 per cent.

5 Profit (before interest and tax). EBIT/revenue was 24.3 per cent for the capital city ports (PSA 1990, p. 17).

Table 2.3 **Harbour towage cost structure, 1995**
Excluding return on capital

Cost component	*Proportion of total*
	%
Operating costs	
Fuel	4.7
Insurance	2.3
Maintenance	7.0
Other	3.4
Sub-total	***17.5***
Capital costs	
Depreciation	16.3
Sub-total	***16.3***
Labour costs	
Wages	35.3
Training	0.7
Other	10.5
Sub-total	***46.5***
Indirect costs	
Administration	7.8
Management fees	8.0
Other	4.0
Sub-total	***19.8***
Total	**100.0**

Source: ACCC (1995).

In the short term, harbour towage costs are largely fixed. According to Adsteam: 'capital and labour costs vary very little if at all in relation to tug size or job type' (sub. 15, p. 33). The requirement for a certain level of towage capacity in each port also means that over the medium term, capital costs are relatively fixed. Adsteam has also suggested that its labour costs are largely fixed. According to the ACCC:

> Crewing costs are fixed in the short term because the number of crews, rostered and non-rostered, is set with reference to occupational health and safety considerations and the number of crew members allowed for a tug is prescribed by various State based maritime bodies. (sub. 21, p. 2)

In the declared ports, capital costs (including a return on capital) account for between 25 per cent and 40 per cent of total costs. Labour costs represent between 40 per cent and 50 per cent. Of the declared ports, labour costs are highest in Melbourne and Port Jackson. Adelaide and Fremantle are the most capital intensive (Adsteam, sub. 15, p. 34). The non-declared ports tend to be more capital intensive than the declared ports (ACCC 1995, p. 64).

Labour costs

There are approximately 820 people employed as crew in the Australian harbour towage industry (plus casuals) and a further 100 to 150 shore-based staff. Just over a quarter of crew are engineers and a similar proportion are masters; the remainder are deckhands (AIMPE, pers. comm., 15 May 2002).

Labour costs have fallen in recent years — the result of reduced crew sizes — but still account for nearly half of the operating cost of running a tug. In the declared ports, Adsteam has reduced the number of seagoing personnel by 27 per cent (to 273) since 1996-97 (Adsteam, sub. 15, report 2, pp. 3, 11).

In the 1980s, a tug boat typically employed a crew of between five and eight people. This was reduced to a national standard of five in 1989 and then to four in 1992. More recently, following lengthy negotiations, many tug crews have been reduced to three (a master, an engineer and a deckhand). The Commission is aware that some modern tugs can be operated with a crew of two and that some are now operating in Australia.

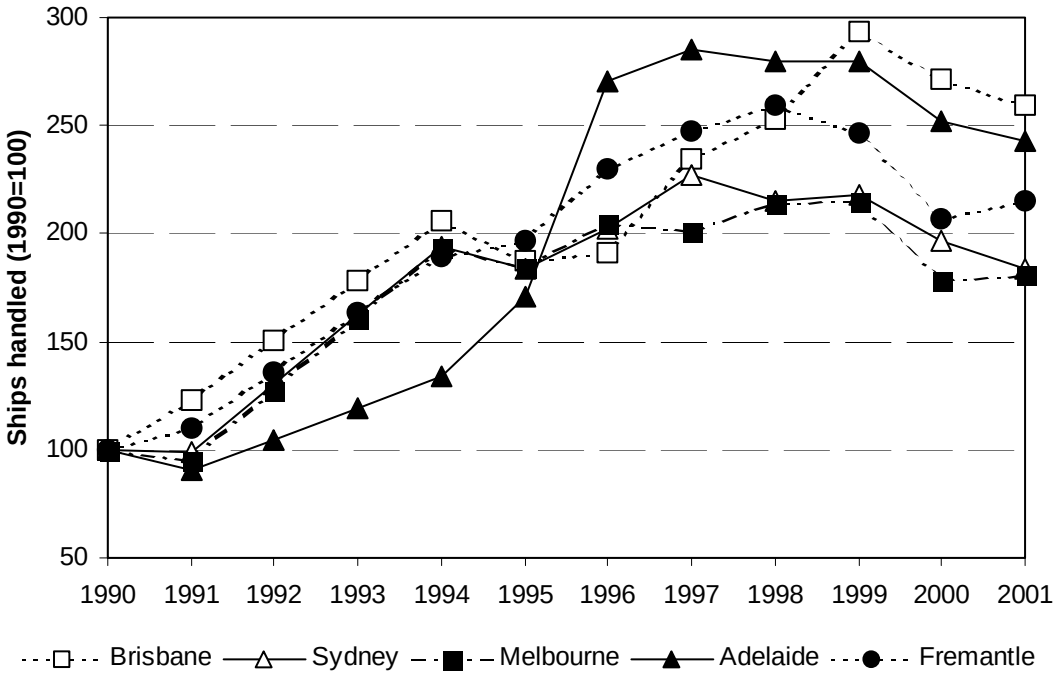
The nature of demand

The demand for towage is directly related to the number of ships that require towage in a port. This, in turn, is dependent on a number of factors, including: the level of economic activity and trade flows; changes in ship technology; guidelines on towage use; port geography; pilots; port authorities; and shipping lines.

Ship visits

While the number of ship visits to a port can be an indicator of the demand for towage, not all ships require towage. The total number of ship visits to Australian ports increased by 12 per cent over the five years to 1995-96 (AAPMA 2002). As illustrated in figure 2.5, the number of container ships visiting Australia's major container ports increased significantly in the 1990s. Growth averaged 13 per cent per year over the nine years to 1999. In both absolute and relative terms, the number of ships handled increased most in the Port of Brisbane, accounting for 27 per cent of the total increase.

Figure 2.5 **Index of ship visits, major container terminals, 1990 to 2001**



Data sources: BTCE, BTE and BTRE, *Waterline*, various.

Since 1999, however, the number of ships visiting all five of Australia's major container ports has fallen, 'largely as a result of attempts by the major container lines to achieve better utilisation through sharing space on one another's vessels' (Adsteam 2001, p. 13). Furthermore, the three years prior to 1999 saw relatively flat growth in ship visits (with the exception of Brisbane). However, the number of ship visits in 2001 was still well above that in 1990.

In terms of total commercial ship visits to all Australian ports, annual growth had slowed to less than two per cent by 2000-01. The major bulk ports of Newcastle and Hay Point/Dalrymple Bay have experienced a reduction in ship visits in recent years; as have Launceston, Geraldton and Albany. This has been somewhat offset by increases in ports such as Gladstone, Darwin and Cairns (AAPMA 2002).

Despite the recent decline in numbers of ships visiting Australia's major container ports, the number of containers exchanged has continued to grow. Similarly, bulk ports' throughput, measured in mass tonnes, has grown significantly (with the exceptions of Newcastle and Port Kembla during 1998–2000). This is indicative of the global trend to larger ships. According to Adsteam, 'larger ships require fewer if more powerful tugs for assistance' (sub. 15, p. 23). Thus, increasing trade volumes do not necessarily lead to an increase in the demand for towage.

Partially off-setting the decline in ship visits has been an increase in some ports in the proportion of ships requiring towage. Over the five years to 2000-01, the number of ships visiting the declared ports, and the number of them requiring towage, increased by 1.1 per cent and 3.3 per cent respectively. That is, the proportion of ships requiring towage has increased slightly. This was mostly driven by Brisbane (Adsteam, sub. 15, report 2, pp. 8–9).

Level of activity

The level of towage activity is usually measured in terms of numbers of 'tug jobs'. This measures the total number of movements performed by all tugs. If a ship requires two tugs for berthing, this is counted as two tug jobs.

In 2000-01 there were over 64 000 tug jobs in Australian ports. Dampier is one of the busiest ports in the country — with the second-highest number of commercial ship visits (in total and in those requiring towage) and the most tug jobs (table 2.4).

Table 2.4 **Australian tug jobs, vessel calls and ship visits by port, 2000-01**

Port	*Tug jobs*	*Vessel calls*[a]	*Total ship visits*
Dampier	8 300[b]	1 900[b]	2 450
Newcastle	6 978	1 231	1 489
Brisbane	5 869	1 918	2 271
Melbourne	4 250	1 785	2 823
Port Botany	3 931	1 173	1 207
Gladstone	3 412	859	969
Hay Point/Dalrymple Bay	3 000[b]	764	764
Port Kembla	2 783	644	656
Port Jackson	2 717	823	1 136
Port Hedland	2 700[b]	675[b]	686
Fremantle	2 645	879	956
Adelaide	2 384	699	983
Kwinana	1 991	601	654
Townsville	1 646	522	673
Geelong	1 446	523	542
Bunbury	1 330	320	341
Other	*9 030*	*3 963*	*6 403*
Total	**64 412**	**19 278**	**25 322**
Declared ports	**28 774**	**8 507**	**10 864**

[a] Vessels requiring harbour towage. [b] Adsteam estimate.

Sources: AAPMA (2002); Adsteam (sub. 15, appendix A).

Despite increased ship visits and an increase in the proportion of them requiring towage, the number of tug jobs in the declared ports decreased 5 per cent: from

30 159 in 1996-97 to 28 774 in 2000-01. Increasing ship visits in some regional ports, such as Gladstone and Abbot Point, have resulted in increased tug calls (Adsteam, sub. 15, p. 2; sub. 15, report 2, p. 14).

Towage activity can also be measured in terms of tug jobs per tug per day (table 2.5). Average daily tug use in the declared ports has increased since 1995, but falls in other ports have resulted in an overall reduction.

Table 2.5 **Tug jobs per tug per day**

	1991	*1995*	*2000-01*
Declared ports	2.3	2.3	2.6
Non-declared ports	1.4	1.4	1.1
Total	**1.9**	**1.9**	**1.5**

Sources: ACCC (1995); Adsteam (sub. 15, appendix A).

Adsteam noted that the fall in tug jobs in recent years has been a product of declining ship visits and pilot behaviour:

> In some ports, too, pressure on harbour pilots to reduce costs led to fewer tugs being used on certain ships or under certain conditions. It was noticeable, though, that safety concerns on the part of harbour pilots began to surface and the trend to fewer tugs, seen in recent years, levelled out by year [2000-01] end. (2001, p. 13)

Technological change has also contributed to declining tug jobs. According to the Port of Brisbane Corporation:

> … the incorporation of more modern technological benefits … reduce[s] the risk associated with close manoeuvring operations. Although the vessels have increased in size, the ability of the on-board systems to assist in close hauled manoeuvring has seen a reduction in the assistance required by tugs. (sub. DR42, p. 6)

The level of activity also is affected by the number of tug jobs per ship visit. Changes in tug usage and utilisation are examined later in this chapter.

2.2 Industry performance

Investigations in the 1980s relating to harbour towage found that the economic performance of the industry was characterised by inefficiency and high profitability (BTCE 1989, pp. 67–8). Industry reform and its effects are discussed in chapter 3. This section describes the harbour towage industry's operational performance and prices over recent years. Profitability is discussed in chapter 6.

Operational performance

There has been a number of operational improvements in the towage industry over the past decade. Several participants stated that they are reasonably satisfied with the levels of service provided by towage operators (for example, SAL, sub. 6, p. 2; Islamic Republic of Iran Shipping Lines, sub. 13, p. 1).

Service quality

Surveys by the Bureau of Transport and Regional Economics (BTRE) found very few delays due to towage unavailability in the major container ports in 2001. Towage was provided within one hour of the confirmed arrival/departure time to 798 ships of 805 surveyed (BTRE, *Waterline*, various). Performance has been at similar levels since the first data were published in 1997. However, it is not clear to what extent there may have been delays of less than one hour. Given the high cost of delays to ship operators relative to towage charges, even short delays may be of concern to users.

In most ports towage is now provided on a 24-hour basis and can be ordered on a 24-hour basis at two-hours notice. In some cases tugs can be provided within 15 minutes. This is a significant improvement on past practices. In particular, tugs required for weekend work previously had to be ordered before 4pm Friday (Adsteam, sub. 15, p. 20).

A further improvement has been the removal of the 'taxi-rank' system of tug availability. According to Adsteam:

> … the tug at the head of the rank had to be used, even if it was not the tug required by the harbour pilot. On occasions, unnecessary tugs had to be provided simply to allow the required tug (further along the rank) to be deployed. (2002c, p. 21)

Data are also available on tug and pilot bookings (combined). In 2001, of the 805 ships surveyed, 50 instances were identified where tugs or pilots were not able to be booked to provide services at the preferred time — nearly all of which resulted in delays of under two hours (BTRE, *Waterline*, various).

Benchmarking of foreign ports commissioned by Adsteam found that service standards in Australia are comparable to European and other Asia–Pacific ports and exceed those in some North American ports (Adsteam, sub. 15, report 2, pp. 4–5).

Crewing arrangements

Many past operational inefficiencies, such as early ordering for weekend work and the 'taxi-rank' system, were a result of restrictive workplace practices. For example, in the past, workforce restrictions prevented crews or employees transferring from one tug to another. As a result of the reforms commenced in the late 1980s, labour flexibility has improved significantly (chapter 3).

Adsteam stated that 'labour productivity in the towage industry has improved dramatically over the last decade' (sub. 15, p. 18). There has been a significant reduction in the size of tug crews — in some cases, from eight people to three. At the declared ports, employees (excluding casuals) per operational (manned) tug fell from 10.9 in 1996-97 to 8.8 in March 2002 (table 2.6). Annual tug jobs per employee increased from 92.5 to 105.2 over the five years to 2000-01 (Adsteam, sub. 15, report 2, p. 14).

Table 2.6 **Estimates of changed crewing arrangements**

	1980s	*1996-97*[a]	*2002*[a]
Average number of crews per tug	3.0	2.7	2.9
Number of employees per crew	6.0[b]	4.0	3.1
Total employees per manned tug[c]	18.0	10.9	8.8

[a] Declared ports only. [b] Tugs employed crews of between four (Hobart and Albany) and eight (Melbourne and Hay Point). [c] Excludes unmanned tugs and casual labour.

Source: Commission estimates based on Adsteam (sub. 15, report 2, appendix D) and BTCE (1988).

Thompson Clarke Shipping estimates that in 2000-01, 19 casual crew (full-time equivalent) were employed in the declared ports. Casual labour is used to cover employee absence due to leave and to replace crews that leave the port to undertake salvage work (Adsteam, sub. 15, report 2, pp. 11–12).

Crewing levels in international ports vary. In Singapore an average of two crews of three persons operate each tug, while in Hong Kong four crews of four persons are used. In Philadelphia, crew sizes vary between four and seven persons and an average of three crews operate each tug. Three four-person crews are used in Tilbury (UK) and up to four crews of three persons in Hamburg (Adsteam, sub. 15, report 2, appendixes F–H).

Tug utilisation

Tug utilisation is one measure of the capital productivity of the towage industry. This is usually measured by the number of tug jobs per ship visit. The ACCC found that the number of tug jobs per ship assisted in declared ports decreased from 3.3 in

1991 to 3.0 in 1995. For all Australian ports, tug jobs per visit declined from 3.5 to 3.1 (ACCC 1995, p. 72). There have since been further reductions in the average number of tugs required per ship movement in container ports, notably Melbourne (table 2.7), although tug jobs per ship call are still high by international standards (table 2.9). According to Thompson Clarke Shipping, the reduction in tug use was:

> … the result of evolving port guidelines reflecting improved ship manoeuvring capabilities and to some extent the flexibility of pilots in enforcing the guidelines under favourable marine/weather conditions. (Adsteam, sub. 15, report 2, p. 13)

Over the five years to 2000-01, the percentage fall in the average number of tug jobs per vessel call in the declared ports has been greater than the percentage fall in total tug jobs — 3.3 per cent more ships requiring towage are being handled by 6.1 per cent fewer tug boats (Adsteam, sub. 15, report 2).

While the average number of tugs required per container ship has fallen, it appears that the demand for towage by bulk ships has not. CSR Shipping stated that 'the volume of business we present for tug companies remains steady' (sub. 5, p. 2).

Table 2.7 **Tug utilisation**
Ships requiring towage

	Ship visits per tug		*Tug jobs per ship visit*	
Port	*1994*	*2000-01*	*1996-97*	*2000-01*
Sydney	279	285	3.54	3.33
Melbourne	426	357	3.06	2.38
Fremantle[a]	575	293	3.45	3.01
Brisbane	286	384	3.11	3.06
Newcastle	168	205	5.83	5.67
Adelaide	241	175	3.56	3.41
Dampier	213	238	na	4.37
Hobart	86	36[b]	na	2.22[b]
Launceston	257	335[b]	na	0.34[b]
Devonport	447	100[b]	na	2.00[b]
Port Kembla	163	161	na	4.32
Geelong	213	262	na	2.76
Gladstone	168	286	na	3.97
Geraldton	111	99	na	4.07
Port Hedland	106	113[b]	na	4.00[b]
Hay Point/Dalrymple Bay	na	191	na	3.93[b]
Bunbury	129	107	na	4.16

a Not including Kwinana. **b** Adsteam estimate. **na** Not available.

Sources: ACCC (1995); Adsteam (sub. 15, appendix A).

During the 1990s, the growth in ship visits more than compensated for the decline in tug jobs per ship. However, declining ship visits in recent years have resulted in falling numbers of tug jobs.

Another measure of tug utilisation is tug jobs per tug day. The number of tug days is defined as the aggregate number of days that each tug is available for service in a year. Over the five years to 2000-01, there was a slight increase in tug jobs per available day in the seven declared ports. However, this masks significant differences across ports, with increases in Brisbane and Newcastle and falls in Fremantle, Melbourne and Port Botany (table 2.8).

Table 2.8 **Tug jobs per tug day, declared ports**

Port	*1996-97*	*2000-01*
Adelaide	1.87	1.83
Brisbane	2.74	3.04
Fremantle	3.11	2.44
Melbourne	3.13	2.53
Newcastle	2.44	3.19
Port Botany	3.74	3.47
Port Jackson	2.54	2.42
Total declared ports	**2.74**	**2.76**

Source: Adsteam (sub. 15, report 2, appendix C).

While Australia's declared ports generally have more tug jobs per ship visit than large overseas ports, low numbers of ship visits result in fewer tug jobs per tug day than most foreign ports, indicating a low level of tug utilisation (table 2.9). However, comparisons of tug utilisation across ports are complicated by significant differences in port geography and the duration of a tug job at each port.

Table 2.9 **International tug utilisation, selected ports**

Port	*Tug jobs per ship visit*	*Tug jobs per tug day*
Australia, declared ports	3.4	2.8
Singapore	1.8	5.9
Hong Kong	1.8	6.0
Port Klang	2.9	8.0
Rotterdam	1.2	1.8
Hamburg	1.3	2.6
Los Angeles	3.0	3.1
Seattle	3.9	1.5
Philadelphia	2.2	1.1

Source: Adsteam (sub. 15, report 2).

Low utilisation and spare capacity are a product of Australia's low number of ship visits and the need to maintain enough tugs to service large ships in adverse weather conditions. Illustrating this under-utilised towage capacity, the Sydney Ports Corporation estimated the proportion of total time that the tugs stationed in Port Jackson and Port Botany spend undertaking tug jobs — excluding travel time to and from the tug base (table 2.10). The fourth tug in Port Jackson is used by one customer and therefore is idle much of the time (sub. 19, p. 4).

Table 2.10 **Tug usage in Sydney[a]**

Proportion of total time each tug spends undertaking tug jobs, per cent

Tug	*Day*	*Night*
Port Jackson		
1	26.0	17.0
2	17.0	10.0
3	6.5	1.5
4	3.5	0.5
Port Botany		
1	30.0	19.0
2	20.0	13.0
3	7.5	2.5

a Actual tug operations may be allocated more evenly between the tugs. Does not include travel time to and from the job. An eighth tug is often located in Sydney and acts as a relief tug for all NSW ports.

Source: Sydney Ports Corporation (sub. 19).

Towage prices

Charges for towage services are usually specified in published schedules. The schedules vary across ports, but most have a common structure and standard components. Prices are typically expressed in terms of a basic charge for a standard tug job and surcharges or discounts for special circumstances.

Basic charges

Basic towage services involve assisting ships in channels and berthing and unberthing under specified conditions.[6] The schedule of charges for these services is for ships using their own power and is predominantly based on the gross registered tonnage (GRT) of the client vessel. This is because larger ships may require more powerful (more expensive) tugs and may take longer to berth. Table 2.11 contains one-way towage charges for a selection of Australian ports.

6 As described in the *United Kingdom Standard Conditions for Towage and Other Services (Revised 1974).*

Charges are quoted per tug. The total towage charge for assisting a particular ship is therefore dependent on the number of tugs used.

Table 2.11 **Published towage charges, various Australian ports, May 2002[a]**

Port	*17 215 GRT*[b]	*32 500 GRT*[c]
	$ per tug	$ per tug
Port Botany	2 971	3 161
Port Jackson[d]	2 553	3 183
Melbourne	3 665	3 919
Adelaide	3 805	4 602
Brisbane	2 972	3 755
Fremantle - inner harbour	2 514	3 724
- outer harbour (Kwinana)	2 761	3 828
Port Kembla	2 416	4 219
Cairns[e]	5 191	6 325
Lucinda[f]	12 407	16 804
Bunbury[g]	3 449	4 153
Geraldton[h]	3 806	5 775
Gladstone	1 653	2 354

a Charges are for a one-way movement and include GST. **b** The same vessel size as that used by the BTRE in its *Port Interface Cost Index*. See, for example, BTRE (2002). **c** Price schedules for smaller ports may include, for example, a '30 000 GRT and over' bracket. **d** Up to three tugs. Where a vessel requires a fourth tug it costs $23 135 per service. **e** For a one-tug service. Using two tugs costs more than double this as the second tug is priority-allocated to sugar ports. **f** Calculated from the published charge which is for a two-way movement assuming two tugs for berthing and one tug for sailing. **g** Inward movement only. Rates are lower for outward movements. **h** One tug. Two tugs costs $6886 and $10 318, respectively. **GRT** Gross registered tonnage.

Sources: Towage operators' pricing schedules.

Of the five major container ports, Adelaide has the highest per tug towage charges and Fremantle the lowest (inner harbour only). In contrast, in 1985, Adelaide had the lowest per tug towage charges and Brisbane the highest (BTE 1986, p. 94).

Given the largely fixed nature of towage costs and the basis for setting charges, busier ports with more tug jobs might be expected to have lower charges (provided there are not exceptional geographic or other factors affecting costs). Of the ports listed in table 2.11, Lucinda has the highest towage charges, reflecting the very small number of ship visits and the need to bring a tug from Cairns.

Additional charges

In recent years there has been some simplification of towage charges and some additional charges no longer apply in many ports. However, shipping lines may still incur expenses in addition to the basic service charges specified in the schedule. These vary across ports.

Basic service charges generally cover a period, typically two hours, of attendance by the tug from the booking time. Beyond this an hourly rate is charged. In the Port of Cairns, an hourly waiting time charge is applied after the first half hour. This charge is higher outside normal business hours.

In some ports, towage operators apply an 'attendance charge'. This is usually a fee for cancellations that occur outside normal business hours. Similarly, late ordering or changing of a tug order incurs a penalty in some ports.

There are also additional charges for the delivery of water and the supply of tug lines, although the latter charge has been abolished in many ports. When a tug is required for other normal port services, charges are levied on an hourly basis with a specified minimum period (usually four hours). Special services such as salvage are charged out at contract rates.

Rebates and discounts

Adsteam stated that 'the introduction of rebate agreements have eroded [published price schedules'] relevance and mask the true, lower cost of towage' (Adsteam 2002c, p. 5). Adsteam said that rebates have been introduced progressively since 1996, following complaints from major users that they subsidised casual users' towage requirements. In 1990, the PSA recommended that users make use of their buying power by seeking volume discounts (PSA 1990, p. 63). In 1995, the ACCC found that:

> … at least one shipping line has been offered volume discounts by major harbour towage operators for calls at a number of Australian ports. (1995, pp. 25–6)

Further:

> … the level of discounts appears to be higher, up to 20 per cent, in ports where there are competitive pressures, with little or no discount offered in other ports. Discounts are also being offered to selected customers for use in a range of ports. (ACCC 1995, p. 50)

According to Adsteam, rebates represent around 3–6 per cent of towage revenue in the major declared ports (Adsteam 2002c, p. 35) and cost Adsteam $6 million per year at all ports (sub. 15, p. 6).

Variations in prices across ports

There are significant variations in towage charges across ports (table 2.11). Variations in charges per ship tend to be larger than per tug, reflecting the variability of tug use between different ports (table 2.12).

Table 2.12 **Australian basic towage charges per ship visit, 2002**
Indicative[a]

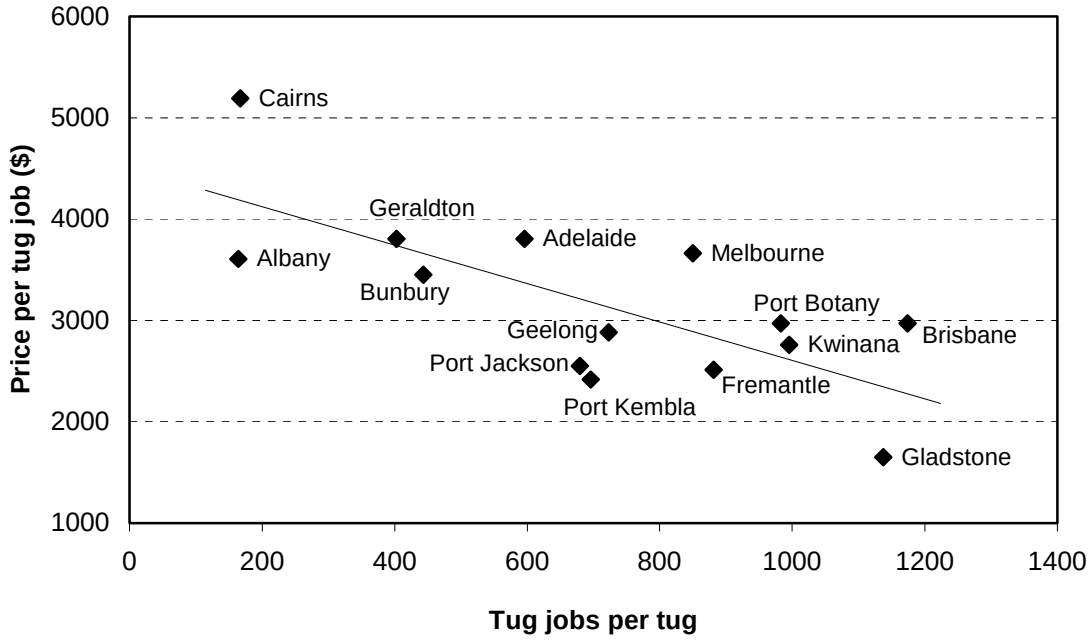
Port	*17 215 GRT*
	$ per visit
Brisbane	7 989
Sydney	7 971
Melbourne – container ship	7 422
– grain ship	12 064
Adelaide	13 136
Fremantle	5 711
Newcastle[b]	5 543
Albany	15 095
Bunbury	9 897
Esperance	11 182
Geelong	7 628
Geraldton	11 502
Gladstone	5 457
Kwinana	12 260
Lucinda	37 222
Mackay	16 814
Mourilyan	24 940
Port Giles	16 000
Port Kembla	8 774
Port Lincoln	12 660
Port Pirie	18 120
Portland	11 880
Thevenard	11 190
Townsville	8 800
Wallaroo	11 140

a The cost for an individual visit depends on the number of tugs used, which in turn is determined by factors such as weather, ship technology and bollard pull of the tugs available. **b** For vessels with an overall length between 130 and 200 metres. **GRT** Gross registered tonnage.

Sources: Commission estimates from BTRE (2002); towage operators' published charges; SAL (sub. 6, attachment C).

However, these charges cannot be used to draw inferences about the relative efficiency of towage services in these ports. Rather, they appear to reflect the impact of factors which affect demand and operators' costs (see above). In particular, charges generally are lower in busier ports. This is illustrated in figure 2.6.

Figure 2.6 **Price per tug job and annual tug jobs per tug**



Data sources: Adsteam (sub. 15, appendix A); towage operators' price schedules.

Charges per ship visit

In 1998, the Commission found that towage charges in Australia generally were higher than in a selection of overseas ports included in a benchmarking study (PC 1998a, pp. 60–2). However, making inter-port comparisons is not a simple matter. Many foreign ports have significantly higher throughput than Australian ports. For example, SAL stated that in 2001 the towage cost for a ship of 43 600 GRT at the port of Rotterdam was US$2510. Yet, at the Port of Tilbury — with container throughput greater than Fremantle but lower than Melbourne — the cost of towage per visit was US$6887, compared with US$6162 in Melbourne and US$8990 in Fremantle (SAL 2001, p. 2).

Total towage charges paid per visit by bulk ships are usually higher than container ships. Bulk ships generally require more tugs due to their lack of manoeuvrability (they are less likely to employ bow and stern thrusters) and the lack of pilots' knowledge of bulk ships that call at a port infrequently. Risk aversion and the higher expected cost of an accident tend to increase tug usage for tankers.

Charge per unit shipped and as a proportion of total port costs

Costs per unit of cargo are of particular relevance for shippers. Table 2.13 shows representative towage charges per container exchanged for the five major container

ports in Australia.[7] In these terms, Melbourne is the cheapest port for towage despite a higher charge per tug than most container ports, reflecting:

- more containers exchanged per ship; and
- lower tug use reducing the cost of towage per ship (table 2.12).

The low charge per tug in Brisbane is offset by higher tug use per ship and lower containers exchanged per visit. Fremantle's low towage charges — per tug and per ship — are also offset by lower containers exchanged per ship compared with Melbourne and Sydney.

Table 2.13 **Towage charges per TEU exchanged, major Australian container ports, current prices[a]**

	$ per TEU exchanged		*% port costs[b]*	
Port	*1994*	*2001*	1994	2001
Brisbane	30.41	15.47	7.3	4.4
Sydney	14.28	8.31	3.8	2.4
Melbourne	10.76	6.56	2.8	2.1
Adelaide	39.68	21.29	9.7	6.0
Fremantle	32.11	8.67	8.2	2.7

a Assumes a ship of 17 215 GRT, berthing and unberthing, in normal weather conditions. **b** Towage's percentage of BTRE's total 'port interface costs' for exports including stevedoring, excluding road transport. Port costs for imports are greater than for exports due to higher customs brokers' fees and, in some ports, higher wharfage charges. Towage therefore represents a slightly larger share in total port costs for exports than it does for imports.

Sources: BTCE (1995b); BTRE (2002).

There is a paucity of data regarding towage costs as a proportion of bulk cargoes. However, CSR Shipping noted that towage represents 'about 0.8 per cent of the handling cost (sea freight plus stevedoring)' for bulk materials such as raw sugar, gypsum, cement and alumina (sub. 5, p. 1). Adsteam stated that 'towage can cost as little as $0.27 per tonne of refined oil, $0.50 per tonne of grain and $0.32 per tonne of coal' (sub. 15, p. vi).

Table 2.13 also highlights the small size of the harbour towage industry in Australia. In 2001, harbour towage charges for the major container ports accounted for between 2 and 6 per cent of total port costs (including stevedoring and customs brokers' fees). The total port costs involved in exchanging a container vary from $311 (Melbourne) to $355 (Adelaide) (BTRE 2002).

7 The international standard shipping container measures 20 feet by 8 feet by 8 feet. Hence container numbers are measured in 'twenty foot equivalent units' (TEU).

Charges as a proportion of the value of goods shipped

Based on average towage charges per container and the average value of a container-load of certain products, towage charges represent around 0.01 to 0.03 per cent of the value of a container of wine, chilled meat or cotton; and up to 0.05 per cent of the value of a container of wool (Adsteam 2002d; BTRE 2002). The cost of towage as a proportion of the value of bulk cargoes varies from 0.01 per cent for refined oil to 0.81 per cent for gypsum (Adsteam, sub. 15, p. 42).

Trends in prices over time

Prices charged per tug job have varied significantly over the past 15 years (table 2.14). Scheduled towage rates have increased in some ports and decreased in others (in current prices). Although a number of factors have driven changes in towage prices — particularly growth in ship visits, reductions in tug use and changes in port authority requirements — which make inter-port comparisons difficult, towage prices (per tug job) have grown faster in the declared ports (1.56 per cent per annum, on average) than in a selection of non-declared ports (0.39 per cent per annum, on average).[8]

The ACCC found that, over the four years to 1995, towage charges per ship visit (which are of more interest to shipping operators) decreased (in nominal terms) more in the non-declared ports than in the declared ports (ACCC 1995, p. 73). Since then, towage charges per ship visit have continued to decline in each of the five major container ports (table 2.15).

The Commission has not had access to comprehensive price data (per ship visit) for non-declared or bulk ports. Anecdotal data suggest that towage charges per ship visit in bulk ports have generally fallen by less than container ports (Gladstone is one exception), or have increased (SAL, pers. comm., 3 July 2002). This probably reflects, at least in part, new technology making container ships better placed to reduce their tug use.

8 Price data over time for remaining non-declared ports are not available.

Table 2.14 **Scheduled charges for a 20 000 GRT ship, current prices**

Port	*1988*	*1995*	*2002*[a]	*Annual change*
	$ per tug job	$ per tug job	$ per tug job	%
Declared ports				
Sydney	1 551	1 766	2 389	3.13
Melbourne	2 470	2 500	3 373	2.25
Brisbane	2 600	2 820	2 702	0.28
Adelaide	2 939	3 310	3 459	1.17
Fremantle	1 960	3 520	2 285	1.10
Newcastle	na	1 662	1 835[b]	1.42
Average (declared)[c]				**1.56**
Non-declared ports				
Port Kembla	1 688	2 354	2 196	1.90
Bunbury	3 350	2 722	3 135[d]	-0.47
Hay Point	6 000	na	7 183	1.29
Port Hedland	2 900	1 644	4 705	3.52
Darwin	5 182	na	8 405	3.51
Abbot Point	6 250	na	6 450	0.22
Whyalla	3 041	na	4 343	2.58
Hastings	3 870	na	12 005	8.42
Townsville	11 410[e]	na	10 114	-1.09
Kwinana	2 434[e]	na	2 510	0.28
Geraldton	3 480[e]	na	2 850[f]	-1.80
Albany	3 290[e]	na	3 607	0.84
Mackay	na	17 054	15 285	-1.55
Gladstone	na	2 632	1 837	-5.01
Geelong	na	5 050	2 884	-7.69
Bundaberg	na	7 010	7 625	1.21
Average (non-declared)[c]				**0.39**

a GST excluded. **b** Assuming three tugs used for visit. **c** Unweighted. **d** Inward movements. $2038 for outward movements. **e** 1991. **f** One tug. $2540 per tug if two tugs used. **na** not available. **GRT** Gross registered tonnage.

Sources: Adsteam (pers. comm., 6 August 2002); ACCC (1995); BTCE (1988); towage operators' published price schedules.

Shippers focus on towage charges per container (table 2.13) and charges as a proportion of the value of goods being shipped. For 17 215 GRT ships, towage costs in Adelaide have fallen the most, making it the cheapest port of the five for towage on a per ship basis where once it was the most expensive (table 2.15).[9]

9 In terms of total port costs, Fremantle is the cheapest per container, while Brisbane is the cheapest per visit (BTRE 2002).

Table 2.15 **Towage charges per ship visit, current prices[a]**

Port	*1994*	*2001*	*Change*
	$ per visit	$ per visit	%
Brisbane	9 264	8 115	-12.4
Port Jackson	4 373	4 197[b]	-4.02
Port Botany	9 989	7 164	-28.3
Melbourne	6 932	6 023	-13.1
Adelaide	11 519	3 983	-65.4
Fremantle	11 430	5 711	-50.0

a For a 17 215 gross registered tonne ship. **b** 2000.

Sources: Adsteam (2002d); BTCE (1995b); BTRE (2002).

Selecting the deflator to convert nominal to real prices depends on the purpose. Deflating by the underlying Consumer Price Index (CPI), which increased by 24 per cent over the period 1994 to 2001, provides an indication of the change in real prices from the perspective of domestic towage users. For example, using the underlying CPI as the deflator, real charges per tug job have fallen in Brisbane, Adelaide, Fremantle and Newcastle, but have increased in Sydney and Melbourne.

2.3 Related services

A number of port activities are related to harbour towage. These are services that are required for the berthing and sailing of vessels (for example, mooring), and services that are sometimes provided by towage operators (such as salvage and fire-fighting).

In nearly all Australian ports, mooring is provided either by the port authority or the towage provider. Mooring lines are used to secure ships in place at their berth. Linesmen tie up and let go of the ship at the wharf. For larger vessels or where lines cannot be dropped directly onto the wharf, mooring launches are used to take lines from the ship to the mooring gang.

Some harbour tugs are equipped for emergency work such as fire-fighting, salvage and assisting in cleaning up environmental spills. Of the 33 tugs located in the seven ports where towage is declared, nine are equipped for salvage and 14 for fire-fighting. Since the beginning of 1999, 15 tugs from the declared ports have been used in 13 salvage operations (Adsteam, sub. 15, report 2, p. 10; appendix D). In the two years to December 2001, United Salvage[10] attended 22 salvage 'casualties' (four of them not in Australia) (Adsteam, sub. DR29, pp. 15–16).

10 A wholly-owned subsidiary of Adsteam.

Barging services also may be provided by towage operators. The transportation of small quantities of bulk cargo using tugs and barges has been growing in recent years. Adsteam noted that 18 per cent of its revenue comes from barge operations (LLDCN 2001a).

Tug boats are sometimes used to ferry pilots, deliver water to ships at anchor and also provide dredging services to some port authorities.

Mooring prices

Mooring charges vary significantly across Australian ports. At some ports, charges depend on the size of the mooring gang required, others charge according to the size of the ship, while some ports charge a flat rate per service.

Mooring in Geraldton is provided by the port authority which charges $0.066 per GRT of the vessel. For a 17 250 GRT vessel, mooring costs $1139. In Fremantle, the port authority charges a flat fee of $495 for mooring in the inner harbour and $605 in the outer harbour (Kwinana). Mooring charges at the Port of Gladstone increase with the size of the mooring gang. For example, six linesmen plus one supervisor cost $1338. In Townsville, an eight person mooring gang costs between $281 and $432 per hour depending on the time of day and day of week.

Mooring charges per ship visit and per container in most of the major container ports have fallen over the past decade (table 2.16). Charges in Sydney are more than three times higher than those in Melbourne.

Table 2.16 **Mooring charges, selected container ports**

	$ per ship visit		*$ per TEU exchanged*	
Port	*1994*	*2001*	*1994*	*2001*
Brisbane	1005	1898	2.97	3.68
Sydney	4448	3298	6.50	3.44
Melbourne	2348	1035	3.44	0.91
Fremantle	1406	605	3.95	0.92

Sources: BTCE (1995b); BTRE (2002).

According to CSR Shipping, ‘the cost of mooring services averages about 0.6 per cent of the handling costs (sea freight plus stevedoring)’ for bulk commodities such as sugar, gypsum, cement and alumina (sub. 5, p. 1).

Prices of other related services

Price data for lines launches are not readily available. Gladstone Port Services & Brisbane Port Launches indicated that competition has placed downward pressure on lines-launch prices in recent years (sub. DR39).

Payment for the provision of fire-fighting services depends on the provider's arrangement with the port authority. Some ports pay a fixed annual fee for the provision of fire-fighting capacity, others do not. In Sydney and Melbourne, the port authorities pay annual fees to the towage operator of $15 000 and $10 000 respectively, for fire-fighting back-up services (Adsteam, sub. 15, p. 9). The towage provider usually charges the user when it attends a fire.

The price for salvage services depends on the nature of each job. The price of salvage provided under contract (non-emergency services) is determined by negotiation or through open tender. Remuneration for emergency salvage is usually determined by an independent arbiter through arrangements such as Lloyd's Open Form and is dependent on successful salvage outcomes. Salvage is discussed in more detail in appendix F.

3 Reform of harbour towage and the port environment

This chapter discusses reforms in the harbour towage industry and the port environment more generally since 1989. Key harbour towage reforms include reducing crew numbers and increasing flexibility of service. Reforms of the port sector, particularly waterfront reforms and restructuring of port authorities, have substantially changed the broader environment in which the harbour towage industry operates.

3.1 Towage reforms

Towage Industry Reform Strategy

In the 1980s, the Australian shipping industry underwent major structural adjustment. The Shipping Reform Task Force was established by the Commonwealth Government in 1988 to develop a strategy for further efficiency and competitiveness reforms in the industry. The Task Force recommended in 1989 that a Shipping Reform Authority (which became the Shipping Industry Reform Authority (SIRA)) be established for a fixed three-year term to oversee detailed development and implementation of the reform strategy. The Task Force also recommended that the towage industry develop an operational reform strategy.

The Commonwealth Government formed the Towage Industry Reform Committee (TIRC), comprising representatives of towage operators and industry unions and overseen by the Chairman of SIRA, to develop the reform strategy for the towage industry. In 1989, TIRC recommended a comprehensive reform program to the Government. The Government agreed to the key elements of the Towage Industry Reform Strategy and formed the Towage Industry Reform Implementation Committee (TIRIC), comprising representatives of the major towage operators and unions and chaired by the Chairman of SIRA, to oversight the reforms (TIRIC 1992, p. 1).

Implementation of the key elements of the Towage Industry Reform Strategy commenced in 1990. These included:

- reductions in maximum crew size for harbour work from eight to five persons by March 1990 and, subject to crew training and technological innovations, to four by June 1992;
- a review of port practices, including renegotiation of crew rostering and leave arrangements on a port-by-port basis;
- training courses for crews to allow for smaller crew sizes; and
- Voluntary Early Retirement (VER) and compulsory redundancy schemes. (TIRIC 1992, p. 1)

The funding of the VER scheme was shared between the Government and the towage industry employers. The Government contributed $24 000 per VER package to a total of $5.76 million, with employers contributing approximately $17 million (TIRIC 1992, p. 4). VER benefits were the same as those offered in the shipping industry.

Towage Industry Reform Strategy outcomes

Significant reform was achieved in the towage industry through the reform strategy. Reductions in crew sizes on harbour tugs from a maximum of eight to five persons was completed by 1990, and to four persons in 1992. Crew numbers on tugs used for voyages outside harbours were reduced from 14 to a maximum of nine in the same period (TIRIC 1992, p. 2). To complement the recrewing program, 240 VER packages and 21 compulsory redundancies were offered. This represented a reduction of 25 per cent of the workforce over the period 1989–92 (TIRIC 1992, p. 4).

A port-by-port review of port practices resulted in changes to roster arrangements, numbers of tugboats, flexibility of service, casual labour and worker skills. TIRIC found these changes resulted in more efficient utilisation of plant, equipment and human resources.

- Changes to roster arrangements in the majority of ports increased the availability and flexibility of tugboats, resulting in faster turnaround in ship arrivals, departures and altered shipping orders.
- Roster rearrangements also reduced the number of industry employees by reducing the number of crews required in some ports.
- In some ports, rationalisation of the number of tugboats minimised duplication of tugs and crews. (TIRIC 1992, p. 3)

With regard to training, more than 90 per cent of employees in the towage industry completed industry-specific training courses (TIRIC 1992, p. 3).

Impact of the reforms on towage costs and prices

In 1990, the Prices Surveillance Authority (PSA) was asked to undertake an inquiry into harbour towage charges, including whether the benefits arising from reforms were reflected in charges for harbour towage services. The PSA recommended harbour towage at the ports of Melbourne, Sydney (Port Jackson and Port Botany), Fremantle, Brisbane, Newcastle and Adelaide be made a declared service under the *Prices Surveillance Act 1983*. The PSA recommended price monitoring for other ports, with the aim of determining whether harbour towage operators had passed on the benefits of reform (PSA 1990, p. 62).

In the first and only report under the monitoring program in 1993, the PSA found that crew costs faced by harbour towage operators had been reduced by the reforms. In capital city ports, crew costs decreased by 9 per cent over the two years from 1990 when reforms were implemented (PSA 1993b).

However, the PSA found that despite reductions in crew costs, charges for towage services generally had not been reduced as a result of reforms. The reforms had at best restrained charges, although charges had increased at some ports (PSA 1993b, p. 23). The PSA found that other costs had increased over the period, offsetting the reductions in crew costs. In particular, other operating costs (fuel, insurance and maintenance) had increased by 29 per cent and administration costs had increased by 11 per cent. In addition, a decline in the number of tug jobs meant that fixed costs per tug job increased (PSA 1993b, p. 23).

In 1995, the ACCC also found that reforms had led to a general reduction in labour costs. However, those savings were offset by cost increases in other areas, leaving unit costs at similar levels to those prevailing prior to the reforms. Over the period of reforms (1989–1992), towage charges fell in real terms in many ports. The ACCC concluded that the benefits of reform had been passed on (ACCC 1995, p. 77). Users also benefited from improvements in towage service and availability, essentially through faster ship turnaround (chapter 2).

Subsequent crewing reforms

As noted in chapter 2, the majority of tug crews have now been reduced to three persons. This change necessitated installation of additional safety equipment and changes to work practices; for example, tug engineers are now required to assist on

deck with some operations. Port practices also have been modified to provide more flexibility of service to end users, by increasing the availability of crews outside ordinary hours. The Australian Institute of Marine and Power Engineers (sub. 14, pp. 8–9) observed that major changes in the towage industry have been brought about through negotiation between the towage companies and industry unions.

3.2 Reform of the port environment

Significant reforms in the harbour towage industry were accompanied by substantial reform of the port sector during the 1990s, particularly to stevedoring, and changes to the structure and governance of port authorities. Reforms have encouraged greater focus by ports and providers of port services on improving performance and lowering prices to users. These have improved the performance of the overall port environment within which harbour towage is provided.

Productivity improvements in port services

Lower prices and increased productivity of port services, in particular the large gains made in stevedoring efficiency, can be expected to affect harbour towage operations. Reductions in prices and improvements in the quality (reliability and flexibility) of other port and marine services will tend to highlight towage prices and service levels and so may increase pressure from users of towage services for similar improvements in this sector. As Gans and King observed:

> If towage, pilotage or any other element of port services fails, then there is costly delay to ship operators. What this means is that measured performance of any one element will depend on the performance of all the elements of port service. More importantly, investments in service quality on any one element will be driven by the level of service on others. There is no sense in putting extra tugs into ports if there are insufficient pilots to handle a faster rate of shipping. (sub. 15, report 1, p. 11)

For example, provision of a 24-hour stevedoring service puts pressure on ports to offer a 24-hour towage service to assist ships on and off the berths. Improvement in ship turnaround time similarly puts pressure on towage operators to increase their flexibility and reliability.

Waterfront reforms

In 1989, the Commonwealth Government undertook a three-year program through the Waterfront Industry Reform Authority (WIRA), to increase efficiency in the stevedoring industry. The main strategy was to restructure the industry, so that enterprise employment would replace industry-based labour arrangements. This

involved a shift from industry-based to company employment and creation of career structures in the industry. The objectives of the reforms were to reduce the size and age of the workforce and to improve efficiency by addressing job structures, classification and training. In addition, the program sought to improve the efficiency of small ports (BTCE 1995a).

The Bureau of Transport and Communications Economics (BTCE) found that the WIRA reforms were successful, although the results were not spread uniformly across the industry. Overall, reductions in the size of the labour force and the consequential improvement in productivity led to lower stevedoring costs. In brief, the main reform outcomes from 1989 to 1993 were:

- the total number of stevedoring employees was reduced by 57 per cent;
- integrated port labour force agreements resulted in lower port costs and idle time, although minor ports continued to experience high levels of idle time;
- stevedoring performance improved significantly at container and bulk terminals;
- container crane productivity increased by 50 per cent;
- labour productivity improved by 60 per cent for bulk cargoes; and
- the national average cost to the stevedore of unloading or loading containers declined by $76 per TEU[1] or 29 per cent between 1990 and 1993 (BTCE 1995a, pp. 104–6).

The BTCE found that a large part of the productivity improvements and reductions in the costs of stevedoring cargoes were passed on to users in the form of lower stevedoring prices and improved service quality. Container stevedoring prices paid by vessel operators decreased by a national average of $61 per TEU, or 24 per cent, between 1990 and 1993. Vessel turnaround times and reliability also improved (BTCE 1995a, p. 106).

In 1990, concurrently with the WIRA reforms, the Australian Wheat Board took direct responsibility for engaging stevedoring services for bulk grain shipping. This allowed the Australian Wheat Board to facilitate productivity improvements in stevedoring by competitively tendering for provision of stevedoring services, reducing the on-board labour requirement for grain loading and introducing continuous loading. Costs for stevedoring for grains fell significantly as a result of reforms — by 70 per cent in real terms between 1989 and 1996-97. Actual loading time for grain vessels was reduced from 4.5 days in 1988-89 to around 1.6 days in 1996 (PC 1998a, pp. 153–4).

1 Twenty-foot equivalent unit; that is, a standard container measuring 20 feet by 8 feet by 8 feet.

Reform of the waterfront has continued, including through the 1998 Commonwealth Government waterfront reform program to facilitate stevedoring industry restructuring. Waterfront productivity has further increased. For example, the crane rate (number of TEUs handled per hour) increased from 23.3 in December 1997 to 35 in December 2001 (BTCE 1998; BTRE 2002).[2]

Other transport reforms

Recent improvements to the port-land interface and rail and road reforms more generally have increased the competitive pressure on port services. More efficient and competitive road and rail services will tend to put pressure on providers of port services to improve performance, as any weaknesses in the transport chain will become exposed as the overall service improves.

In addition, as road and rail transport provide direct competition to shipping services for some domestic cargoes, improvements in road and rail transport can be expected to increase the competitive pressure on ports. Lower rail freight prices have also reduced the costs of switching cargoes between ports and so have encouraged inter-port competition, particularly for bulk cargoes. Greater competitive pressure on ports can be expected to heighten the incentives for ports to ensure that port services — including harbour towage — are provided competitively.

Reform of port authorities

During the 1990s, port authorities were subject to considerable structural reform (discussed further in chapter 5). Reforms of port authorities included corporatisation, commercialisation, restructuring, privatisation and the contracting out of some functions. These reforms were intended to generate greater focus by port authorities on commercial decision-making and performance. Reforms have been successful in creating a more commercial culture within ports, and seem likely to have increased the scope and incentives for ports to minimise costs of port services, including harbour towage.

Port performance has improved over the reform period. Port charges have been lowered and ship turnaround times have improved in most jurisdictions (PC 2002b, p. 187; PC 1998b, p. 266). As in the case of improvements to complementary port services, improvements in port performance can be expected to put pressure on towage operators to minimise charges and provide flexible and reliable services.

2 Five-port average rate.

4 The regulatory environment for harbour towage

This chapter describes the existing regulatory environment at Commonwealth, State and port authority levels. Most regulation of ports and towage is through the States and port authorities. In some ports, regulation of harbour towage is more prescriptive than in others. For example, towage guidelines and labour training requirements vary. In some cases, port authorities regulate prices and service levels of harbour towage by contract.

4.1 Commonwealth regulation

Regulation of the harbour towage industry at the Commonwealth level is generic rather than specifically intended for harbour towage. The *Prices Surveillance Act 1983* (PS Act) and the *Trade Practices Act 1974* (TP Act) establish the role of the ACCC in overseeing industry structure, market power and pricing in the Australian economy. Commonwealth regulation also provides a framework for the maintenance of some marine safety requirements.

Prices Surveillance Act 1983

The PS Act is the principal piece of Commonwealth legislation pertinent to this inquiry. It provides for the ACCC (and formerly the Prices Surveillance Authority (PSA)) to undertake prices oversight of companies, goods or services, as determined by the Minister. Three types of prices oversight are provided for by the PS Act:

- *monitoring* the prices, costs and profits of companies and government authorities in relation to specified goods and services;
- *public inquiries* into specified matters by the ACCC at the direction of the Minister; and
- *price notification (prices surveillance)*, whereby the Minister 'declares' that specified businesses are to notify the ACCC of a proposed price increase for specified goods and services. The ACCC is required to make a determination about the notified price increase within 21 days unless the company agrees to an

extension. The determination is not enforceable, but there is a penalty for increasing prices during the prescribed 21-day period without the ACCC's approval.

Declaration of harbour towage

Since 1991, harbour towage services at the ports of Melbourne, Sydney (Port Botany and Port Jackson), Newcastle, Brisbane, Fremantle and Adelaide have been declared services under the PS Act. The declaration has been extended twice and the current declaration is due to expire on 19 September 2002. Declaration resulted from an inquiry conducted in 1990 by the then PSA, which found that harbour towage services:

> … appear to meet the criteria outlined in the Treasurer's Second Reading Speech for declaration under the *Prices Surveillance Act 1983*. These criteria are the absence of effective competition and pervasiveness. (PSA 1990, p. 55)

The PSA's determination was supported by the finding that towage operators in the capital city ports were recouping above-average profits despite relatively low levels of risk and that:

> … at the port level, the supply of harbour towage services is naturally monopolistic. (PSA 1990, p. vii)

The PSA therefore recommended that the provision of towage services at certain ports be subject to prices surveillance. The original declaration was applied to ports at the capital cities (although not Hobart and Darwin) and to Newcastle, because of their size relative to other Australian ports.[1] It was considered at the time that the larger ports were more susceptible to monopolistic pricing behaviour by the incumbent towage providers than were the smaller regional ports. The PSA argued that, in smaller ports, shipping lines and ship owners could coordinate more effectively and exercise greater countervailing power than the large number of users at the larger ports. The PSA also stated at the time that in some ports:

> … port authorities protect shipping operators' interests by regulating the price of towage services. Port authority regulation mainly occurs in smaller ports ... (PSA 1990, p. vii)

Although declaration was limited to the larger ports, the PSA also recommended that towage prices in some regional ports be monitored. If the benefits of reform were found not to have been passed on to port users, then the PSA recommended

[1] Some 'regional' ports are larger than some declared ports in terms of towage demand. For example, in 2000-01, Dampier had the highest number of tug jobs and the second highest number of ship visits.

that these ports should also be declared for price notification. No action has been taken with regard to price notification of towage in regional ports under the PS Act.

A review of the declaration of harbour towage by the ACCC in 1995 found that although market power existed, the declaration should be revoked and price monitoring should be instituted in its place. The ACCC concluded that:

> … in most cases, harbour towage operators enjoy substantial market power and thus the criteria for the declarations to continue has been satisfied. Even so, the ACCC has considered the full range of regulatory options available to it and sees considerable merit in applying the new monitoring powers of the [PS Act] to sections of the market. This power was not available to the PSA in 1990 when the current declarations were recommended … the ACCC considers that the ability to regularly collect information from harbour towage operators, and to publish the findings, will provide an effective alternative to surveillance in this market … Unlike surveillance, which is only triggered when a declared person notifies the ACCC of a proposed price rise, monitoring will enable a continuing overview of whether the apparent scope for towage charges to be reduced is realised. (ACCC 1995, pp. xiv–xv)

However, at about the same time as the report was released, a round of mergers increased market concentration in the harbour towage industry. It seems likely that it was for this reason that the 1995 report's recommendations were not implemented and price notification was continued.

Compliance with PS Act determinations

As noted above, determinations made by the ACCC in response to notifications are not enforceable. The PS Act does not include powers of price control. Moral suasion through publicity and the possibility of an inquiry initiated by the Minister are the principal enforcement mechanisms under the PS Act.

The harbour towage industry has complied with ACCC determinations on proposed price increases in the majority of cases. For instance, in 1999 the ACCC opposed a proposal by Howard Smith Towage (Howard Smith) to increase prices by an average 17.5 per cent, but did not object to a 10 per cent increase; Howard Smith subsequently raised prices by only an average of 10 per cent.[2]

[2] As a condition of the ACCC's agreement to the merger between Adsteam and Hunter Towage Services at Newcastle, Adsteam agreed to freeze prices in the port for three years from June 1999, and to abide by the ACCC's determinations with respect to proposed price increases for as long as Adsteam's notification continued.

There have been two instances of non-compliance with ACCC determinations on notifications under the PS Act — both have involved harbour towage services and Adsteam Marine Limited (Adsteam):

- in 1998, Waratah Towage Pty Ltd (Waratah), a joint venture between Adsteam and Howard Smith, increased prices for towage services in Port Jackson by 15 per cent, contrary to the ACCC's objection to any price increase; and
- on 6 March 2002, Adsteam announced that it would proceed with price increases, notwithstanding the ACCC's objection to its application of 30 January.

Trade Practices Act 1974

The TP Act provides for the national implementation of competition policy. The TP Act applies to all industries, not just harbour towage. The TP Act is designed to:

> … enhance the welfare of Australians through the promotion of competition and fair trading and provision for consumer protection. (TP Act, s. 2)

The TP Act contains provisions for the prevention of misuse of market power.

- Part IIIA establishes a regulatory framework for access by third parties to facilities deemed essential and of national significance. Its goal is to facilitate competition in upstream or downstream markets by allowing potential competitors to access the facility. A facility may be 'declared' under Part IIIA and the service provider would then be required to negotiate access by would-be users, or access terms will be arbitrated.
- Part IV prohibits anti-competitive agreements, misuse of market power, and the creation of market power through mergers or acquisitions. For example, the ACCC, under the TP Act, opposed the merger of the two towage providers in Sydney's ports in 1996, Waratah and J. Fenwick and Co. Pty Ltd — but failed to prevent the merger. The ACCC did not oppose the merger of Adsteam and Howard Smith in May 2001. In the Howard Smith case, the ACCC considered that the two companies were conducting joint operations anyway, and that their merger would not unduly reduce competition in the Australian towage market. Nor did the ACCC oppose the merger of Waratah and Hunter Towage Services at Newcastle in 1999.

Australian Maritime Safety Authority

The Australian Maritime Safety Authority (AMSA) is a national body, established under the *Australian Maritime Safety Authority Act 1990* to enhance efficiency in

delivery of maritime safety and to prevent ship-sourced marine pollution. AMSA conducts search and rescue missions for vessels and aircraft, develops policy to protect the marine environment from ship-sourced pollution, assesses the seaworthiness of Australian vessels, assesses the skill level of crews, and ensures vessels operate with effective on-board and navigation safety procedures. AMSA collects fees from shipping in Australian waters to fund the provision of maritime safety initiatives and facilities. Towage operators, like other marine vessel operators, are subject to AMSA policy and often work with AMSA-provided marine navigation aids. In cases of marine emergency in Australian waters, AMSA coordinates recovery and environmental protection efforts.

4.2 State government prices oversight

Some States rely on Ministers and central agencies for a degree of prices oversight over port charges. In contrast, Victoria and South Australia have instituted price regulation of port services, sometimes including towage, by independent regulators as part of their port reform process — through which port management has, in some cases, been privatised.

Section 49 of the Victorian *Port Services Act 1995* (Port Services Act) provides for Victoria's ports to be regulated under the *Office of the Regulator-General Act 1994* (ORG Act). Victoria's Office of the Regulator-General (ORG) was an independent economic regulator, subsumed by the newly-created Essential Services Commission (ESC) on 1 January 2002. The *Essential Services Commission Act 2001* continues the price monitoring system established under the ORG Act.

Under the Port Services Act, Victorian ports form a 'regulated industry', subject to similar controls as those imposed on a 'declared industry' by the PS Act at the Commonwealth level. The statutory objectives of the ESC in relation to Victorian ports are: to protect the interests of users of port services by promoting efficiency in regulated industries; facilitate entry into the market; prevent the misuse of monopoly and market power; and ensure that users and consumers benefit from competition and efficiency (ORG Act, s. 7(1)). Harbour towage services in the ports of Geelong, Portland and Hastings are prescribed services under the Port Services Act. However, harbour towage at Melbourne is not a prescribed service under Victorian legislation because of the ACCC's prices oversight under the PS Act. Although the ESC cannot use the Port Services Act to enforce compliance with pricing directions, the ESC does have considerable enforcement powers under its own legislation.

State regulation of South Australian ports' charges, including stevedoring but not towage, is carried out by the South Australian Independent Industry Regulator (SAIIR) under the *Maritime Services (Access) Act 2000* and the *Independent Industry Regulator Act 1999*. The SAIIR sets price caps for port navigation charges, cargo handling charges, and berth and mooring charges — the caps are adjusted annually by the consumer price index, except the cargo handling charge for grain, which is fixed. The SAIIR also administers an access regime provided under the *Maritime Services (Access) Act 2000* for access to shipping channels, pilotage services, berths, bulk handling facilities and land. A range of other port services are monitored by the SAIIR to determine whether additional regulation is required.

Some States have a form of prices oversight over publicly-owned ports which is performed by central agencies such as Treasury departments on behalf of shareholder Ministers — typically the Treasurer and sometimes also the Minister for transport or infrastructure. Such monitoring may be related to legislated port authority goals, such as providing efficient services for the benefit of the community or efficient provision of community service obligations.

4.3 Towage guidelines

The level of tug use by ships arriving in, and departing from, a port is often subject to towage guidelines. These are developed through consultation between port authorities, harbour masters and pilots. Guidelines may be fixed minimum requirements which constrain pilots' decision making, or merely indicators of the number of tugs likely to be required. Some port authorities are relatively prescriptive and publish detailed towage requirements which vary according to vessel size, weather conditions and type of cargo. The Industry Commission (IC) found that:

> Pilotage and towage requirements and traditions can affect the attractiveness of one port compared with another. Although their impact is intended to be upon safety, overly restrictive or conservative requirements can impose significant economic cost. (IC 1993, p. 75)

Examples of some of the more prescriptive guidelines are in relation to Sydney and South Australian ports.

- In Port Jackson, the Sydney Harbour and Botany Bay Port Procedures Guide requires that a minimum of two 'A' class tugs must attend inward-bound tankers berthing at Gore Cove, and meet the tanker at Henry Head. Tankers requiring towage are defined as greater than 230 metres long, or more than 40 metres wide, or with displacement greater than 60 000 tonnes. Further, s. 8.10 of the

Guide prohibits a tug pushing or towing more than two 'lighters' or barges unless exempted by the harbour master.

- Flinders Ports Pty Ltd, which manages most mainland South Australian ports, publishes detailed minimum towage requirements for vessels manoeuvring in both Adelaide's inner and outer harbours. For example, in Adelaide's outer harbour, turning vessels up to 90 metres long must have one tug, vessels longer than 120 metres travelling in or out must have two tugs, and turning vessels longer than 206 metres require three tugs. Inner harbour requirements are similarly detailed. Flinders Ports Pty Ltd's minimum tug requirements incorporate a degree of flexibility:

  > Please note that the minimum tug requirement may be reduced following assessment of bow thrusters by pilots … Vessels with bow thrusters and regular calling vessels may have varying tug usage after assessment … Bow thrusters may replace tugs on regular calling vessels after assessment. Vessels over 183 metres with light ship drafts may use two 'Z' peller tugs in lieu of three tugs when turning. (Flinders Ports 2002)

At Melbourne and Geelong, Port Phillip Sea Pilots are not constrained by minimum requirements. Although guidelines exist and are published in the Operating Handbook for Geelong and Melbourne, pilots are free to use their judgement in determining required tug numbers, depending on a vessel's characteristics, its cargo, and prevailing weather conditions. Box 4.1 describes in more detail how tug numbers are determined.

Box 4.1 **Determining the number of tugs to be used**

Factors influencing a pilot's judgement, and the development of towage regulations, include prevailing weather conditions, manoeuvrability of the vessel, the experience of the pilot with the type of vessel, the cargo and the vessel's length. The rougher the weather conditions, the longer the vessel, the less room to manoeuvre, and the less experienced is the pilot with the type of vessel, the more tugs will be used. As weather conditions, vessel manoeuvrability and a pilot's experience with the type of vessel improve, so tug numbers decline, within the constraints imposed by inflexible port regulations where they exist — in some cases, towage regulations specifically allow for tug numbers to decline as pilots become more familiar with the type of vessel.

There is ongoing debate between shipping lines, shippers, pilots and port authorities on the number of tugs required for safe movements. Shipping lines and shippers claim that pilots routinely use more tugs than are necessary, increasing port costs. However, negotiations between vessel masters and pilots can vary greatly between individual port movements and a vessel's master may request an extra tug if, for example, they are unfamiliar with the port.

Sources: AMSA (2002b); Port operator towage regulations; VCA (2002a, b).

To meet towage requirements established by guidelines, or by pilots independently, towage providers are required to have available adequate tug numbers to handle the biggest ships visiting Australian ports, and to handle multiple tug jobs at one time. As Adsteam observed:

> … port authorities, harbour masters and pilots insist on having a fleet of tugs that is capable of assisting the largest and most cumbersome ship that is likely to arrive in their port — even if such ships arrive only infrequently. (sub. 15, p. 35)

4.4 Pilotage

Pilots guide large vessels within port waters by advising on vessel manoeuvring, tug numbers and positioning. They are usually mariners with command experience and with comprehensive port-specific knowledge and skills. Pilots take into account a wide range of factors when determining appropriate tug numbers. By determining the number of tugs to be used for a vessel, pilots in effect determine total towage costs per ship movement — subject to towage guidelines.

In nearly all Australian ports the use of a pilot is mandatory for large vessels.[3] In Victorian waters, the *Marine Act 1988* requires that vessels liable for pilotage must not be navigated within port waters unless it is under the direction of a pilot licensed by the Marine Board of Victoria. Similar pilotage regulation exists in other States. In New South Wales, part 6 of the *Marine Safety Act 1998* (MS Act) and part 5 of the *Ports Corporatisation and Waterways Management Act 1995* (PCWM Act) make pilotage compulsory for vessels greater than 30 metres in length unless specifically exempted. NSW pilot licences and exemption licences are conferred under the *Marine Pilotage Licensing Act 1971*. In Western Australia, it is the *Ports and Harbours Regulations*. In Queensland it is parts 6 and 8 of the *Transport Operations (Marine Safety) Act 1994*. In South Australia it is the *Harbors and Navigation Act 1993*. In Tasmania marine safety regulations are made under the *Marine and Safety Authority Act 1997*. In the Northern Territory it is part 7 of the *Marine Act*.

Pilotage is sometimes provided by the port authority or by private providers authorised by the port authority. In either case, vessels pay a fee for pilot services. For example, in Port Botany and Port Jackson pilotage fees for movements in and out of port range from $350 to $2560 (plus Goods and Services Tax).

Generally, only one pilot service operates in each Australian port. In the past, some State governments and port authorities have claimed that pilotage is a natural

[3] Vessels may be exempted from pilotage if their masters are given pilotage exemption certificates by the relevant authority.

monopoly due to economies of scale stemming from fixed costs of pilotage provision — the highest cost is claimed to be the launches and helicopters that transport pilots to vessels. However, the IC found that:

> … pilotage does not constitute a natural monopoly in larger ports … the major impediments to entry are regulatory. (IC 1993, p. 93)

The allocation of exclusive licences to pilotage providers is still common practice, but there are exceptions. In Melbourne, Geelong and Hastings the legislative barrier to entry has been withdrawn and there is a potential new entrant planning to compete with Port Phillip Pilots.

Responsibility for piloted vessels is not clear cut. When a vessel is in port waters it is the joint responsibility of the ship's master and the pilot to ensure that:

> … vessels under their direction are manoeuvred safely and to avail themselves of towage and launch services sufficient to manoeuvre the vessel under prevailing conditions. (VCA 2002a, p. 8)

However, the ship's master has an overriding responsibility for the vessel at all times:

> At no time does the pilot's authority exceed that of the ship's master; by tradition and by law, the master remains in command at all times and is accountable for the navigation of his vessel. (AMSA 2002b)

In some jurisdictions the overriding authority of the vessel's master and shared responsibility for a piloted vessel's safety is explicitly stated in legislation. In New South Wales:

> (1) A person who is employed as a pilot by the pilotage service provider … is subject to the authority of the master of the vessel. The master is not relieved from responsibility for the conduct and navigation of the vessel merely because the vessel is under pilotage.
>
> (2) The master and the owner of a vessel being navigated under circumstances in which pilotage is compulsory are jointly and severally liable for any loss or damage caused by the vessel or by any fault of navigation of the vessel in the same manner as if pilotage were not compulsory. (PCWM Act, s. 85)

4.5 Training and qualifications of tug crews

Australia's Unified Shipping Laws Code (the Code), administered by AMSA, specifies national training and qualifications requirements for the operation of commercial vessels. However, jurisdictions apply the Code to different extents, sometimes relying on State or Territory regulation instead. This creates inconsistency in tug crew qualification requirements across jurisdictions, causes

administrative complexity, and impedes towage providers in moving tugs and crew between States. According to Adsteam:

> Each State interprets the Code differently. As the Code deals with a wide range of issues including marine qualifications, training requirements, [and] crewing … the result is that there are a large number of requirements that differ between each jurisdiction. This impacts on the free flow of personnel and vessels across State borders. (sub. 15, p. 66)

The National Marine Safety Committee (established in 1997 by the Council of Australian Governments) is currently overseeing a project for the national adoption of the Code in its entirety, including uniform national standards for crewing and operator competencies.

There is also conflict between the Code and international conventions to which Australia is a signatory and which AMSA also administers. This creates particular difficulties for towage providers that wish to send tugs on open-water voyages. As Adsteam noted:

> Of particular concern, is the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, the STCW Convention. AMSA is obliged to implement the convention, however the relevant State authorities have not adopted its requirements. This has created a situation where State-issued Certificates of Competency are not valid for deep-sea voyages. It also means that the training requirements for seafarers has become extremely complex and costly because holders of AMSA certificates are required to revalidate to STCW standards, even when they may only trade in harbour or near coastal waters. (sub. 15, p. 66)

In addition to the Code and the STCW, AMSA may use the *Navigation Act 1912* to impose regulations upon tugs moving between jurisdictions.

4.6 Licensing and contracting of towage providers by port authorities

The relationship between a towage provider and port authority can take many forms. Some port authorities have licensed towage providers operating in their ports, and through that licence mechanism have sought to control many characteristics of towage services. Port authorities seem to value the ability that licences give them to specify certain standards of service from towage providers. Licence conditions may specify hours of operation, responsiveness, tug specifications such as bollard pull, provision of irregular services such as fire-fighting capacity, and price.

With regard to tug specifications, port operators may use licence conditions to enforce the use of certain types of tug. With regard to prices, contracts can provide effective prices control by the port authority by fixing towage prices for periods of time. For example, at Fremantle, licences with Adsteam and Total Marine Services Pty Ltd specify that prices are to remain fixed for two and a half years from June 2001. As a consequence, Adsteam's most recent price increases in the declared ports around Australia did not include the port of Fremantle.

Licences may be exclusive or non-exclusive. Non-exclusive licences confer a formal right to operate in a port, usually with some conditions as specified by the port authority. As the name suggests, non-exclusive licences allow for multiple service providers to operate within the port — there is no restriction on other providers competing for business, though new licensees would presumably have to agree to the same conditions as existing licensees. Four Australian ports have non-exclusive licences with towage providers — Cairns, Mackay, Fremantle and Kwinana. A further eight ports use contracts or service agreements which are not specifically exclusive but which attach service conditions to entry — Weipa, Newcastle, Geelong, Portland, Hastings, Dalrymple Bay, Port Kembla and Cockatoo Island.

Under an exclusive licence, the port authority bars rival towage providers from entering the port. Exclusive licences therefore preserve a monopoly for the incumbent towage provider for the duration of the contract. Six ports use exclusive towage licences — Albany, Bunbury, Geraldton, Gladstone, Bundaberg and Townsville.

Contract provisions of exclusive and non-exclusive licences may be identical with regard to service characteristics. Allocation of both types of contract is usually by competitive tender — Fremantle requested tenders for an exclusive or non-exclusive licence, or both, at the same time. Port operators have used tendering to attempt to capture competitive efficiencies from potential towage providers through serial competition.

Key features of the towage licensing arrangements and contracts in place at Bunbury and Fremantle are outlined in box 4.2. In table 4.1, each Australian port, the port authority, and the type of relationship that exists between the port authority and towage providers is listed.

Box 4.2 **Bunbury and Fremantle towage licences**

Bunbury's towage services are provided under an exclusive licence by Riverwijs Pty Ltd. The Bunbury licence stipulates that a 7-day, 24-hour service be provided by tugs with a minimum 45 tonnes of bollard pull, and that an additional tug be available within 8 hours. The Bunbury Port Authority noted:

> … towage is one of those items which the Bunbury Port Authority embarked on a few years ago to look at how it could actually manage towage services in the port better, how it could make sure that the services that were provided in the port in relation to towage were more responsive to customer needs, and also importantly were competitively priced. We had a number of concerns at the time, and after considering the options, the issuing of an exclusive licence was the option that the Bunbury Port Authority was of the view — gave the best outcome. (trans., p. 121)

Fremantle's non-exclusive licences specify standards for tug availability, reliability, safety and flexibility, and fix prices for two and a half years from June 2001. Fremantle's licences also include clauses to ensure continuity of service in the event of a change in providers in the future.

With regard to prices, issuing licences at Fremantle achieved around 15 per cent reductions from previous levels. The Fremantle Port Authority considered that, although the issue of non-exclusive licences has produced important benefits, there is scope for further improvement through tendering for exclusive licences in the future:

> Before licensing was introduced, Fremantle Ports had been greatly concerned that towage services were not meeting customer expectations in terms of reliability and prices … the issue of licences through a competitive tendering process has gone a long way towards redressing these concerns … Overall, Fremantle Ports believes that the introduction of serial competition through competitive tendering for exclusive licences has potential to offer long term solutions to making the towage services market as competitive as possible. (sub. 1, p. 2)

Sources: Bunbury Port Authority (trans., pp. 121–32), Fremantle Port Authority (sub. 1).

Table 4.1 **Towage arrangements by port**

Port	*Port operator*	*Towage arrangement*
New South Wales		
Newcastle	Newcastle Port Corporation	Open, PSA declaration and charter
Port Jackson	Sydney Ports Corporation	Open, PSA declaration
Port Botany	Sydney Ports Corporation	Open, PSA declaration
Port Kembla	Port Kembla Port Corporation	Open with service charter
Eden	Port of Eden	Open
Victoria		
Melbourne	Melbourne Port Corporation	Open, PSA declaration
Geelong	Toll Ports	Service charter
Portland	Port of Portland	Contract
Hastings	Toll Ports	Service agreement
Queensland		
Weipa	Comalco	Contract
Cairns	Cairns Port Authority	Non-exclusive licence
Mourilyan	Mourilyan Bulk Sugar Terminal	Open
Lucinda	Lucinda Bulk Sugar Terminal	Open
Townsville	Townsville Port Authority	Exclusive licence
Abbot Point	Abbot Point Bulk Coal	Port operator provides towage
Mackay	Mackay Port Authority	Non-exclusive licence
Hay Point	Hay Point Services (BHP)	Port operator provides towage
Dalrymple Bay	Dalrymple Bay Coal Terminal	Contract
Gladstone	Gladstone Port Authority	Exclusive licence
Bundaberg	Bundaberg Port Authority	Exclusive licence
Brisbane	Brisbane Port Corporation	Open, PSA declaration
Western Australia		
Esperance	Esperance Port Authority	Non-exclusive licence
Albany	Albany Port Authority	Exclusive licence
Bunbury	Bunbury Port Authority	Exclusive licence
Kwinana	Fremantle Port Authority	Non-exclusive licence
Geraldton	Geraldton Port Authority	Exclusive licence
Fremantle	Fremantle Port Authority	PSA declaration, non-exclusive licences
Cape Cuvier	Dampier Salt	Towage provided by port operator
Port Walcott	Robe River Iron Associates	Towage provided by port operator
Dampier	Dampier Port Authority	Port users provide towage
Port Hedland	Port Hedland Port Authority	Informal arrangement with BHP
Cockatoo Island	Portman	Contract with mine operator
South Australia		
Port Giles	Flinders Ports	Open
Adelaide	Flinders Ports	Open, PSA declaration
Port Pirie	Flinders Ports	Open
Ardrossan	Ausbulk	Open
Wallaroo	Flinders Ports	Open
Port Lincoln	Flinders Ports	Open
Whyalla	BHP	Open

(Continued on next page)

Table 4.1 **(continued)**

Port	*Port operator*	*Towage regulation*
South Australia (continued)		
Port Bonython	Santos	Open
Thevenard	Flinders Ports	Open
Port Stanvac	Mobil	Open
Tasmania		
Hobart	Hobart Ports Corporation	Open
Burnie	Burnie Port Corporation	Open
Devonport	Port of Devonport Corporation	Open
Port Latta	Hobart Ports Corporation	Open
Launceston	Port of Launceston	Open
Northern Territory		
Darwin	Darwin Port Corporation	Open
Gove	Nabalco	Towage provided by port operator
Groote Eylandt	GEMCO	Towage provided by port operator

Source: Adsteam (sub. 15, appendix A).

4.7 Port safety

Some elements of port safety regulation are consistent across States. The person or office with chief responsibility for safe shipping within port waters is the on-duty harbour master. Responsibility for individual vessels ultimately rests with their masters, though pilots share a professional duty of care for vessels under pilotage. However, jurisdictions vary in their legislative and administrative structures for the State-based regulation of licensing (for example, of masters, pilots and harbour masters), and maintenance of channels and navigation aids. Some jurisdictions have established independent authorities to supervise some or all of these activities.

Most Australian port authorities are responsible for maintaining their own shipping channels at appropriate depths by coordinating or supplying dredging services. Some States have other arrangements, such as maintenance by the department for transport or an independent channel provider.

Arrangements in New South Wales and Victoria serve as examples of the consistency between jurisdictions in the services provided through differing structures.

In New South Wales, s. 24 of the PCWM Act and the MS Act confer general responsibility for marine safety on the Minister. However, s. 27 of the PCWM Act allows for the Minister to delegate functions — the Minister has delegated to the NSW port corporations the general responsibility for safety within their ports. Part 4

of the PCWM Act creates the Waterways Authority, which issues licences, enforces safety requirements, and shares responsibility for maintaining navigation aids in NSW waterways, including ports. Marine safety licences, such as vessel registration, boat driving licences, and pilotage and pilotage exemption licences are conferred under Part 4 of the MS Act. The MS Act also controls such safety issues as navigation (Part 2), vessel operation under the influence of alcohol or drugs (Part 3), and the powers of harbour masters (Part 7).

Within Transport NSW (the NSW Department of Transport), the Marine Safety and Environmental Protection Group sets performance standards for the port authorities and the Waterways Authority. The Group is charged with ensuring:

> … appropriate mechanisms are in place so as to maintain high standards of marine safety and environmental protection in the trading ports and coastal waters of [New South Wales] ... (Transport NSW 2002)

In Victoria, Marine Safety Victoria (MSV), formerly the Marine Board of Victoria, is responsible for 'the maintenance of safe navigation in all State waters' (DoTF 1998, p. 26). Established under the *Marine Act 1988*, the MSV has regulatory powers over the activities of towage providers, which are subject to its regulations, as are any other users of Victorian waters. The MSV also sets training standards for, and licenses, harbour masters.

4.8 Other services

Mooring services

Mooring services involve securing vessels to docks and wharves by ropes or chains, sometimes requiring the use of launches to carry mooring ropes to shore. Mooring is a separate port activity performed by small labour gangs, and is sometimes provided by integrated firms that provide other port services, such as towage.

Significantly, mooring charges per ship visit and per container in Sydney are more than three times as expensive than in Melbourne (chapter 2). One difference between these ports in the provision of mooring services is that Sydney moorage is provided by a single operator, Stannard Brothers Launch Services (a subsidiary of Adsteam). In Melbourne, Ausport Marine and Skilled Maritime Services compete for mooring business. In addition, NSW mooring services are subject to prescriptive labour conditions. For example, Sydney Ports Corporation stated that, for container vessels over 25 000 gross registered tonnes, the relevant award requires ten persons with two launches for mooring and eight persons for unmooring (sub. 19, p. 12).

According to Adsteam, industrial constraints mean that:

> … arrival and departure times, type of ship, the particular berth, overtime hours and whether the day is a public holiday or on the weekend, are all factored into the pricing arrangements. (sub. 15, p. 9)

These labour arrangements result in mooring fees which vary according to award provisions with regard to overtime hours and other conditions.

Fire-fighting

Port authorities often require that towage providers be capable of providing appropriate equipment or services in case of fire-fighting emergencies. The provision of fire-fighting capacity varies from providing equipment and allowing fire services personnel to board tugs to combat port fires, to training tug staff themselves in fire-fighting. An additional fee is often payable to towage providers for the provision of standby emergency capacity. For example, at Sydney, approximately $15 000 is paid to Adsteam annually for the back-up services of one fire-fighting tug. At Melbourne the equivalent annual fee is approximately $10 000.

Salvage

Australia is a signatory to the International Convention on Salvage, administered by the International Maritime Organisation. The Convention:

> … aims to ensure that there are sufficient incentives for the maritime salvor to invest in modern salvage technology and to provide salvage services, to improve the efficiency of salvage operations, and to encourage salvors to protect the marine environment. (DFAT 1996, p. 1)

Australian waters are also subject to the National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances (the National Plan). The National Plan is managed by AMSA and includes salvage guidelines developed in consultation with industry. Under the National Plan, AMSA has a coordination role in marine emergencies, including a responsibility to alert salvage providers. At present, AMSA considers Adsteam to be Australia's principal salvage provider:

> Whilst Adsteam … remains Australia's only salvage company capable of salvage of large commercial ships, AMSA will alert Adsteam … when it becomes aware of a potential or actual marine casualty. Should in the future other salvage interests be able to offer a salvage capability in Australia covering merchant shipping then they will also be informed. (AMSA 2002a)

AMSA's powers in relation to salvage derive from the *Protection of the Sea (Powers of Intervention) Act 1981*. AMSA may direct a ship's master to accept the

services of a salvage provider, but where State legislation applies, the relevant State agency may direct the parties involved, in which case AMSA will assist and coordinate as required.

AMSA and the Association of Australian Ports and Marine Authorities have jointly called for a combined policy direction from Commonwealth and State governments and marine industry stakeholders with regard to salvage and places of refuge for stricken vessels. AMSA, in consultation with industry, is developing risk assessment guidelines for places of refuge. When complete, the guidelines will have implications for the National Plan.

5 Port authority governance

Port authorities are responsible for overall port management. Reforms during the 1990s substantially changed ports' governance arrangements, increasing their commercial focus and changing the environment in which the harbour towage industry operates.

5.1 Reforms of port authorities

In the 1990s, State and Territory Governments initiated reform of port authorities within the framework of the National Competition Policy. Under this policy, the Competition Principles Agreement requires Governments to apply competitive neutrality principles to significant government businesses, including structural reform of public monopolies to facilitate competition.

Reforms of port authorities included corporatisation, commercialisation, restructuring, privatisation and the contracting out of some functions. Structural reforms of port authorities also resulted in the restructuring of some entities and the devolution of regulatory functions to independent bodies. The primary aim of reforms was to replicate market disciplines, including the establishment of clear objectives to eliminate any conflict between commercial and non-commercial objectives. Greater emphasis was placed on the commercial role of port authorities to create incentives for efficient management.

Port authorities in New South Wales, Queensland, Tasmania and the Northern Territory have been corporatised.[1] These authorities are no longer responsible for regulation; community service obligations are identified and costed; and dividend and tax-equivalent regimes have been introduced (PC 1998b, p. 255). In Western Australia, the Fremantle and Bunbury port authorities were commercialised in 1996.

[1] Corporatisation can be implemented either through incorporation under the corporations law as a limited liability company, or as a statutory authority under its own legislation. The statutory option has been the most common approach for corporatising Australian port authorities. It is usually supported through the application of umbrella legislation which regulates some common aspects of a number of government trading enterprises. It allows for the government to customise the regulatory environment to include features not required under corporations legislation.

Subsequently, the *Port Authorities Act 1999* established all Western Australian State Government port authorities as commercialised entities.[2] Some port authorities have been privatised in Victoria (1996) and South Australia (2001).

The governance arrangements of the various port authorities across Australia are listed in table 5.1 and elaborated on in appendix D.

Table 5.1 **Reform in governance of port authorities**

Port	*Reform*	*Year*
New South Wales		
Sydney	Corporatised	1995
Newcastle	Corporatised	1995
Port Kembla	Corporatised	1995
Victoria		
Geelong	Privatised	1996
Portland	Privatised	1996
Hastings	Management contracted out	1996-97
Melbourne	Corporatised	1996
Queensland		
Ports Corporation Queensland (Hay Point, Abbot Point, Lucinda, Mourilyan, Cape Flattery, Weipa, Karumba, Thursday Island, Quintell Beach)	Corporatised	1994
Brisbane	Corporatised	1994
Gladstone	Corporatised	1994
Bundaberg	Corporatised	1995
Rockhampton	Corporatised	1995
Mackay	Corporatised	1995
Townsville	Corporatised	1995
Cairns	Corporatised	1995
South Australia		
SA Ports Corporation (Port Adelaide, Klein Point, Port Giles, Port Lincoln, Port Pirie, Thevenard, Wallaroo)	Privatised[a]	2001
Western Australia		
Fremantle	Commercialised	1996
Bunbury	Commercialised	1996
Albany	Commercialised	1999
Geraldton	Commercialised	1999
Port Hedland	Commercialised	1999

(Continued on next page)

2 The governance arrangements of Western Australian commercialised ports are essentially the same as those of corporatised ports in other States. The only difference is that the Western Australian ports are not incorporated under the corporations law but fall under the *Port Authorities Act 1999*, which contains major parts of the corporations law.

Table 5.1 **(continued)**

Port	*Reform*	*Year*
Western Australia (continued)		
Dampier	Commercialised	1999
Esperance	Commercialised	1999
Broome	Commercialised	2000
Tasmania		
Hobart	Corporatised	1997
Burnie	Corporatised	1997
Devonport	Corporatised	1997
Launceston	Corporatised	1997
Northern Territory		
Darwin	Corporatised	2001

a Managed by Flinders Ports Pty Ltd. SA Ports Corporation ports associated with Kangaroo Island were transferred to the Department for Transport, Urban Planning and the Arts.

Sources: Armitage (2001); *Darwin Port Corporation Act*; Department of Transport (2000); NCC (2001); PC (1998b); *Port Authorities Act 1999* (WA); Tull and Reveley (2000).

An important aspect of the reform process has been the trend for port authorities to adopt the 'landlord' model of operation, under which they undertake only core activities, with the more contestable waterfront services, such as stevedoring, supplied commercially.

Following corporatisation, the boards of port authorities generally have some autonomy in the day-to-day decisions regarding investment, revenues and expenses and commercial strategy. In exchange, the board and senior management are made more accountable, and to compensate for the absence of market-based sanctions, the performance of the port is usually monitored by State Government Treasuries or independent regulators (PC 1998b, p. 257).

Corporatised port authorities have greater control over their financial affairs, but remain subject to operational and financial constraints imposed by State and Territory Governments. They are invariably subject to some government directions on raising capital, undertaking investment and payment of dividends (PC 1998b, p. 257).

An overview of the main reforms is provided in table 5.2.

Table 5.2 **Reform initiatives affecting port authorities, 1991–2002**

Jurisdiction	*Date*	*Nature of reform or policy initiative*
New South Wales	1991-92	Closure of Balmain Coal Loader and Goat Island shipyard.
		Staff rationalisation and subsequent relocation of marine operations.
	1993-94	Closure of Sydney maintenance workshop and increase in contracting out of services.
		Waterfront construction and navigational aids businesses contracted out.
		Introduction of Maritime Services Board enterprise agreement.
	1995-96	The Maritime Services Board was dissolved on 30 June 1995. Sydney, Port Kembla, and Newcastle port corporations were established by Division 1 of the *Ports Corporatisation and Waterways Management Act 1995* and under the *State Owned Corporations Act 1989*. All marine regulatory and port policy functions were separated and brought under the Government's control. In addition, all boating-related functions were brought under a separate Waterways Authority.
	1996	A new capital structure for the port corporations was implemented based on commercial principles. As a result, New South Wales port corporations have better defined commercial objectives and are free to compete for business.
Victoria	1994	Reduction of port authority charges, including the abolition of the State tonnage duty and 15 per cent reduction in wharfage at the Port of Melbourne.
	1995	Legislation enacted to remove non-commercial community ports from the scope of port authorities and place them under the management of local committees, with separate budget funding.
		The *Port Services Act 1995* was passed by the Victorian Parliament. This facilitated, in early 1996, the disaggregation of the Port of Melbourne Authority into the Melbourne Port Corporation (MPC) and its subsidiary Melbourne Port Services, and the separate statutory authority, Victorian Channels Authority (VCA). MPC is responsible for land management at, and the future development of, the Port of Melbourne. The VCA operates harbour control in Port Phillip Bay and the ports of Melbourne and Geelong, and also ensures the maintenance of the shipping channels within Port Phillip and Corio Bays, Portland and Hastings.
	1996	Port of Portland sold to a private consortium comprising Infratil Australia Limited and Ascot Investment Pty Ltd (50 per cent each) for $30 million.
	1996	Port of Geelong sold to a private consortium consisting of TNT Australia Pty Ltd and Infrastructure Investment Corporation Ltd for $50.5 million.
	1996	The Victorian Government applied to the National Competition Council (NCC) to consider the effectiveness (under Part IIIA of the *Trade Practices Act 1974*) of its access regime for Victorian commercial shipping channels. This was the first access issue concerning the maritime industry considered by the NCC. Certification was granted in August 1997.

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Table 5.2 **(continued)**

Jurisdiction	*Date*	*Nature of reform or policy initiative*
Victoria (continued)	1997	Melbourne Port Services was sold to Skilled Engineering Ltd for $7.9 million plus 50 per cent of the net proceeds to be realised from the sale of the dredge *M V Vella*.
	1996-97	Port of Hastings management contracted out.
Queensland	1994	Brisbane Port Authority, Gladstone Port Authority and Ports Corporation of Queensland corporatised as part of the *Government Owned Corporations Act 1993*. The Act provides for a range of reforms, including direct funding of community service obligations and the payment of income tax-equivalents.
	1995	Cairns, Townsville, Mackay, Rockhampton and Bundaberg port authorities corporatised.
South Australia	1993	Reform of Marine and Harbors Agency's pricing policy.
	1994	Marine and Harbors Agency corporatised forming the South Australian Ports Corporation (SAPC).
	1994	Non-commercial and regulatory responsibilities were transferred from the SAPC to the Department of Transport.
	1994-95	Pricing reform undertaken with an increased focus on user-pays.
	1995	The SAPC was subject to an income tax-equivalent regime.
	1996	The *South Australian Ports (Bulk Handling Facilities) Act 1996* was established to provide an access regime for the sale of bulk handling facilities operated by the SAPC.
	2001	SAPC privatised. South Australia's seven commercial ports – Port Adelaide, Klein Point, Port Giles, Port Lincoln, Port Pirie, Thevenard and Wallaroo – are now managed by Flinders Ports Pty Ltd. Kangaroo Island-related ports of Kingscote, Penneshaw and Cape Jervis were transferred from SAPC to the Department for Transport, Urban Planning and the Arts.
Western Australia	1994	Fremantle Port Authority closed non-core Stevedoring Maintenance Unit.
	1995-96	The Government published a policy statement on the role of port authorities. Port authorities are seen primarily as trade facilitators operating with commercial disciplines to maximise the benefits to port users directly, and the Western Australian community broadly.
	1996	The Fremantle Port Authority was commercialised and subject to an income tax-equivalent regime. The Bunbury Port Authority was commercialised.
	1999	The *Port Authorities Act 1999* established eight government ports as commercialised entities.
	2000	Broome Port Authority established.
Tasmania	1993	Introduction of competitive neutrality principles to Tasmania's main port authorities requiring them to pay income tax-equivalents and guarantee fees on new borrowings.
	1997	Burnie Port Authority, Marine Board of Hobart, Port of Devonport Authority and the Marine Board of Launceston corporatised under the *Port Companies Act 1997*. The Act provides for a range of reforms, including the divestment of the ports' non-commercial activities. The reforms also provided for the establishment of the statutory authority Marine and Safety Tasmania, which assumed the functions of the Navigation and Survey Authority of Tasmania and regulatory activities formerly undertaken by the ports.

(Continued on next page)

Table 5.2 **(continued)**

Jurisdiction	*Date*	*Nature of reform or policy initiative*
Northern Territory	1995	Darwin Port Authority classified as a government business division under the *Financial Management Act 1995*.
	1996	The Authority was subject to an income tax-equivalent regime. Government-funded community service obligations provided by the Authority for the first time.
	1999	An expanded Commercial Charter and Mission Statement was adopted by the Darwin Port Authority. The charter highlighted the strategic intent, defined the core business and the core capabilities required for the commercial development of the Port of Darwin.
	2001	The Darwin Port Corporation was formally established under the *Darwin Port Corporation Act*.

Sources: Armitage (2001); *Darwin Port Corporation Act*; Department of Transport (2000); NCC (2001); PC (1998b); *Port Authorities Act 1999* (WA).

Improvements benefiting port users

Port charges

The Productivity Commission estimates that between 1990-91 and 2000-01, port authority charges[3] for containerised and bulk ships fell in real terms at the major ports for which data were available (table 5.3) (PC 2002b, p. 187).

Table 5.3 **Change in port authority charges per TEU exchanged and per tonne, 1990-91 to 2000-01**
Real prices[a]

Port	*Price per TEU exchanged (containerised ships)*	*Price per tonne (bulk ships)*
	%	%
Sydney	-53	-28
Melbourne	-62	-52
Brisbane	-24	na
Fremantle	-20	-23
Burnie	-17	-17

a The price per TEU exchanged (containerised ships) and price per tonne (bulk ships) was deflated by the relevant capital city All Groups CPI. Estimates employ a set of assumptions about ship and cargo size (for details, see PC 2002b). **na** Not available. **TEU** Twenty-foot equivalent unit; that is, a standard container measuring 20 feet by 8 feet by 8 feet.

Source: PC (2002b).

3 Port authority charges are those charges that are levied directly on ship and cargo owners for containerised and bulk freights. Indirect charges for ancillary marine (pilotage, towage and mooring) and stevedoring services are not included.

These price reductions reflect a range of factors, such as the increased commercial focus of port authorities and cost reductions over the period (including lower fixed costs per container due to increased cargo volumes). In some cases, the decline in real prices reflects ports' policy commitments to review and reduce prices over time. For example, the Sydney Port Corporation had a commitment to the NSW Government to reduce charges by 10 per cent over the two years following corporatisation (PC 1998b, p. 263).

In addition, most State Governments have now established independent prices oversight bodies as a part of their obligations under the National Competition Policy agreements. Victorian and South Australian ports have been declared for prices oversight. In Victoria, an average revenue cap administered by the then Office of the Regulator-General led to real annual price reductions for the Melbourne Port Corporation and Victorian Channels Authority over the period 1997-98 to 1999-2000 (PC 2002b, p. 192).

At the same time, port authorities progressively introduced consumption-based charging, resulting in charges that relate more closely to individual service requirements, rather than the value of cargo (PC 2002b, p. 192).

The overall cost faced by port users has also fallen in recent years. The Bureau of Transport and Regional Economics calculates the national port interface cost index, which gives an indication of the charges facing port users to import or export a representative container (one TEU). The index includes port services costs such as towage charges. In real terms,[4] the national port interface cost index charge per imported TEU declined by 17 per cent between 1993 and 2001, and the charge per exported TEU declined by 16 per cent (BTRE 2002, p. 12).

Ship turnaround time

The timeliness and reliability of the services provided by port authorities can be measured in part by ship turnaround time. Turnaround time is dependent on the performance of a number of port service providers, notably the port authority, pilot, towage operator and stevedore, as well as on the quantity of cargo exchanged (PC 1998b).

The average ship turnaround time at container terminals improved in most jurisdictions between 1991-92 and 1996-97, with Queensland being the main exception. For bulk operations, average median ship turnaround times in Queensland, South Australia and Western Australia remained relatively unchanged

4 Using ABS chain volume and current price statistics to calculate the deflator.

over the same period, while average times increased in New South Wales (PC 1998b, p. 266).

Other measures of performance

Labour productivity increased as a result of reform initiatives undertaken by the port authorities. The number of full-time equivalent staff employed by port authorities assessed by the Productivity Commission (PC) declined by 53 per cent between 1991-92 and 1996-97, while over the same period the volume of international cargo increased by 20 per cent (PC 1998b, p. 285). Much of the improvement in output per employee was driven by downsizing as a result of the transfer of non-core activities to the private sector or other government agencies.

The PC (1998b, p. 247) identified that average industry pre-tax operating profit of monitored port authorities increased by 83 per cent (63 per cent in real terms) over the period 1991-92 to 1996-97.

Port authority objectives

The incentives driving the behaviour of port authorities are important in achieving efficient outcomes in harbour towage and complementary port services. Adsteam observed that:

> Port authorities' interest in towage is related to their interest in making their ports safe and attractive to ship operators. The underlying driver appears (and is sometimes explicitly stated) to be a desire to increase the desirability of their port relative to all other ports or at least to ports that they consider to be their competitors. (Adsteam, sub. 15, p. 15)

Improvements in port performance may be expected to put pressure on towage operators to minimise charges and provide flexible and reliable services.

Table 5.4 outlines the legislative incentives established for publicly-owned port authorities by relevant State and Territory Acts. Publicly-owned and managed ports may not have such clear incentives as faced by private operators, which will be under pressure from owners to maximise profit. Legislative incentives for publicly-owned port authorities often attempt to mirror the commercial incentives faced by the private sector, but there may be some conflict in the legislative goals. Where there are no objectives for port authorities in the port-specific legislation under which the authorities are corporatised, the goals have been drawn from legislation outlining goals of all government-owned corporations in that jurisdiction.

According to the Association of Australian Ports and Marine Authorities:

> The Port Authority has a responsibility to, and works on behalf of, the whole port community to ensure that safety regulations are complied with, that the port generally operates efficiently and reliably, and that trade is facilitated as far as possible. Port Authorities have assumed a role as strategic managers covering all these activities. (sub. DR44, p. 1)

The incentives facing port authorities to implement mechanisms for providing efficient harbour towage are discussed further in chapter 8.

Table 5.4 **Legislated port authority objectives**

State	*Act*	*Objectives/Mission/Vision*
NSW	*Ports Corporatisation and Waterways Management Act 1995*, s. 9	'For each port corporation to be a successful business, to operate at least as efficiently as any comparable businesses, to maximise the net worth of the State's investment in the port corporation, to exhibit a sense of social responsibility by having regard to the interests of the community …, to promote and facilitate trade through its port facilities, and to ensure that its port safety functions are carried out properly.'
Vic	*Port Services Act 1995*, s. 12	'The objective of MPC is to carry on the business of being the land manager of the Melbourne port area by — (a) planning and co-ordinating the development of port land and infrastructure within that area; and (b) making that land and infrastructure available to port service providers — and to do so in a manner that is economically efficient and that encourages competition among port service providers.'
Qld	*Government Owned Corporations Act 1993*, s. 20	'Under corporatisation, the key objectives of a GOC [Government Owned Corporation] are to be commercially successful in the conduct of its activities and efficient in the delivery of its community service obligations. The commercial success and efficiency of a GOC are to be measured against its financial and non-financial performance targets.'
WA	*Port Authorities Act 1999*, s. 30	'To facilitate trade within and through the port, to undertake or arrange for activities that will encourage and facilitate the development of trade and commerce generally for the economic benefit of the State through the use of the port and related facilities, to control business and other activities in the port or in connection with the operation of the port, to be responsible for the safe and efficient operation of the port, to be responsible for the maintenance and preservation of vested property held by it, to protect the environment of the port and to minimise the impact of port activities on that environment.'
SA		Privatised.
Tas	*Port Companies Act 1997*, s. 7	'To facilitate trade for the benefit of Tasmania and to operate activities in accordance with sound commercial practice.'
NT	*Darwin Port Corporation Act*, s. 17A	'Subject to this Act and within a budget approved by the Minister, the Port Corporation is to act in a commercial manner.'

6 Market power in harbour towage and related services

The terms of reference (5c) require the Commission to report on 'whether there is a continuing need for prices oversight of certain harbour towage services and, if so, the most effective forms of price oversight'. A threshold issue in assessing the need for price regulation is the extent of market power held and used by providers of harbour towage services in Australian ports. This issue is examined in this chapter.

6.1 Introduction

Market power is the ability of a producer to *sustain* prices above efficient levels. If market power is used, it will be reflected in long-run inefficient cost levels or poor service quality and/or above-normal rates of return. The potential market power possessed by a producer will depend on the extent of competition from current providers in the market and/or by the pressure of potential entrants for a market, as well as the price sensitivity of demand for the product. If competitive forces (from current or potential providers) are not providing appropriate disciplines on the behaviour of towage operators, then the possibility of regulation needs to be considered.

Section 6.2 considers the extent of competition in the supply of harbour towage and section 6.3 examines other factors (particularly demand conditions) that influence the market power of towage operators. Section 6.4 examines available information that may indicate the actual use of market power. Section 6.5 briefly considers market power issues for the related services of mooring lines, lines launches, fire-fighting services and salvage.

6.2 Competition in the supply of harbour towage services

For firms providing harbour towage in a particular port or group of ports, competitive pressure could come from other towage suppliers currently operating in the port and/or the threat of new entrants to the port.

Is harbour towage a natural monopoly?

An industry is considered a natural monopoly in a particular locality if the efficient, least (average) cost of production at existing demand levels is achieved by having a single producer.[1] Typically, natural monopoly will be accompanied by spare capacity and marginal cost much lower than average cost. However, as discussed below, natural monopoly does not necessarily mean that the market is not contestable or that the incumbent operator has monopoly power.

While most Australian ports currently have two or more tugs,[2] single-firm operation has predominated.[3] This reflects various advantages of multi-tug operations. The Prices Surveillance Authority (PSA) noted:

> Shipping lines and agents usually favour a single operator where jobs require a number of tugs. Multi-tug operators also have cost advantages over their single tug counterparts in being able to spread utilisation, crews, maintenance and administration costs over a fleet rather than a single vessel. Multi-tug operators also benefit from operating vessels of different sizes as this enables better matching of tug capacities with the requirements of tug jobs. However, while visits by large ships and fluctuations in towage demand may necessitate a number of tugs in ports, the low utilisation of tugs indicates that in most ports, demand can only support one operator. (PSA 1990, p. 8)

At that time, 46 of 49 ports with tugs had a single operator or joint venture. At present, nearly all Australian ports have a single tug operator, only a few of which are joint ventures. In the declared ports, all towage services are now provided by Adsteam Marine Limited and its subsidiaries (Adsteam), with the exception of limited services provided at Fremantle by Total Marine Services.[4] The conditions under which such apparent natural monopolies are likely to be maintained are set out in box 6.1, and are then examined in turn in relation to the towage industry.

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1 In general, such cost conditions will result in a single producer although there may be periods (sometimes prolonged) of competition for the market, which often end with one party taking over the other.

2 Of the 51 Australian ports where towage services are currently provided, there are only nine where only one tug is stationed.

3 This has not always been the case. In 1960, there were 12 tugs and four operators in the Port of Melbourne, but this had condensed into one joint venture by 1973 (PSA 1990).

4 Fremantle Port Authority (sub. 1, p. 2) indicated that Total Marine Services 'only provides one or two services a week to small vessels and does not offer any real competition to the Adsteam subsidiaries'. There are also two other towage providers in the outer harbour (Kwinana) but likewise they do not provide harbour towage services which can compete with Adsteam. Nonetheless, the presence of an alternative operator with the potential to expand could place some constraints on the incumbent's behaviour.

Box 6.1 **Conditions for the existence of natural monopoly**

A natural monopoly is said to exist if, given the demand for a good, service or facility, one firm can produce a given set of outputs at a lower cost than can two or more firms.

The basic conditions for natural monopoly generally relate to the nature of costs and investment — such as the 'lumpiness' of investment, economies of scale, sunk costs and, in multi-product industries, economies of scope.

- Investment is said to be *indivisible*, or lumpy, when it can be undertaken economically only in large increments.
- *Economies of scale* occur when average costs decline as output increases, hence one producer can supply the market at a lower cost than two.
- *Sunk costs* are costs that, once made, cannot be recouped. Large sunk costs tend to give the existing incumbent a 'first-mover' advantage.
- *Economies of scope* exist if it is less costly to have one firm supply a number of products or services than to have each service provided by a different firm. Hence, it is more efficient to have only one supplier of the relevant products.

A reasonable rule of thumb is that natural monopoly is more likely where fixed costs are large relative to marginal costs (implying high average costs compared with marginal costs) (King 2000).

Sources: Baumol, Panzar and Willig (1982); King (2000).

Indivisible investment

The vast majority of Australian ports currently have two or more tugs, with the declared ports having from four to seven tugs.[5] Hence, on a single tug basis, investment in these ports appears divisible. However, as the number of tugs currently operating in each port seems to represent the minimum economic fleet size — the minimum economic investment requirement is not a single tug but the group of tugs required to service ships visiting particular ports.

User requirements are particularly important in determining minimum fleet size and availability for any tug operator. The cost of largely idle additional tug capacity is small compared to the costs of delays caused by waiting for tugs. The Association of Australian Ports and Marine Authorities (AAPMA) (sub. 4) cites ship running costs of $20 000 to $30 000 per day which ship owners can trade off against higher towage charges needed to justify provision of a faster service. Hence, many users prefer 24-hour services with short call-out times, even though this means

5 With the entry of Australian Maritime Services into the Melbourne market there are now seven tugs in the Port of Melbourne.

significantly increasing the idle time of tugs and their crews and hence the cost of providing towage services. Over the last decade, in response to user demands, there has been an increase in the number of ports at which towage services are provided at any time on short notice.

In addition, port authorities and ship owners will be concerned to avoid shipping channels being blocked or port facilities being damaged due to insufficient tugs being used. Unnecessary delays to ships will decrease the port's attractiveness while damage to port facilities may lead to significant loss of port revenue. Hence many port authorities (in conjunction with pilots)[6] impose minimum towage requirements (chapter 4). The minimum tug fleet required for any operator to meet these user and port requirements means that, at current demand levels, only one provider is feasible in the long term, given the idle capacity these requirements generate.

Gans and King (Adsteam, sub. 15, report 1, p. 16) argue that port authorities are likely to over-specify quality standards and in particular insist that towage operators have too many tugs. Port authorities clearly have a legitimate interest in setting standards for towage in order to avoid under-utilisation of tugs which might unreasonably increase the likelihood of accidents. However, if port authorities and/or pilots require too many tugs for some or all jobs they would be placing unnecessary impediments to operators setting up on a smaller scale. This would accentuate the tendency towards single-firm provision of harbour towage as minimum tug requirements for certain classes of ships will tend to determine the minimum requirement for new entry.

On occasions, port authorities have tried to encourage provision of towage services by two firms. When Hunter Towage Services (HTS) entered the Newcastle market in 1994, the port authority sought to facilitate a lower number of tugs per firm, thereby increasing the likelihood of two firms surviving, by encouraging the sharing of a fourth tug per firm only required at peak periods or for more difficult jobs. However, the incumbent operator would not participate and the scheme was not successful.

Economies of scale

At the level of tug jobs prevailing in nearly all Australian ports, there is significant spare capacity. There is planned extra capacity in order to reduce the possibility of

6 Pilots, to the extent that they are liable for the costs of accidents, also have incentives to avoid under-utilisation of tugs — indeed, given the limited competition in pilotage, they are likely to be somewhat risk averse and tend to order more than the optimal number of tugs.

ships being delayed, but this then leaves scope at most ports for increases in tug jobs to be handled at lower cost by the existing fleet than by a new operator.

Many participants have argued that single-firm provision will predominate in individual Australian ports. AAPMA stated:

> We contend that individual ports in Australia are too small in terms of vessel movements to sustainably allow a second operator. (sub. DR44, p. 7)

Dale Cole & Associates (sub. 9, p. 9) suggested that where there were fewer than 8000 tug jobs annually, harbour towage was likely to be a natural monopoly. When Singapore, with 84 000 tug jobs annually, moved to licensing tug operators it restricted the number of licences at the time to six. Of the busier declared ports in 2000-01, Newcastle had around 7000 tug jobs, Brisbane nearly 6000 and Melbourne 4250 (chapter 2, table 2.4).

Several studies of harbour towage have also concluded that in most if not all Australian ports there is room for only one provider of towage (BTCE 1989; PSA 1990; ACCC 1995). While there may be short-term competition for the market, economies of scale mean that only one provider is likely to remain in the long term.

However, some participants have suggested that in the larger Australian ports it may be possible to sustain two operators — implying that available scale economies for a single operator may have been exhausted. Adsteam (sub. 15), although noting the natural monopoly characteristics of towage at most ports, also suggested (sub. DR43) that towage markets may not be natural monopolies at larger ports. The National Bulk Commodities Group (NBCG) considered that it was possible to have two tug operators at the ports of Melbourne and Sydney:

> The demand task ranges from the possibility that the two largest ports (Sydney and Melbourne) may be able to sustain direct competition by two or more towage service operators with most ports only able to sustain one towage service operator for optimal service outcomes. In some of the regional and remote ports it may be problematical for the demand to sustain a full time commercial presence with the assets only being required for a limited period on an irregular basis. (sub. 11, p. 6)

The commencement of towage operations in May 2002 by Australian Maritime Services (AMS) in competition with Adsteam in the Port of Melbourne, and its proposals to begin operations in competition with Adsteam in Sydney, Brisbane and Fremantle over the next year, give some qualified support to the view that towage may not be a natural monopoly in these ports. However, it is not clear whether two providers will be sustainable in the longer term — the new entrant may consider that it can provide services more efficiently than Adsteam and hence can overcome any entry barriers and eventually drive out the incumbent. The entry of BHP

Transport in conjunction with four Japanese shipping operators (HTS) into towage at Newcastle lasted less than five years, during which time both it and the incumbent appear to have made losses, before Adsteam purchased HTS in 1999.

In the past, two separate operators provided towage in a number of major Australian ports but co-operated (with Trade Practices Commission approval) in undertaking jobs requiring a larger than normal number of tugs. However, the strength of competition in the market in such an environment was questionable. The ACCC (1995, p. 42) argued that 'the history of market conduct demonstrates that there is little evidence of open rivalry even in ports where there are two operators'.

Sunk costs

Unlike many services which exhibit natural monopoly characteristics (such as electricity transmission and gas pipelines), harbour towage, although reasonably capital intensive, does not appear to involve large sunk costs because capital is mobile. Sunk costs are discussed further below in the context of entry barriers.

Economies of scope

At the individual port level, the main economies of scope in harbour towage are the simultaneous provision of salvage and fire-fighting services. At ports where such important services are required, only one provider is likely to be needed given the limited requirements for them.

Natural monopoly at groups of ports

There are several geographic levels at which the possibility of natural monopoly in towage can be considered. At the single port level, the one provider model has been the norm at nearly all Australian ports for a number of years. It is at this level that the productive efficiency benefits of a single operator are clearest. However, given the low volume of tug work at individual Australian ports, economies of scale and scope may not be exhausted at the single port level.

There are also some potential cost savings from having a single operator of towage services at certain groupings of ports, particularly proximate ports. For example, a single company (North Western Shipping & Towage) is the sole towage operator at all Tasmanian ports, having taken over the previous operator, Brambles Marine. For the proximate northern ports this offers savings in sharing of tugs and crews between ports. Similar advantages apply to the ports of Melbourne, Geelong and

Hastings and to some South Australian ports.[7] A single common towage operator may also be the least-cost option at ports with strong complementary seasonal patterns such as in northern Queensland.

It is not so clear that significant cost advantages exist for one firm providing towage at all of the geographically-dispersed declared ports as a group. Nonetheless, NBCG argued:

> Any new entrant in direct competition within a port with sufficient demand would face commercial pressures to win market share unless the new entrant was in a position to provide towage services at other port calls for the same customer. That is the competition on price within one port may be insufficient to attract customers that may be offered volume and loyalty incentives arising from economies of scope of the dominant operator. (sub. 11, p. 7)

The fact that Adsteam currently provides rebates (albeit apparently modest) to major users in the declared container ports, may reflect cost savings from having a single operator at these various ports.[8] Adsteam indicated (sub. 15, p. 6) that large users had complained that common charges meant that they were underpinning the fixed costs of towage to the benefit of less-frequent users. Alternatively, these rebates also could be designed to make new entry on a single port basis more difficult (AAPMA, sub. 4, p. 17). This issue is discussed further below.

If Adsteam (the incumbent) were producing at efficient cost levels, the large number of expressions of interest for the licence to operate towage services at Fremantle suggests that any cost advantage from operating at all declared ports is relatively small.[9] If natural monopoly characteristics were absent across the declared ports as a group, entry on a single-port basis would then be more feasible, which would increase the pressure on the incumbent. To the extent that total firm (rather than Australian-specific) towage volume allows spreading of costs, the

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7 Adsteam (sub. 15, pp. 54–5) suggests that the existence of proximate ports may permit competing multiple operators even though demand levels in any one port would lead to a natural monopoly.

8 Adsteam indicated (sub. 15, p. 6) that its rebates had reduced its annual national revenue by around $6 million. Based on Adsteam data (sub. DR43, p. 11), the Commission has estimated total industry annual revenue to be $200 million. The Commission estimates that Adsteam has approximately 70 per cent of national tug jobs, suggesting Adsteam's share of industry revenue is in the order of $140 million. On this basis, the rebates to large users would represent a little over 4 per cent of Adsteam's Australian towage revenue.

9 If such benefits were large, other tenderers would be at a significant disadvantage compared to Adsteam and would not be expected to be competitive in a tender for towage at a single port. On the other hand, if Adsteam were operating above cost levels achievable by new entrants, there would be scope for other tenderers to undercut its prices even if there were cost advantages of a single operator across all the declared ports.

emergence of various international towage operators in different Australian ports is also a possible outcome.

At the Australia-wide level, net savings from a single entity providing towage are more problematic. National dominance would provide enhanced possibilities for moving tugs between ports to reflect port requirements and there may be some savings in spreading development and administrative costs. But there may also be costs associated with a large firm, and smaller firms or firms with particular specialities may be the most efficient for some ports (for example, by developing a better understanding of individual customers' needs). Hence it seems unlikely that efficiency considerations would lead to a single firm being the sole towage provider in every Australian port.

There could also be cost advantages of a towage operator having an international presence. The costs of a firm developing high levels of expertise in towage can be spread over greater volumes if a firm has international operations. This is particularly relevant for firms operating in the small Australian market. Riverside Marine (2002) noted that one of Riverwijs' shareholders (Wijsmuller) had acquired Cory Towage, which it claimed was recognised as having world-class quality management systems and this expertise was now available to its Australian companies. Similarly, large shipping lines operate in ports in many countries and there may be advantages in developing towage relationships at an international level.

FINDING 6.1

Most if not all Australian ports can efficiently support only one towage service provider in the longer term. There are cost advantages for a single common operator across some regional groupings of ports. However, natural monopoly characteristics do not extend to one operator providing towage at all ports in Australia or even at all of the major container ports.

Contestability in the harbour towage market

The existence of natural monopoly does not automatically imply complete absence of competitive pressure. While there seems little prospect, given current and immediately-foreseeable demand patterns and shipping and towage technology, for more than one towage operator to be maintained at most ports, effective competition can still come from the threat of other providers entering the market if the incumbent operator sets prices too high or provides inappropriate quality of service. The extent to which such competition for the towage market (or contestability) at a particular port restrains the behaviour of an incumbent operator will depend on the

barriers to entry to the relevant market (box 6.2).

Box 6.2 **Natural monopoly and market contestability**

Though high fixed costs (and thus average costs well above marginal costs) may lead to natural monopoly, it does not necessarily follow that the incumbent firm will earn excess profits. This will depend on the significance of barriers to entry — that is, the size of any cost disadvantage of new entrants, relative to the incumbent.

Potential entry barriers include:

- *Sunk costs incurred by an entrant*. The potential entrant must weigh these costs against the expected pay-off from entering. From the point of view of a potential entrant, the more significant the amount of immovable, industry-specific investment required to establish operations, the higher the potential sunk costs if entry is unsuccessful, and the higher the risk of investment. Exit costs effectively become an entry barrier. Though the incumbent will have incurred similar costs when entering the market, the incumbent's sunk investments send a signal to the entrant that the incumbent is committed to stay, and will engage in strategies to do so.
- *Absolute costs advantages enjoyed by the incumbent*, for example, through patents or 'learning by doing'.
- *Arrangements by the incumbent that 'lock in' customers or suppliers*, thus decreasing the likelihood that the entrant will achieve a profitable scale of operation.
- *Regulation* that blocks entry or imposes higher costs on a potential entrant than the incumbent.

The lower these barriers, the less scope will the incumbent 'natural monopolist' have to maintain prices above (average or break-even) costs. If there are no barriers to entry (for example, because capital can be moved without cost to alternative uses), then the monopolist will not earn any excess profits.

While such 'perfect' contestability (or, for that matter, 'perfect' competition) is not the norm, if capital and labour are reasonably mobile and not highly specific to a particular market, if production technology is widely available, and if regulatory barriers are low, then an incumbent will not be able to earn monopoly profits without encouraging entry.

Barriers to entry

Barriers to entry are factors that increase the costs of new entrants above those of existing producers, or which frustrate new entrants in other ways (for example, regulations restricting entry). In the absence of entry barriers, the mere threat of new entry would elicit competitive performance from an incumbent with a natural monopoly. Participants have presented a variety of views on entry barriers, with a number arguing that they are significant while others considered that barriers were only modest (box 6.3).

Box 6.3 **Views on entry barriers**

Numerous earlier studies of harbour towage in Australia, and participants to this inquiry, have provided a wide range of views on the nature and size of barriers to entry.

Dale Cole & Associates implied a reluctance of firms to enter towage markets at major ports:

> There have been a number of studies, by recognised international towage operators, to ascertain the feasibility of contestable entry into Australia's busiest ports. The outcome of these studies show:
>
> - Contestable entry at any of the four busiest Australian ports is commercially marginal at best;
> - In the event contestable entry became a reality, then one of the towage operators would be forced to exit the market within two years. (sub. 9, p. 5)

The ACCC concluded that:

> Barriers to entry into the towage industry are high and arise from economies of scale and vertical integration, capital and sunk costs and low utilisation of minimum capital in the industry. Towage operators are largely insulated from potential competition because entry into the market is limited by the size of the market and the capital requirement for large tugs. (ACCC 1995, p. 46)

Shipping Australia Limited (SAL, sub. 6, p. 9) indicated that it understood that the costs of entry (and exit) would be relatively high, while the Association of Australian Ports and Marine Authorities (AAPMA, sub. 4, p. 14) accepted and further amplified the ACCC's findings. Both SAL (sub. DR34) and AAPMA (sub. DR44) maintained the view that contestability of the towage market was weak, particularly because of Adsteam Marine Limited's (Adsteam's) dominant position in the Australian market allowing it to offer loyalty rebates across ports. The Sea Freight Council of Western Australia (sub. 8, p. 4) submitted that 'one of the most significant impediments to increased competition in the towage industry appears to be the high 'entry cost' which new service providers encounter'.

However, there are alternative views. Melbourne Port Corporation argued:

> There would be significant barriers to entry for an alternative service provider, but indications are that these may not be insurmountable. Certainly, the recent increases implemented by Adsteam would be encouraging for any prospective new entrant, and recent announcements indicate that this may happen shortly. (sub. 7, p. 4)

A new operator has now entered the Melbourne towage market.

Adsteam (sub. 15) argued that although towage was a high fixed-cost industry it was not a high sunk-cost industry. It considered that '… barriers to entry are, while not insignificant, not large' (trans., p. 151).

The Australian Institute of Marine and Power Engineers (sub. 14, p. 5) cited a number of instances of entry into harbour towage over the last decade as an indicator of low entry barriers, though few of these involved direct competition with an incumbent.

It is important to recognise that not all *costs* of entry represent *barriers* for new entrants. For example, in the case of towage, in the event of the failure of a new entrant, some of the cost of purchasing new tugs will be able to be recouped by selling them on the second-hand market. Hence, while a large investment (relative to annual output) may be required to enter the towage market, only a portion of that investment may be sunk or lost if a new entrant is not successful.

Sunk costs

Sunk costs are expenditure incurred by an entrant that would not be recovered if the entrant eventually withdrew from the market. In markets where towage seems to be a natural monopoly, and hence where only one operator is likely to survive, entrants may consider there is a reasonably high chance of failure.[10] In harbour towage, sunk costs may include the costs of:

- establishing operations;
- hiring and training crews;
- developing a customer base;
- transporting tugs (purchased or leased) to and from the port;
- the difference between the purchase and sale price of tugs; and
- redundancy packages payable on exit.

The exact size of many of these costs will not be known to the entrant at the time of entry — only after exit would the precise amount of sunk costs be determinable.

The extent of sunk costs in harbour towage has elicited a range of views in this inquiry and previous studies. Price regulators have argued that sunk costs in entering harbour towage in Australia are particularly high. The ACCC (1995, p. 43) argued that entry costs were high and much of these could not be recouped on exit due partly to the limited Australian market for second-hand tugs. The PSA (1990) considered that, on exiting, firms would have to meet redundancy payments, suffer losses of administrative, marketing, hiring and training costs and would not recover the full purchase price of their tugs.

An earlier study by the Bureau of Transportation and Communications Economics (BTCE 1989, p. 54) was more circumspect, concluding that there would be some sunk costs for new entrants but that there were opportunities for recovering a share

[10] There is the possibility that, depending on the extent of its success, the new entrant will at least be bought out by the incumbent, hence limiting losses on exit. This was the situation in Newcastle when the incumbent purchased the new entrant after over four years of competition.

of investment in tugs. Similarly, the Industry Commission (1993) noted that while entry costs were not insignificant, the mobility of tugs meant that sunk costs were diminished.

Melbourne Port Corporation observed:

> The cost of deploying new tugs is the major start-up cost and therefore potentially a barrier to entry. Opinions appear to differ on the market for second hand tugs, critically affecting the life-cycle costs to be factored in to a new towage enterprise. Of course there is also investment in shore facilities, trained staff, specialised equipment, administrative and communications systems that may not be readily redeployed and would comprise an anticipated cost of terminating the business. (sub. 7, p. 4)

Tugs are a highly mobile asset but there has been some debate concerning the likely losses on sale of tugs on exiting a towage market. In regard to its examination of Adsteam's 2002 price notifications, the ACCC indicated:

> The ACCC was informed during the course of the recent towage notification that those entry and exit costs to harbour towage markets were high due to an imperfect international second hand and charter market for tugs. The international second hand/towage charter market is very specialised and very small. (sub. 21, p. 6)

It argued that because of this thin market, prices can fall sharply if a company is forced to sell tugs. Shipping Australia Limited (SAL, sub. 22, p. 7) indicated that the Australian second-hand market was insignificant, hence requiring a sale overseas. However, it considered that tugs generally held their price.

Ergas (2001) argued that sunk costs in harbour towage are small and that the capital costs of tugs is not a material entry barrier because of the ready market for second-hand tugs. Adsteam also submitted that there was a strong market for second-hand tugs:

> Given the large number of ports throughout the world requiring towage services, together with the very significant and ever-changing tug population, the market for second-hand tugs is an active one. (sub. 15, p. 32)

While the Australian market in second-hand tugs generally will be small and prices possibly volatile from year to year, there is a world market that can be accessed by a seller for the cost of transporting tugs to the point of sale and the costs of the sale process.[11] This would limit the extent of expected losses on sale.

There appears to be a reasonably large second-hand market for tugs into which an exiting firm could sell its tugs. However, few spare second-hand tugs are located in Australia and hence transport costs to the point of sale would be incurred. One ship

[11] Adsteam indicated that selling agent's commission on the sale of tugs would be in the vicinity of 2.5 to 5 per cent of the sale price (Adsteam, pers. comm., 20 May 2002).

broker lists around 500 tugs for sale, of which 117 were built in the last ten years (however, not all are harbour tugs) (Marcon 2002). Table 6.1 lists some tugs currently advertised for sale through Western Offshore Technology (Wotech), an Australian shipbroking company.

Table 6.1 **Selected harbour tug boats for sale, May 2002**

Year built	*Bollard pull*	*Technology*	*Price (US$m)*	*Details*
2002	55	Voith Schneider	5.3	Inc. fire-fighting
2001	41	Azimuthing	3.5	Multi-role ASD tug
2001	45	Azimuthing	3.1	na
2000	na	Aquamaster	2.4	Harbour tug
2000	60	Azimuthing	5.0	Multi-role ASD tug
2000	57	Azimuthing	3.8	Fifi stern drive Schottel tug
2000	42	Twin screw	2.5	na
1998	50	Duck peller	2.5	Harbour tug
1996	51	Schottel	2.5	na
1991	50	Azimuthing	1.9	Harbour tug
1989	na	Azimuthing	1.6	Harbour tug
1989	45	CP	2.2	Inc. fire-fighting
1983	75	Triple screw	3.0	na
1982	50	Azimuthing	1.0	ASD harbour tug
1979	44	Azimuthing	0.7	Harbour/coastal/salvage tug
1974	55	Duck peller	0.7	ASD harbour tug
1973	36	Duck peller	0.4	Harbour tug

na Not available. **ASD** Azimuth Stern Drive.

Source: Wotech (2002).

According to one source, the current tug market is 'soft' and sale prices average around 75 per cent of the asking price (Marcon 2002). There is a wide variety of tugs available — reflecting different sizes, technologies, ages and uses. The tugs listed in table 6.1 are located around the world, with many in South-East Asia.

The value of any special modifications required for Australian ports is likely to be lost on resale, although to the extent such features provide cost or service advantages over an incumbent they may increase the chance of successful entry. The ACCC (1995) considered that international variations in tug specifications meant that there would be significant losses on sale of tugs built for Australian conditions. Economic Associates noted that a submission to the National Competition Policy review of harbour towage provisions of the *Transport Infrastructure Act 1994* (Queensland) indicated that:

> … costs of around $500 000 could be incurred to bring a foreign-sourced tug up to Australian standards, an investment which would not be recoverable if the vessel was re-sold on the international market. (Economic Associates 2001, p. 23)

However, Adsteam has indicated that, while tugs built in Asia over ten years ago would require substantial modifications to meet Australian requirements, more modern tugs require little if any alterations to operate in Australia (Adsteam, pers. comm., 20 May 2002; sub. 23, p. 5).

SAL (sub. 22, p. 7) suggested an allowance of $50 000 per tug for modifying an overseas second-hand tug for Australian conditions, and confirmed this (trans., p. 33) as an 'average cost' of converting an overseas tug into a tug suitable for Australian ports.

There will also be a cost of a new operator bringing tugs to Australia. For example, when Riverwijs won the exclusive licence for providing towage at Bunbury it had two tugs constructed in Singapore. Economic Associates (2001) cited transport costs of bringing tugs to Australia from Asia and Europe of around $200 000 and $400 000 per tug respectively. SAL (sub. 22, p. 7) indicated a cost of $110 000 to bring a tug from Singapore to Port Botany using non-Australian crews. Adsteam (sub. 23, p. 4) stated that the costs to it of bringing five new tugs from Singapore in 2000 ranged from $82 000 to $139 000 per tug, depending on the port of delivery.

While possibly increasing short-term operating costs, leasing of tugs may limit the exposure of new entrants to capital losses. SAL (sub. 6, p. 10) noted that leasing of tugs was a viable entry strategy. AMS has leased two second-hand tugs (with an option to buy) for its recent entry into the Melbourne market. However, leasing still involves costs of transporting leased tugs from, and (in the case of exiting the market) sending them back to, the point of leasing.

The main skill specific to harbour towage resides in the crew, particularly the master, in terms of generic ability and local knowledge. When Riverwijs obtained the towage licence at Bunbury, it used overseas masters who were trained for local conditions. The engineer and deckhand duties are not as tug- and port-specific as the master's role and hence less training is required. The cost of training crews will vary depending on the complexity of the port. To the extent that local knowledge is valuable, new entrants may be able to attract crew members from the incumbent if they are not under contract. SAL (sub. 22, p. 7) estimated that costs in the areas of training, operation manuals, information technology and quality assurance would exceed $150 000 per firm.

A failed entrant will also face redundancy costs payable to tug crews on exiting the industry. SAL (sub. 22) estimated that redundancy costs of exiting a single port after three years operation would total $470 000 for five crews.

However, not all costs of entry represent sunk costs. A number of participants were concerned that scale economies would inhibit new entry. The significant spare

capacity at all ports means that additional tug jobs could be undertaken for little extra cost by the existing provider. AAPMA argued:

> Scale economies are a formidable, probably insurmountable, barrier to entry and effectively restrict the provision of those services to a single operator. (sub. 4, p. 14)

However, this view seems to confuse the expected eventual outcome of a single operator, with barriers to new entry. The scale economies in towage are equally attainable by new entrants if they are successful in ousting the incumbent. Sunk costs are only those costs of entry which would not be recouped on exiting the market or costs which would be incurred on exit.

As noted in section 6.2, there may be some cost advantages of operating in a number of ports simultaneously. Adsteam is the sole provider of towage services in all of the large container ports and this provides it with certain advantages in spreading administrative costs, developing relationships with clients and the ability to re-position tugs. BTCE (1988) also found savings arising from scale in the purchase price and insurance of tugs and the spreading of port-related risk. While these benefits may not be large enough to preclude entry at individual ports, they do tend to support the proposed multi-port approach announced by AMS, the new entrant in the Port of Melbourne. Operating at other groupings of smaller ports, such as those located close to each other, or with complementary seasonal demand patterns, seems to create cost advantages which would require multi-port entry. The need for multi-port entry would increase the size of sunk costs for entry into the ports concerned.

Establishing a customer base

An incumbent provider has an established customer base and it might prove costly for a new operator to attract these customers. The Federal Court of Australia quoted a potential competitor (West Coast Marine and Towage) to Adsteam at Kwinana (the Fremantle outer harbour) in 1999:

> … nobody wants to use you first when you are trying to break into a new business, especially in the port situation around Australia. (Federal Court of Australia 2000a, para. 53)

Ergas (2001) observed that to the extent that such difficulties reflected Adsteam's reputation or ability to service clients' needs, they are not entry barriers but represent superior efficiency. Nonetheless, an equally efficient new entrant is likely to incur some costs to attract a share of the market away from the incumbent.

When HTS entered the Newcastle towage market in competition with Waratah Towage (an Adsteam/Howard Smith Towage (Howard Smith) joint venture), it was

jointly owned by BHP and four shipping companies operating at that port. Hence, it was able to establish a towage customer base quickly and to remain in the market for nearly five years during which time it attained a majority of the towage work.

In the case of the declared ports, Adsteam has an extensive shipping agency network in Australia and a number of Asian countries. In South Australia, it is one of the owners and operators of Flinders Ports Pty Ltd, which leases seven ports. This infrastructure of shipping services could provide Adsteam with some advantages in retaining towage business if it were to match a new entrant's prices.

Several participants have argued that Adsteam's volume rebates — introduced progressively since 1996 and based predominantly on a client's use of Adsteam's towage services in Australia — represent a significant impediment to new entry. AAPMA submitted:

> Whilst there could well be justification by Adsteam's major customers that they were under-pinning the fixed cost of towage to the benefit of less frequent callers to Australian ports, the real issue, from our point of view, is that the use of the rebate system on a national basis constitutes a very significant barrier to entry of a new towage provider in any one or more of the ports. (sub. 25, p. 4)

SAL (sub. DR34) considered that the potential for Adsteam to threaten existing customers with withdrawal of loyalty rebates would create significant pressure for new entrants. However, the existence of price pressure is likely to be a feature of any contest between competitors for a market — the critical issue for assessing entry barriers is the extent to which the new entrant faces higher costs than the incumbent.

Adsteam (sub. 15) indicated that its rebates reduced its annual revenue by $6 million (of which $2.1 million was at the declared ports). This appears to represent around 4 per cent of Adsteam's total Australian towage revenue, although this percentage would be higher for the subset of users actually receiving the rebates. Adsteam (2002c) indicated that in the declared ports subject to price notifications in January 2002, rebates represented between 3 per cent and 5.8 per cent of total towage revenue. Adsteam stated (trans., p. 154) that its Australian rebates did not extend to business provided by customers in overseas ports.

Volume and loyalty rebates are common across many industries and can reflect factors such as lower unit costs of producing large volumes for a single customer and greater certainty provided by large committed volumes. Adsteam (sub. DR43) submitted that the introduction of such discounts in towage reflected complaints from large users that they were not being rewarded for underpinning Adsteam's investment in towage facilities.

If volume and loyalty rebates are based on cost savings within or across ports, they do not represent an entry barrier as such — an equally efficient competitor should be able to offer the same level of rebates in an attempt to capture the market. To the extent that rebates reflect cost savings of serving large volume customers across certain groupings of ports, then multi-port entry, as is currently being undertaken by AMS, may be necessary to achieve minimum costs.[12]

Adsteam (sub. DR43) also noted that in the presence of scale economies, volume rebates can represent an efficient method of recovering fixed costs. However, it is not clear in the case of towage why demand of large users would be more price responsive than that of smaller users. In pricing to recoup fixed costs efficiently, a towage operator should be interested in pricing to attract marginal demand from any user whatever their size. In any event, in the short to medium term, demand elasticity of nearly all customers is likely to be very low and hence not provide a rationale for price discrimination. Also, while covering the significant fixed costs of providing towage at a particular port could conceivably justify differential pricing, Adsteam's rebates relate to a customer's Australia-wide towage volumes. There do not appear to be large common costs across ports which would explain a rebate scheme based on national volumes.

It is more likely that larger users have greater countervailing power, particularly because they could organise to support an alternative towage provider, as occurred in Newcastle in the early 1990s, and any non-cost related rebates could reflect this. The evidence presented in section 6.4 indicates that towage prices have been somewhat above efficient costs at some ports. The introduction of rebates — which available evidence suggests are fairly modest — would move prices (for at least some users) down towards efficient levels and new entrants should be able to offer equivalent prices.

Nonetheless, these prices are unlikely to be profitable for either the new entrant or the incumbent while two players remain in a port. The natural monopoly characteristics of harbour towage in Australia mean that costs per tug job will rise significantly when two competing firms share the market. It is this factor, rather than the currently relatively modest level of price discounting, that is likely to affect the profitability of new entrants. Indeed, the ACCC (sub. DR38) argued that if two towage operators were able to operate profitably in a port, this could well reflect monopoly rents in the prices that existed prior to the entry of the new operator.

[12] Adsteam (2002c) noted that it was able to take advantage of its Australia-wide fleet and achieve an 8 per cent reduction in fuel costs by holding a national fuel tender.

Regulatory impediments

The current framework for providing harbour towage services has developed over many years in an environment of government-owned port authorities with a limited commercial focus and strong union power in most port services. However, over the last fifteen years there have been significant changes in the provision of most port services such as port operation, stevedoring, pilotage and towage (chapters 3–5).

Government and port authority regulation can place impediments on contestability for harbour towage services. For example, long-term exclusive licences, if established at inefficient prices (because the operator's costs and/or profits are too high), would inhibit desirable competition. Similarly, port regulations setting the minimum number of tugs required for certain types of ships or weather conditions, if unreasonable, may inefficiently increase the minimum size of new entry. However, Sydney Ports Corporation (SPC, sub. 19, p. 8) submitted that 'in the majority of ports in Australia there are no regulatory or similar constraints that may hinder the entry of a new towage service provider'.

Adsteam (sub. 15, p. 55) argued that port authorities, by the possibility of introducing licensing and by placing other pressure on incumbent towage operators, have actually increased the impact of the threat of entry — although it then argues that explicit introduction of licensing is not needed. The efficacy of this impact depends critically on the incentives driving the port authority. This issue is discussed further in chapter 8.

Price regulation

Potential entrants to ports where towage is subject to price regulation (either under the *Prices Surveillance Act 1983* (PS Act) or State government competition legislation) might reasonably expect that if they succeed in displacing the incumbent they would become subject to such regulation.[13] If such oversight were based on an operating cost-plus return-on-capital approach, the new entrant may expect to have very limited opportunity to earn any above-normal profits to recoup the risks of entry or as a reward for cost innovations introduced into the market. In this situation, the existence of price regulation could tend to deter new entry.

[13] When HTS entered the Newcastle market it was not declared under the PS Act even though the incumbent with a lower market share remained declared.

Alternative towage providers

The speed at which an incumbent may expect a response to any misuse of market power will be influenced by the existence of alternative suppliers. The number of firms providing towage services in Australia has decreased in recent years. Currently Adsteam holds around 70 per cent of the national towage market in terms of tug jobs and is the sole provider in the declared ports, except for a small operator providing limited services at Fremantle. However, there remain some potential providers from within Australia and numerous possible entrants from overseas.

There has been a number of applicants for recent tenders for towage licences at several Australian ports. The 1999 tender for an exclusive licence to provide towage services at Bunbury attracted six applicants (after eleven expressions of interest), including the incumbent, a fully-owned subsidiary of Adsteam. The Fremantle Port Authority (sub. 1) indicated that it had received ten submissions in response to its request for proposals from parties interested in exclusive and/or non-exclusive licences for towage services. Adsteam (sub. DR43) noted the range of well-resourced applicants for towage licences in Australian ports in recent years. It also observed the involvement of large overseas shipping lines and port authorities in towage overseas, some of which have indicated an interest in providing towage services in Australian ports.

The Federal Court of Australia (2000a) judgement in *Stirling Harbour Services v Bunbury Port Authority* indicates a number of small operators actively considering entry into other Western Australian ports. It also alluded to a range of established overseas towage firms looking to expand by entering foreign markets such as Australia. The entry of Riverwijs into Bunbury (albeit following a tender for an exclusive licence) is an indication of this interest. Given the limited size of the Australian market and its dominance by Adsteam, the threat of entry by overseas firms will be important in placing pressure on incumbent suppliers.

In addition, provision of towage services by port authorities (either as part of their own operations or contracting out operation of port-owned tugs) remains a credible option that has also been used quite widely in the past in Australia. Dale Cole & Associates (sub. 9, p. 8) suggested that port authority ownership of tugs would be particularly suitable for small Queensland and Western Australian regional ports, where volumes are low and seasonal. However, SAL (sub. 6, p. 10) foresaw difficulties in capital city port authorities providing towage services or assets.

Over the last 20 years there has been a withdrawal of Australian multi-user ports from direct involvement in towage. However, Port of Brisbane Corporation (sub. DR42) indicated that it had been examining the possibility of providing a towage service.

Because of the limited complexity of providing harbour towage, new providers can also come from outside the existing industry or may develop fairly rapidly from a small base.

FINDING 6.2

Barriers to entry into the towage market include the costs of transporting tugs, losses on resale of tugs, development of a customer base, training of crews and redundancy payments on exit. Available evidence suggests that these barriers, while not insignificant, are not large. There is a pool of alternative towage operators able to enter the Australian market.

6.3 Other determinants of market power

Even if conditions of supply of harbour towage indicate some potential for the exercise of market power by an incumbent operator, the extent of that power will also be dependent on the response to towage price changes by users and other suppliers in the transport chain.

Responsiveness of demand for towage

If the demand for towage at a port were highly responsive (elastic) to towage prices (at their efficient levels), there would be little scope for a towage operator to exercise market power provided by port-level natural monopoly characteristics.[14] Attempts to increase prices above efficient levels would be met by a significant decline in demand, frustrating attempts to earn excessive profits.

However, a number of participants (CSR Shipping, sub. 5; AAPMA, sub. 4; Department of Infrastructure Victoria, sub. 16) and studies (PSA 1990; ACCC 1995) have suggested that responsiveness of demand for towage to changes in towage prices is low. While short-run reactions to price changes may be muted by limited possibilities to substitute in production and consumption, in the longer term there is usually greater opportunity to adjust demand in response to price changes.

14 The following analysis is based on demand for the towage services of a single firm in a particular port where towage exhibits strong natural monopoly characteristics. Hence the firm's demand curve is the industry demand curve for that port, at least in the range of prices made feasible for the firm by entry barriers at that port. If there were no barriers to entry, then the demand curve for the incumbent firm's services would reflect responses in supply from potential competitors.

The demand for towage services is derived from the demand for shipping, which in turn reflects demand for the products being shipped. Hence, there are a number of ways in which towage users, ship owners and ultimately shippers may alter demand as a result of changes in towage prices.

Short-run adjustments

There is little opportunity for ship owners and shippers to adjust demand for towage in the short run. A number of participants have noted that pilot and port authority requirements severely constrain the ability of ship masters to alter their demand for tugs in the short term. AAPMA observed:

> Harbour towage is a mandatory service required by virtually all cargo or passenger vessels that enter or leave a port. Towage requirements in a port are determined between the Harbour Master and the pilot and are published by the port corporations. (sub. 4, p. 3)

The Australian Institute of Marine and Power Engineers (AIMPE, sub. DR 32) argued that with standard tug numbers set at minimum levels it was now difficult to reduce tug usage except in very favourable weather conditions.

Certain harbour towage requirements are imposed by port authorities based on clearances in channels and berths, the need to swing vessels, operational practices and tidal patterns (chapter 4). The severity of weather conditions and the speed with which they can change also affect the safety margins specified by port authorities and pilots. The dimensions and design characteristics of ships using individual ports interact with these factors in determining towage requirements.

In some ports there are more prescriptive guidelines and regulations regarding the number of tugs required by vessels. For example, in Port Kembla, vessels under 73 metres are not required to use tugs for berthing or unberthing while larger vessels require a standard prescribed number of tugs depending on vessel size and weather. Port Kembla also requires large tugs with bollard pulls of between 40 and 62 tonnes. In Melbourne, on the other hand, there are no prescribed tug requirements and each decision is largely at the discretion of the pilot in consultation with the ship's master.[15]

Pilots play a significant role in determining the use of tugs — 'the towage requirements of a ship are in most instances determined by harbour pilots' (Adsteam, sub. 15, p. 36). Depending on port regulations, the number of tugs used to move a ship can be at the pilot's discretion. The skills, experience, training, risk

[15] Granting this discretion to some extent reflects that wind variability affects towage requirements and complicates prescribed tug usage.

aversion and commercial focus of individual pilots will significantly influence required tug use.

Where pilots have discretion regarding tug use, the ship's master may be able to exert pressure to reduce the number of tugs used in an attempt to reduce towage costs.[16] In some ports a ship's master earns a pilotage exemption after a certain number of visits to that port. Because bulk ships are irregular callers at ports, they may have less scope to negotiate the number of tugs used.

Long-run adjustments

In the longer term, there are a number of ways that tug users might adjust demand to changes in towage charges.

Changes in shipping technology that improve the manoeuvrability of ships (particularly at low speeds), such as bow thrusters, have had an important impact on the demand for towage services. While these technological innovations may have primarily been developed to save on costs of operating new vessels, they provide ships' masters and pilots with increased flexibility in determining the level of towage services used. Weather permitting, bow thrusters can reduce the number of tugs required by one. Nearly all cruise ships now use in-port manoeuvring systems and no longer require tugs. Container ships have increased their use of these systems by 25 per cent over the last ten years (Adsteam, sub. 15, p. 23).

The potential for ship owners to develop such technology will constrain the pricing behaviour of tug operators, particularly given the high level of fixed costs in providing towage and hence the sensitivity of profits to reductions in volumes.

Adsteam argued that:

> Technology means that some ships incorporate bow thrusters and other devices to raise manoeuvrability. These innovations are likely to change the nature of towage services. In particular, in the future, towage is likely to be supplied by a mixture of tugs and 'self-provision' by shippers. In such a situation, self-provision may efficiently compete with traditional towage services. (sub. 15, p. 54)

The increase in the average size of ships using Australian ports has also reduced the demand for towage by decreasing the number of ship visits needed for a given volume of trade. This impact has been offset somewhat by the greater number of tugs often required by these larger ships.

[16] Dale Cole & Associates (sub. DR33) noted that in its experience, ships' masters did not exert pressure for fewer tugs than suggested by the pilot.

Although Australian towage charges are a small proportion of total transport charges for items transported by sea, they represent a considerably higher share of port-based charges — between 10 and 20 per cent (excluding stevedoring) in 2001 for the main container ports (BTRE 2002). Hence, to the extent that there is a viable choice between ports, some ship owners and/or shippers may react to increases in towage by switching ports. Currently there is significant landbridging of cargo between Adelaide and Melbourne — that is, cargo is being shipped through Melbourne rather than Adelaide. While in some cases this decision reflects savings on ship costs (saving time by not visiting Adelaide) rather than port costs, it does open up competition between the two ports and place pressure on charges for all port services.

The Federal Court of Australia cited Adsteam's evidence on towage price trends between 1993 and 1998:

> Prices were not increased in Mourilyan and Lucinda [two small ports between Townsville and Cairns] despite drops in volume because of Adsteam's reluctance to increase prices when the port in those cases was only marginally attractive as a port to shipping operators. A price increase would have risked diverting ships to other ports. (Federal Court of Australia 2000a, para. 65)

However, if one towage operator is the sole provider in competing ports (and it has significant market power) it would set towage prices to maximise its own profits. While in this situation the presence of port competition would have some impact on the towage operator's pricing, it would not have the same downward pressure on towage prices as the case of different towage providers in the two ports. In this situation, it is the competing port authorities that would have the incentives to enforce market discipline on towage pricing.

For those shippers that have a viable choice of transport options, changes in towage prices may lead to switching between transport modes. While for international trade the scope for this substitution is generally very limited, domestic trade (around 10 per cent of trade through Australian ports) is more likely to have viable transport alternatives.

If shippers have little opportunity to pass on increased costs to consumers, then increases in towage charges will tend to result in reductions in quantities shipped with some flow-on effect on the demand for towage. NBCG observed:

> Australia's dry bulk commodity products compete in a competitive global market environment. In the export trades Australian producers and exporters are price takers with global markets determining the prices at which trades are made. In many trades Australia has a competitive disadvantage in the maritime transport component of the product based on the tonne kilometre task. This disadvantage combined with price volume ratio of many mineral and rural products requires particular attention to the cost

> of transport in order to remain competitive. In fact transport and related costs make up a high and sometimes the largest proportion of the final cost of the product delivered to the customer. (sub. 11, p. 3)

Similarly, Newcastle Port Corporation, operator of a significant export port for commodities and other bulk trades, stated:

> Maintaining minimum costs and hence prices for these services is critical as most commodities are driven predominantly by price. Even small shifts in overall prices can have a significant impact on demand, particularly where exporters' slim margins cannot absorb the overall logistic chain price increases. (sub. 18, p. 1)

Melbourne Port Corporation (sub. 7, p. 3) also expressed concern that even small increases in costs could have an impact when aggregated across very large trade volumes.

The initial impact of changes in volumes shipped will be on the shipping industry and on remaining shippers who will tend to have to cover higher unit fixed costs resulting from lower volumes. Over time there would be some adjustment in the amount of shipping and hence the demand for towage. This is particularly so for bulk cargoes where ships usually leave when fully loaded and hence where the number of ships using Australian ports is closely correlated to the volume of cargo.

Behaviour of other firms in the supply chain

The maximum price that a particular input provider can receive (for a given level of production) is limited by the amount that consumers are willing to pay for the final good, and the price that other input providers require for their own services. Thus, an increase in the price of one input requires an increase in the price of the final good and/or a lower price being accepted by other input providers. The lower the ability of other input suppliers to accept a lower price (that is, the more elastic is their supply), the greater is the required increase in the price of the final good and, hence, the greater is the fall in quantity demanded.

Because towage is an intermediate input into the provision of shipping services (which, for the cargo shipped, is itself an intermediate input), the demand for towage is derived from the demand for other services. There are also other inputs (such as port services and pilotage) involved in facilitating shipping services.

Ocean shipping is generally a highly competitive industry with considerable entry and exit on individual routes. SAL (sub. DR34) noted the low margins currently achieved by many ship operators and their agents. While in the short term some shipping lines may absorb increases in harbour towage prices, in the longer term they are likely to pass these costs through to users (appendix B).

In the past in Australia there has been limited competition in services such as pilotage, stevedoring and other port services, hence providers may have had excess margins which would allow them to accept lower prices if towage charges were increased. However, there is now significantly greater competition in these services and suppliers are unlikely to be able to accept reductions in their prices without reducing supply. Hence there seems little scope for rises in towage prices to be offset by reductions in returns to other suppliers in the transport chain. Therefore it is likely that towage price increases would be largely reflected in final product prices. This will increase the responsiveness of towage demand to price changes.

Cost share of harbour towage

Harbour towage is a necessary component of the sea transport chain but represents only a very small share of total transport costs (and an even smaller share of the final price of goods transported by sea). This, of itself, indicates low demand elasticity although the final outcome will depend on the substitution possibilities noted above.

CSR Shipping noted:

> Tug costs average about 0.8 per cent of the handling cost (sea freight plus stevedoring) of the above bulk materials. The cost of mooring services averages about 0.6 per cent of the handling costs (sea freight plus stevedoring). At these relatively low percentages the demand for services is unresponsive to price increases. (sub. 5, p. 1)

FINDING 6.3

While towage users have some longer-term options in responding to price increases, overall demand for towage at a particular port is not very responsive to price changes in the short to medium term.

Countervailing power of users

Market power available to a monopoly provider can be negated totally or partially by some large users which, because of their share of demand, potentially have countervailing buying power. This possibility is of particular interest for harbour towage because the significant spare capacity in towage means that reductions in volumes have a significant impact on profits.

In order to have countervailing power, a towage user will not only have to be a significant customer but also will need to have a credible bargaining threat. CSR Shipping (sub. 5) and SAL (sub. 6) argued that shipowners were not able to exercise

any market power because they had little opportunity to reduce demand for towage services.

The ACCC also considered that users' countervailing power provided little constraint to the exercise of market power. It argued that:

> … currently the countervailing power of other parties such as shipping lines, shippers and port authorities is weak. The ultimate threat of by-pass is currently not credible as it would represent a reversal of current trends of divestment of towage assets for shipping lines and disinvestment of marine assets by shippers. Further the by-pass option is likely to be a high cost option for a shipper/shipping line and reflect monopoly profits being earned by the incumbent service provider. (sub. 21, p. 9)

While short-term alternatives on the demand side are very limited, large ship owners or users in particular would seem to have alternatives open to them which would enable the exercise of countervailing power against an individual towage provider. In this situation, users do not reduce demand for towage overall but threaten to reduce their demand for a particular towage operator.

One option is the threat of starting a competing towage service. P&O has operated towage services in Australia and Maersk shipping line (as part of the group that owns the Wijsmuller group) has an interest in Riverwijs in Australia and towage operations around the world. The entry of HTS into Newcastle involved a major shipper and several shipping lines that were unhappy with towage services. Where the users concerned represent all or most of the demand for towage they are in a particularly strong position. For example, at Hay Point Terminal, BHP took over the towage operations from J Fenwick and Co and has now out-sourced the service to Teekay Shipping (Australia) Pty Ltd. Similarly, at Dalrymple Bay Coal Terminal, the coal consortium formed a towage subsidiary to replace McIlwraith McEachern.

Alternatively, at ports where there are only a few large users, the users could support an alternative towage operator if they considered that the incumbent's prices were excessive or its service poor. That is, for these ports, countervailing power should restrict the misuse of any market power of the towage provider. AIMPE (sub. 14) noted in regard to a number of northern Queensland ports, that there have been suggestions by Queensland Sugar (a major user) that alternative towage providers could be considered.

Many shipping companies using Australian ports operate as part of conferences or consortia and these, if ACCC authorisation were obtained, could provide a convenient vehicle for use of countervailing power in negotiating towage charges. However, SAL (sub. 12) noted that shipping conferences had never collectively negotiated towage charges.

Where there are numerous users, the transaction costs of ship owners organising an alternative provider are somewhat greater but, nonetheless, could feasibly place a cap on misuse of market power by an incumbent. Adsteam argued that:

> Ship operators have secured rebates and maintain continuing pressure on towage operators through their influence over port authorities and pilots. (sub. 15, p. 51)

Amalgamations occurring in world shipping should lower the cost of joint action on towage, although Dale Cole & Associates (sub. 9) indicated that over 60 per cent of the towage services in the declared ports is for small users.

The Sea Freight Council of Western Australia considered that established shipping industry groups could harness the market power of towage customers. It argued:

> SAL [Shipping Australia Limited] has demonstrated a high degree of organisational capacity and expertise in cooperating on a number of commercially sensitive and important issues in the recent past. It would seem reasonable to expect that this capability and expertise could also be brought to bear on harbour towage in order to facilitate an equitable outcome for all concerned. (sub. DR37, p. 3)

The Port of Brisbane Corporation (sub. DR42) also argued that SAL could act on behalf of the shipping industry to negotiate towage contracts. The Port of Brisbane Corporation indicated:

> We are looking — and we have said this in the past to SAL for Brisbane — for more pressure from the shipping industry itself to be applied back into the towage market, at least to try and stabilise pricing. (trans., p. 4)

However, AAPMA (sub. DR44) expressed doubts about the ability of users to agree on desired towage requirements even at ports with a small number of users. Nonetheless, issuing of exclusive licences by port authorities (an option supported by AAPMA) would also require resolution of such conflicts.

It is likely that authorisation under the *Trade Practices Act 1974* (TP Act) would be required before joint buying action by users could proceed. This would add to the transaction costs of such actions and hence tend to increase the extent to which towage providers can use market power. SAL (trans., p. 39) considered that the cost and uncertainty of the authorisation process was an important impediment to its direct involvement in negotiating towage prices.

It appears that, in the longer term, some large users would have a credible threat against over-pricing by natural monopoly towage operators. Adsteam provides volume rebates to ship owners which may be a reflection of the countervailing power of these groups, although they may also indicate lower unit costs of servicing large-volume customers.

FINDING 6.4

Countervailing power of towage users has the potential to limit or even eliminate the market power of individual towage providers. At ports with a small number of users, their negotiating power should be sufficient to temper significantly the market power of towage providers. At ports where there are a larger number of users, the cost and complexity of organising them to negotiate as a group will limit their countervailing power. In these situations, shipping industry organisations or port authorities could provide a lower-cost and more effective forum for organising towage users.

6.4 Indicators of current market power in towage

The above discussion of the structural evidence of market power suggests that entry barriers and demand conditions could allow towage charges to be somewhat above efficient levels at ports where users have not been able to exercise countervailing power. This section considers some towage market information which could indicate the extent of misuse by towage providers of any such power in recent years.

There are several indicators which might provide some evidence of the misuse of market power. These include the rate of return earned on capital at a point of time and over time, movements in prices compared to costs, the extent of attempted entry into the market, the pricing structures adopted by incumbent producers and the outcomes of recent tenders for port licences to provide towage services.

However, caution needs to be used in interpreting these data. While certain outcomes may be consistent with the misuse of market power, they may also reflect the operation of competitive market forces. For example, high profitability may indicate a monopolist using market power but it could also result from factors such as the superior efficiency of a particular firm or demand pressures.

Prices, revenue and costs over time

Adsteam argued that significant falls in towage charges per ship visit since 1990 in most capital-city ports indicate that it has little market power. Adsteam highlighted reductions in nominal per-ship towage charges of up to 70 per cent over the period 1990 to 2001, largely due to reductions in the average number of tugs used per ship visit (trans., p. 148).[17]

[17] Furthermore, Adsteam argued that changes to general domestic prices (the consumer price index) and currency fluctuations should be factored into a comprehensive analysis of towage

Significant falls in towage charges per ship visit and per container do not necessarily prove the absence of any market power, although they do suggest that towage providers are not acting as unconstrained monopolists. The key issue is whether towage charges reflect the efficient costs of providing the service.

Some participants have argued that, over the past decade, reductions in the cost of providing towage have not been fully reflected in prices and cite this as evidence of market power. Adsteam, on the other hand, claims that its costs have increased.

- Some participants (for example, AAPMA, sub. 4; SAL, sub. 6; National Farmers' Federation, sub. 10; and NBCG, sub. 11) have claimed that reduced crewing should have led to towage price reductions. Given that labour costs accounted for 40 to 50 per cent of total costs, the move to three-man crewing of itself represents a reduction in total costs of around 10 to 12.5 per cent. In its January 2002 price notification to the ACCC, Adsteam detailed changes in unit labour costs over the period since 1995 (when it moved from the Tugboat Industry Award to enterprise bargaining agreements). Employees received wage increases of between 14.9 per cent and 16.6 per cent. These increases, combined with redundancy costs of $6 million, have to be offset against savings from reduced crew sizes.
- Adsteam noted that its capital costs are largely fixed and also determined by the requirements of port authorities and the size of ships, which it argued have led to a need for larger tugs in recent years. The purchase of seven new tugs since 1999 at a cost of over $56 million, together with tug refurbishments, has substantially increased the capital stock of the industry, increasing the required quantum of both depreciation and profit (sub. 15, p. 35).
- Fuel is the major intermediate input in harbour towage. According to Adsteam, 'fuel costs have moved generally upwards in recent years' (Adsteam 2002c, p. 26), although the Federal Government Diesel Fuel Rebate delivered cost reductions of 2 to 4 per cent in 2001.
- There has been debate regarding the net impact of changes over time in the number of ship movements and tug jobs and in the size of ships. The number of tug jobs in the declared ports decreased by 4.8 per cent over the period 1996-97 to 2000-01 (see chapter 2) despite an increase of 3.3 per cent in the total number of ships requiring towage. Adsteam estimated that its annual national towage revenue is $7.7 million lower (or about 5 per cent) across all ports as a result of reduced tug usage per ship call (sub. 15, p. 25). However, SPC argued that reduced numbers of tug jobs do not necessarily result in a reduction in revenue

charges. However, exchange rate movements will affect harbour towage prices only if the cost of provision changes (for example, if harbour towage uses tradeable inputs or towage is an internationally 'tradeable' service (which does not seem to be the case)).

— towage charges are scaled to increase with the weight of the vessel requiring towage services. Therefore, if the reduction in tug jobs is due to larger ships, revenue (per ship) may not fall and conceivably could increase (SPC 2002, p. 4). However, though revenue per ship *may* increase, the effect on *total* revenue will also depend on the number of (larger) ship visits. Adsteam claimed that 'bracket creep' has been insufficient to offset declining tug jobs and that the fall in tug jobs per ship has resulted in a fall in revenue (Adsteam 2002c, p. 8; sub. 15, p. 40). Adsteam's estimated $7.7 million revenue reduction as a result of reduced tug usage per ship call excludes bracket creep. The Commission does not have data on changes in the sizes of ships visiting Australian ports to estimate the extent of bracket creep and therefore the net effect of declining tug use on revenue. It should be noted, however, to the extent that higher charges for larger ships reflect increased costs to service larger ships, the effect of bracket creep would be neutral in terms of profit.

- While productivity increases will have reduced towage costs, there have also been improvements in service quality (particularly 24-hour availability and shorter call-out times at some ports) which, while meeting users' needs, will have added to costs. Quantifying such changes is inherently difficult.

Of course, even if price changes had just reflected cost changes, this would not mean necessarily that Adsteam was not earning a margin above costs, just that the margin had not changed over time. Direct assessment of the excess of any margin would require a comprehensive examination of revenues and efficient costs. As far as the Commission is aware, no such assessment has been undertaken. Price notification decisions have tended to focus on incurred costs, rather than making judgements as to their efficiency (see, for example, ACCC 2002c, p. 15). There has been some analysis of whether margins have increased or decreased, but limited examination of the magnitude of any margin that may have already existed.

Profitability

Various studies and regulatory reports over a long period have argued that harbour towage, at least at the container ports, has exhibited above-average profitability. BTCE undertook an analysis of financial statements of 12 major towage-operator subsidiaries (handling about 60 per cent of national tug jobs) for the six years to 1986-87. It concluded that:

> The data on EBIT to total assets provide some evidence that a significant number of towage subsidiaries are earning above-average profits. (BTCE 1989, p. 11)

However, BTCE also noted that there were some difficulties with the data and that the use of accounting rates of return could be misleading as an indicator of economic returns.

PSA (1990) also found a relatively high average level of return on assets between 1987 and 1989 for towage operators which it surveyed in the main capital city ports and 'outports'. PSA (1993b) found that for the period following the implementation of towage reforms, on average, towage operators earned returns significantly higher than the all-company average, with outports being particularly profitable. The ACCC (1995) surveyed towage firms for the period 1991 to 1995 and found returns on assets well above the average for companies in the rest of the economy. Returns at outports were initially well above the declared ports but this gap had narrowed significantly by 1995.

The ACCC also considered the level of risk in the towage industry and concluded that:

> On balance, taking all factors into account, the Commission does not consider that the level of risk in the towage industry, compared with other industries, is sufficient to justify the relatively high level of profitability which harbour towage operators are currently experiencing. (1995, p. 77)

In its submission to this inquiry, the ACCC stated:

> The Commission's [ACCC's] experience gained from its assessment of price notifications over the past decade suggests that the harbour towage operations of declared firms have exhibited above normal rates of return. The persistence of such returns over such a period may point to the use of market power in the setting of prices. (sub. 21, p. 10)

In January 2002, Adsteam notified the ACCC of proposed price increases at five of the seven ports at which its towage services are declared.[18] The ACCC concluded that no price increases were justified and found that:

> … Adsteam's revenue at all ports following imposition of the proposed price increases would exceed the revenue requirements for a towage operator in a competitive market. Indeed, the prices in place over the year ended 30 June 2001 would have allowed for revenues either approximately equal to or above economic costs. (2002c, pp. 13–14)

[18] Prices were not increased at the other two declared ports. At Newcastle, when Waratah Towage took over HTS in 1999 it entered into an undertaking under the TP Act not to increase charges before June 2002 and to abide by ACCC determinations with respect to proposed price increases for as long as its notification under the PS Act continued. Waratah Towage has not increased prices since its price freeze commitment ended in June 2002. At Fremantle (inner harbour) Adsteam's subsidiaries are covered by prices contained in a non-exclusive licence from the Fremantle Port Authority which expires in December 2003.

It is not the role of this inquiry to revisit the ACCC decision and the Commission does not have access to the detailed financial information available to the ACCC in reaching its decision. However, the above ACCC analysis suggests that prices at the declared ports before the notification, including a return on assets component, may not have been significantly excessive. While Adsteam proceeded to implement its proposed price increases in March 2002, the test of market power is the ability to sustain excessive prices. Since May 2002, Adsteam has been subject to competition in the Port of Melbourne from a new entrant (AMS) which has also indicated an interest in commencing towage operations in Sydney, Brisbane and Fremantle.

The ACCC noted that Adsteam had indicated that the margin over costs in its January 2002 price notification was appreciably lower than that applying in more profitable ports in the 1990s. The ACCC considered that such historical margins suggested that:

> … prices and margins in the harbour towage industry are likely to have been set historically at levels consistently above those that would be expected to apply in competitive industries with similar levels of systematic risk. (sub. DR38, p. 2)

The ACCC concluded that generally towage margins at the declared ports have been large.

Dale Cole & Associates[19] stated that towage profitability varied between ports but was often high and above returns earned overseas:

> The Australian towage market is very profitable, whether the ports be declared or non-declared. Rates of return vary from sound to outstanding and, as a generalisation, are on par or better than most overseas towage operators. Both nationally and internationally harbour towage is an attractive investment. When ship visits grew towage profitability increased significantly. Now that growth has plateaued or is declining, the challenge for local towage operators is to maintain unit costs at previous levels. (sub. 9, pp. 10–11)

Adsteam drew attention to its recent profit downgrade for 2001-02 and commented:

> This downgrade, which is in the order of around 15 per cent, is based on a range of factors not usually associated with a business enjoying substantial market power and an ability to reap 'excessive' margins. (sub. 23, p. 12)

However, financial profitability of companies can be influenced by factors other than the underlying economic returns on productive assets.

The ACCC argued:

> Attempts to measure rates of return as reflected in publicly listed share prices are also complicated where, as in Adsteam's case, the company has achieved its market position

[19] Dale Cole is a former CEO of Howard Smith.

> through the acquisition of existing businesses. In such circumstances it is possible that extraordinary rates of return in the existing business are capitalised in the purchase price. (sub. 21, p. 10)

Also, the Adsteam results include outcomes at ports where towage operators are likely to have little if any market power.

It is important to recognise some of the shortcomings of profitability as an unambiguous indicator of misuse of monopoly power. High profits may signal excessive market power, but alternatively they might be the result of superior performance by a particular firm, excess demand or above-average risk. Conversely, monopoly pricing can exist in the absence of high profits if monopoly rents are dissipated as excessive costs. In this regard, any observed long-run monopoly profits may represent a minimum indicator of the size of entry barriers. Also, there are measurement and conceptual issues which make reported financial returns of companies an imperfect measure of economic returns.

New entry

The relative paucity of new entry into the Australian harbour towage market in open competition with an incumbent over the last 20 years, has been taken by some to indicate significant barriers to entry. However, the industry has been through a long period of rationalisation which has brought it from a 'cottage' industry to one involving a mix of large international operators and local firms. This has not been an ideal environment in which to enter the market in direct competition with an incumbent. Hence, the limited new entry does not necessarily substantiate the view that entry barriers are very high.

The main form of 'entry' in the last 20 years has involved takeovers and buying out of partners as the industry has sought to achieve available scale economies. In addition, a number of port authorities and private port owners have withdrawn from direct provision of harbour towage, and been replaced by specialist towage firms. This type of activity is likely to have brought about many of the efficiency gains available from combative entry, and possibly at lower cost.

Entry into harbour towage is more likely if the incumbent operator is producing at above efficient costs.

AAPMA argued that harbour towage could be provided more cheaply:

> While we accept that the provision of towage services is likely to tend towards being a natural monopoly in individual ports, we do not accept that the incumbent monopoly provider in many of Australia's ports is necessarily cost-efficient, particularly as it relates to the choices and implementation of equipment and labour arrangements that

> are included in the cost base of the operator. We understand from industry sources that lower cost options to provide a given level of service are available and would lead to more efficient outcomes than presently exist. (sub. 4, p. 15)

While the absence of new entry can indicate high entry barriers, in principle it might also reflect a situation of low entry barriers providing pressure on an incumbent to operate and price efficiently, thereby deterring entry to a natural monopoly market.

As noted above, a new entrant has now commenced towage operations in the Port of Melbourne and has announced plans to move into several other capital city ports.

Pricing behaviour

If harbour towage in most Australian ports were provided by profit-maximising monopolists with a high degree of market power, certain patterns of pricing behaviour and profit outcomes within and between ports might be expected, reflecting likely differences in the demand elasticity of certain groups of towage users. In particular:

- within ports, prices would be lower for users whose demand was more responsive to towage price changes (price discrimination) in order to minimise the impact of price increases on demand; and
- between ports, towage price margins above efficient costs would be greater for ports where overall towage demand was less responsive to price. Hence, towage prices would vary between ports by more than the cost of providing towage.

While available information is limited, there is evidence that these pricing patterns are not generally observed.

Traditionally there has been little systematic price discrimination within ports. The PSA (1990) — on the basis of information provided by Howard Smith — indicated that towage charges were calculated to provide a required revenue to cover costs including a return on capital. Revenue was averaged across the expected number of tug jobs to give a 'per tug' charge common to all users.

While it is not clear whether a similar formulaic approach continues, the structure of towage charges has changed little since at least 1990. The ACCC found that users appear to prefer a flat price structure based on average costs (1995, p. 50). Similarly, Adsteam stated that its pricing approach 'is based on historical pricing methods which have … continued to find acceptance among ship operators' (sub. 15, p. 5). Standard pricing schedules do not discriminate between type of user.

Most within-port price differentials seem broadly to reflect costs of provision. While towage charges per tug are somewhat higher for larger ships, the differences are small and seem likely to relate to cost differences of providing and operating the larger tugs needed for these vessels. Another example is the fourth tug in Port Jackson which is used rarely (and by a sole customer) and is charged out at a much higher rate on a user-pays basis. Similarly, the third tug at Port Botany is charged out at a higher rate.

The ports of Cairns, Lucinda and Mourilyan use a form of seasonal pricing. These ports should be considered one towage market since they share tugs due to their proximity and the low, seasonal nature of vessel calls. Charges for a two-tug movement in Cairns are greater during the period July to December than the rest of the year. This is because at this time one of the two tugs based in Cairns is dedicated to the port of Lucinda. Further, towage in Lucinda and Mourilyan can cost up to three times as much as in Cairns.

Adsteam currently provides fairly small rebates to large-volume users but these will also have some lower-cost component in them.

In regard to price differentials across ports, it is likely that demand for towage at container ports would be less elastic than at most bulk ports for several reasons:

- most bulk products are sold on competitive world markets and hence any increase in Australian input costs will not be recoverable by commodity producers. Hence they are more likely to respond to higher towage prices by reducing demand for towage; and
- the value of a ship load of containerised cargo will generally be much greater than for bulk products and hence towage would be a much smaller proportion of selling price.

Hence we might expect to see towage operators charging higher prices at container ports, despite the usually lower average unit costs of providing towage at these ports because of the greater numbers of tug jobs (excluding Dampier and Newcastle). However, available evidence shows no consistent pattern of price differences between ports on other than a cost basis. Towage charges generally are lower at ports with more tug jobs per tug (chapter 2, figure 2.6).

For example, towage is cheaper in the inner harbour at Fremantle, which serves mainly container trade, than in the outer harbour (Kwinana), which is a bulk port and has more tug jobs per tug.

Conversely, Gladstone and Port Botany both have three tugs and a similar number of tug jobs (3412 and 3931, respectively). The cost of towage for a 17 215 gross

registered tonnes grain ship in Gladstone is around $1653, while in Port Botany it is $2971 (chapter 2). However, lower prices in Gladstone may be partly the result of a competitive tender which reduced towage prices by 12.5 per cent.

Outcomes of tenders

In recent years, several port authorities have conducted competitive tenders for the provision of harbour towage. The results of these tenders can give a broad indication of the extent of the use of market power by the incumbent towage operator. However, some care must be taken in making such comparisons as there will be other factors that might explain some of the observed price decreases resulting from tenders. In addition, if rebates are being provided by an incumbent, prices following tenders need to be compared with the actual prices prevailing before the tender, rather than with published (list) prices.

In 2000, the Gladstone Port Authority conducted a tender for the exclusive provision of towage services. The tender was awarded to the incumbent operator, Queensland Tug and Salvage (then an Adsteam/Howard Smith joint-owned operation). Prices were around 12 per cent below previous levels.

There are a number of matters which complicate any interpretation of this decline as a measure of the pre-licence market power of the incumbent. First, the pricing formula in the contract guaranteed a 15 per cent return on funds employed which together with the exclusive licence has reduced risk compared to the non-licence situation. Second, Gladstone has a history of towage price reductions partly reflecting growth in tug jobs and, hence, price decreases may have been expected even in the absence of a licensing process.

Conversely, Dale Cole & Associates (sub. 9) (a consultant to one of the unsuccessful tenderers) suggested that price reductions of as much as 16.5 per cent had been tendered, although the service quality and other conditions offered under the lower-priced bids are not known. Also, there is some suggestion that service levels may have improved under the exclusive licence, which would increase the effective price reduction achieved.

In 2000, the Fremantle Port Authority requested tenders for exclusive and non-exclusive licences to provide towage at the inner harbour and/or outer harbour. It eventually awarded a non-exclusive licence to each of the incumbent operators (both Adsteam subsidiaries), which were the only applicants for non-exclusive

licences that offered a comprehensive towage service.[20] Prices were reduced on average by 15 per cent with a commitment for prices to remain fixed from June 2001 to December 2003[21] — a period during which Adsteam introduced large increases in list prices at all other declared ports except Newcastle (where Adsteam had made an undertaking under the TP Act not to increase prices). In addition, penalty rates and surcharges for out-of-ordinary-hours work in the outer harbour were removed. Fremantle Port Authority (sub. 1 and trans., p. 142) indicated that even greater price reductions were available if an exclusive licence had been issued and that these further potential reductions were significant.

In 1999-2000, Bunbury Port Authority conducted tenders for an exclusive licence to provide towage for five years with an option for a two-year extension. The winning tender from Riverwijs simplified the pricing structure and incorporated price reductions of 5 per cent and upwards (averaging around 10 per cent) relative to the prices charged by the previous incumbent as well as providing for more powerful tugs.

The outcomes of these tenders suggest that previous prices by incumbents in these three ports contained some margin over efficient prices but that the gap was not large. SAL (sub. DR34) considered that experience suggested the potential effects of introducing exclusive licences could be price reductions of up to 30 per cent. Realised reductions have not been of this magnitude.

In addition, Bunbury Port Authority (sub. DR31) and Fremantle Port Authority (trans., p. 141) indicated that potential entrants were not interested in bidding for a non-exclusive licence and would only tender for an exclusive licence, also suggesting the existence of entry barriers that were not inconsequential.

Adsteam (sub. DR43) argued that reductions in prices under tenders were to be expected because pre-tender prices being charged by Adsteam included a component for recouping investment in cost-saving innovations, which were appropriable by potential new entrants.[22] It considered that these other tenderers were able to expropriate the benefits of these investments without incurring the associated costs, and hence bids were lower than existing prices. Adsteam contended that these post-tender price reductions were inefficient as they discouraged any incumbent from investing in (eventually) cost-saving activities.

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[20] Total Marine Services, which provides occasional services to small vessels, also applied for and received a further non-exclusive licence.

[21] Prices at the inner harbour, where the towage operator is declared under the PS Act, had not increased since 1992.

[22] Such costs could include management resources involved in negotiating more efficient crewing levels and the associated redundancy payments incurred to facilitate these improvements.

As discussed in chapter 8 and appendix E, Adsteam may have invested in 'cost-saving' innovations (particularly labour-saving innovations) in order to improve its returns or to stave off competition from innovative rivals. However, it is unlikely that it would have knowingly reduced its profits by investing in innovations that were largely appropriable by others, because these rivals could have made use of the cost reductions to enter the market. This suggests that lower prices bid by others in competitive tenders will not represent expropriation of Adsteam's investments.

Moreover, any ability of the incumbent to hold pre-tender prices above those bid by potential entrants will reflect the extent of entry barriers and hence the degree of market power possessed by the incumbent. Hence, price reductions observed in tenders will be a useful indicator of the size of these barriers. Chapter 8 and appendix E consider efficiency and equity issues relating to cost-reducing investment in the presence of exclusive tenders.

Overall, the above evidence on a range of indicators supports the Commission's assessment that entry barriers, though not insignificant, provide some, albeit limited, scope for excessive pricing at some ports.

FINDING 6.5

Available evidence indicates that towage prices in some Australian ports have been above efficient levels but the margins have not been large.

6.5 Market power in related services

This section briefly considers the market power of providers of a number of services related to towage such as mooring lines, lines-launch services, fire-fighting and salvage operations.

Mooring-line services

While representing only a very small share of the port services bundle, mooring-line services have been raised as an area of concern by some participants. Lines used to tie a ship to a wharf have to be attached on berthing and removed on departure. These services cannot be performed by tug crews and there seem to be only small cost advantages — administrative savings of a shipping company or agent dealing with a single firm — in towage firms providing them. Providers of mooring-line services differ across ports. Providers include independent operators, towage companies, stevedores and port authorities.

A number of participants noted the high cost of mooring-line services at NSW ports. CSR Shipping suggested that labour and port regulations limited new entry into provision of mooring-line services:

> The high costs and inflexibility of mooring services in many ports seems to result from the dominance of waterside unions though not exclusively. We believe some of the problem is attributable to the over regulation of the industry and the historical tendency of port authorities to involve themselves to ensure the supply of a 'package' of ports services such as mooring and tugs.
>
> In Melbourne deregulation of the mooring market led to greater choice in the providers of this service, efficiency gains, flexibility and ultimately lower prices. In other ports, where prices are high and labour inflexible, one would expect to see new entrants in this simple (negligible capital required) business. That we don't, suggests that the labour controls the industry. (sub. 5, p. 2)

AAPMA noted:

> There are major differences in the provision of mooring services between NSW ports and ports in other states. This reflects a NSW state award, the absence of any competition in the provision of mooring services in NSW ports, and different approaches to mooring/lines handling in the other states. As a result, the cost of mooring services in NSW ports are about three times higher than those, for example, in Melbourne and Brisbane. (sub. 4, p. 9)

Currently the resources required to be used in mooring and unmooring vessels in New South Wales are prescribed in the relevant State labour award and these are greater than the resources used in ports in other States. A study commissioned by the SPC argued that mooring activities could be safely undertaken with significantly fewer resources (labour and boats) than are currently used (sub. 19, pp. 12–13). The mooring service provider at Sydney (Stannard Brothers Ltd, an Adsteam subsidiary) had previously sought unsuccessfully in the NSW Industrial Commission to change the award. However, recent negotiations have brought about some reductions in required staffing levels at Sydney.

Mooring-line services involve little capital and there seem to be no non-regulatory entry barriers. CSR Shipping (sub. 5, p. 3) indicated that the possibility of automatic mooring systems would place pressure on current mooring operations, at least for smaller ships. The barriers to entry and high charges in some ports would seem to reflect overly prescriptive award conditions and port regulations. In ports where these impediments to competition are absent, competitive market conditions could be expected to deliver efficient outcomes in the provision of mooring-line services.

FINDING 6.6

Entry barriers to the provision of mooring-line services generally are negligible. However, in some ports, State industrial awards and/or port requirements

significantly add to costs and may create barriers to entry by restricting the opportunities for innovation by new entrants.

Lines-launch services

For some ships in some ports, launches are used to take mooring lines to mooring gangs on the wharf. Different ports have different arrangements, with suppliers including the mooring-lines provider, the towage provider, the port authority or an independent operator. Most ports have a single lines-launch provider, although a few — including Gladstone and Brisbane — have sustained two operators. As with mooring-line services, barriers to entry into lines-launch services appear minimal. Capital requirements are small and training requirements are minimal.

Gladstone Port Services and Brisbane Port Launches, providers of lines-launch services in Gladstone and Brisbane respectively, have raised concerns about the potential for Adsteam to dominate the market at these two ports and to increase prices significantly. It indicated that Adsteam had been aggressively seeking lines-launch business, particularly by offering large rebates to large customers based on volume of towage and lines-launch business. Consequently, Gladstone Port Services and Brisbane Port Launches was being left with the smaller customers, representing a minority share of the market (sub. DR39).

Contractual relationships with large customers involving a number of related services can produce cost savings for a service provider and the customer. Possible savings include lower unit transactions costs for both parties and greater certainty of demand for the service provider, thereby lowering investment risks. In a competitive market these savings would be translated into lower prices for larger customers. To the extent that there are some minor economies of scope in providing towage and lines-launch services (for example, in administrative costs) these rebates would be linked to a customer's usage of both services.

These advantages may mean that a single supplier with nation-wide towage links such as Adsteam is in a position to expand its market share in lines-launch services. During such a process, prices may well be cut below long-run profitable levels and hence might be expected eventually to rise.[23] Nonetheless, the low entry barriers to provision of lines-launch services indicates that any above-normal returns would not be sustainable unless a provider had real cost advantages over current and prospective competitors.

[23] If prices are reduced below avoidable cost in order to secure market dominance, this may constitute predatory pricing and be actionable under the misuse of market power provisions (s. 46) of the TP Act.

SAL considered that some port authority regulations also created unnecessary costs in the use of line boats to assist mooring:

> It is the view of SAL that the use of a dedicated lines-launch service for berthing or sailing from quay berths is an anachronism. Port Authorities and their stakeholder State Governments should legislate to remove this requirement as modern, highly manoeuvrable tugs have replaced the need to run lines and, in fact, can hold a vessel alongside whilst lines are lowered to waiting linesmen. The only exception would be when lines-launches are required for a vessel arriving at or sailing from a buoy or dolphin berth. (sub. 6, p. 4)

Port authorities have an obvious interest in ensuring safe berthing of ships and hence may wish to prescribe certain minimum standards for berthing procedures. However, it is important that these standards are kept up to date with changes in ship and tug technology, in order to avoid imposing unnecessary costs on port users.

Salvage services

For Australia, the limited amount of salvage work spread across a long coastline does not appear to justify the provision of tugs solely for salvage purposes. Hence, salvage operations are provided as an adjunct to harbour towage services, with operators in a number of ports providing some harbour tugs with salvage capabilities beyond the requirements needed for harbour towage.

For those emergency salvage operations requiring towage which are undertaken within or near a port and are time critical, market power will be similar to that for harbour towage, and hence there will tend to be a natural monopoly in the provision of such services. However, international conventions for calculation of salvage payments in such situations inhibit any attempt to misuse market power.

For non-urgent salvage work, salvage providers can come from a variety of ports (and even from overseas in many locations). AAPMA noted:

> There are a number of potential (and actual) salvage vessels/providers in Australia with maritime salvage expertise other than Adsteam and, in view of the high rewards from successful salvage, competition can be intense and response immediate. (sub. DR44, p. 9)

For example, the primary salvage tug contracted to tow the *HMS Nottingham* following its running aground off Lord Howe Island in July 2002, was engaged from New Zealand as a result of a competitive tender process. Adsteam (trans., p. 162) noted the highly mobile nature of resources used in salvage operations and also the willingness of ship owners to engage an ‘opportunity salvor’ (sub. DR43, report 4).

Dale Cole & Associates argued that with regard to salvage services, Australia had alternative suppliers available (including from overseas) and hence 'normal commercial contestable pressures should determine outcomes' (sub. 9, p. 8).

FINDING 6.7

Harbour towage operators generally have little market power in the provision of non-emergency salvage services, as reflected in the ready availability of competing salvage providers, including from international sources. Market power of proximate salvors would be greater in emergency salvage situations but payment in these cases is determined by international convention.

Salvage issues are discussed further in appendix F and chapter 8.

Fire-fighting services

At many ports, usually under formal or informal arrangements with port authorities, some harbour tugs are fitted with fire-fighting equipment. Savings from supplying sea-based fire-fighting services in combination with harbour towage mean that on the supply side, market power in these services will be similar to that for harbour towage.

Adsteam (sub. 15, p. 9) indicated that fire-fighting services provided by tugs are an integral part of port fire-fighting services. However, in providing these services towage operators are generally dealing with a single buyer — the port authorities — with some countervailing power.[24] Decisions by port authorities can have a significant impact on a towage operator's core business and it is unlikely that towage operators would attempt to use any market power in charging for fire-fighting services provided by tugs. The absence of any payments to towage operators for providing fire-fighting capability at some ports suggests that any market power lies with port authorities.

Payment arrangements for towage operators providing fire-fighting equipment often seem to be somewhat *ad hoc* and the remuneration small. Adsteam (sub. 23, p. 2) submitted that these services are commonly provided at prices well below the cost of the required inputs.

[24] For example, Adsteam has indicated that while previously the SPC had paid for foam used in fire-fighting equipment, the SPC had now declined to do so and foam replacement had occurred at Adsteam's cost (Adsteam, pers. comm., 20 May 2002).

7 Options for economic regulation of harbour towage

The terms of reference require the Commission to examine 'whether there is a continuing need for prices oversight of certain harbour towage services and, if so, the most effective form of prices oversight.' An assessment of prices oversight options requires weighing up the magnitude of the problem to be addressed — the efficiency cost of any market power being misused by towage providers — against the costs and disadvantages of the regulatory response. Prices oversight may be warranted when the costs of market power exceed the costs of regulatory intervention.

The advantages and disadvantages of potential prices-oversight models for harbour towage are examined in this chapter. In particular, the current system of prices oversight applying to the harbour towage industry — price notification — is outlined and assessed. The administration of the notification system is also assessed against best practice principles for prices oversight of transparency, accountability and timeliness.

Prices oversight is not the only regulatory option available to address the potential misuse of market power by towage operators. Issues associated with the application of existing key provisions of the *Trade Practices Act 1974* (TP Act) to the towage industry also are discussed in this chapter.

7.1 Notification procedures

Harbour towage services and operators at the ports of Melbourne, Sydney (Port Botany and Port Jackson), Newcastle, Brisbane, Fremantle and Adelaide were declared under s. 21 of the *Prices Surveillance Act 1983* (PS Act) in August 1991.[1] The declaration has been extended twice since 1991 and the current declaration is due to expire on 19 September 2002.

[1] Initially, Queensland Tug and Salvage Company Pty Ltd, J Fenwick and Co Pty Ltd, J Fenwick and Co (Newcastle) Pty Ltd, Waratah Towage Pty Ltd, Howard Smith Industries Pty Ltd, McIlwraith McEacharn Operations Ltd, The Adelaide Steamship Company Ltd, Adelaide Steamship Industries Pty Ltd, and the Swan River Shipping Company were declared.

Under s. 22 of the PS Act, a declared harbour towage operator is required to notify the ACCC of its intention to raise prices above the highest price applicable in the previous 12 months.[2] On receipt of the notification the ACCC has 21 days to make a determination. In its determination the ACCC can:

- not object to proposed price increases; or
- not object to price increases lower than those proposed; or
- object to the proposed increases.

While the determination is not enforceable, there is a penalty for failing to notify a price increase or increasing prices within the prescribed 21-day period without the ACCC's approval.

Notification guidelines

In 1998, the ACCC published a *Draft Statement of Regulatory Approach to Price Notifications* (ACCC 1998). The publication provides guidance to declared companies on the informational requirements for submitting a proposal (including the ACCC's approach to dealing with commercial-in-confidence information) and on the approach the ACCC intends to take in assessing cost-based price notifications.

In assessing notifications under s. 22 of the PS Act, the ACCC expects 'the declared company to justify their case for price increases' (ACCC 1998, p.4). Information that a declared company should provide to support the proposal may include: the levels of and movements in costs, revenues and volumes; the nature of productivity improvements and the extent to which these have resulted in improved service quality or cost savings to users; and a detailed description of the operations of the declared company, including the relationship between declared goods and services and non-declared goods and services. Further, information should be provided over a sufficient length of time, often a period of several years, to allow the ACCC to 'form a reasonable assessment of the profitability and efficiency with which the declared goods and services are supplied' (ACCC 1998, p. 5).

Assessment criteria

Guidance for the assessment of price notification proposals is provided under the PS Act. The Act states that the ACCC is to give particular regard to:

[2] Prior to 1995, the Act was administered by the Prices Surveillance Authority. During that time the 12-month period did not apply.

(a) the need to maintain investment and employment, including the influence of profitability on investment and employment; and

(b) the need to discourage a person who is in a position substantially to influence a market for goods or services from taking advantage of that power in setting prices … (s. 17(3))[3]

The ACCC has stated that the way to ensure that these criteria are met is to pursue the objective of the efficient provision of services. 'Investment and employment in the national economy will be promoted when firms produce goods or services efficiently and charge prices which are at competitive levels' (ACCC 1998, p. 3).

Given this guidance to the ACCC under the PS Act, the ACCC has stated that in assessing price notifications it will direct its attention to:

- the efficiency of the cost base that the declared company is working from to earn a return; and
- the reasonableness of the rate of return that the declared company is seeking. (ACCC 1998, p. 4)

7.2 Notifications by harbour towage operators

Over the period that harbour towage services have been declared, harbour towage operators have approached the ACCC and its predecessor, the Prices Surveillance Authority (PSA), a total of 10 times with 'proposals' seeking price increases (table 7.1).[4] On a number of occasions, 'proposals' included multiple price notifications covering a number of ports. For instance, Waratah Towage's (Waratah) 1992 proposal comprised separate notifications for increases at three separate ports. However, not all notifications have required a determination by the regulator. Notifications have been withdrawn by operators because they contained insufficient information, or have been withdrawn and then have been resubmitted to allow the ACCC more time to assess the notifications. In all, 26 notifications have been submitted by towage operators (excluding those associated with the Goods and Services Tax) and of these, only 13 have required a determination. More detailed information on price notifications by harbour towage operators can be found in box 7.1.

[3] The ACCC has stated that the third criterion, which deals with cost increases 'arising from increases in wages and changes in conditions of employment inconsistent with principles established by relevant industrial tribunals' (PS Act, s. 17(3)(c)), may no longer be directly relevant because of recent changes to industrial relations legislation (ACCC 1998, p. 4).

[4] This does not include seven notifications that were submitted to the ACCC in July 2000 associated with the introduction of the Goods and Services Tax (GST). These notifications were assessed using criteria with reference to Part VB of the *Trade Practices Act 1974*.

Table 7.1 **Price notifications by harbour towage operators[a]**

Company	Date	Port	Price increase: Proposed	Price increase: Regulator's assessment	Outcome
			%	%	
Waratah[b]	Feb 1992	Port Jackson	15	6.0	No increase in prices[c]
		Newcastle	15	6.2	No increase in prices[c]
		Port Botany	15	15	No increase in prices[c]
Fenwick	Mar 1992	Newcastle	7.5	nd	Withdrawn[d]
Fenwick	Mar 1992	Port Botany	12.5	nd	Withdrawn[d]
Adsteam	Apr 1992	Adelaide	23.78	13.4	Price increase of 13.4 per cent
Adsteam	Jul 1992	Fremantle	15	nd	Withdrawn[d]
Adsteam	Oct 1992	Fremantle	15	6.8	Price increase of 6.8 per cent
Waratah[b]	Jun 1997	Port Jackson	15	0	No increase in prices
Waratah[b]	Sep 1997	Port Jackson	15	0	Waratah increased prices in 1998 in accordance with its proposal
HST[e]	Jan 1999	Melbourne	17.5	10	Price increase of 10 per cent
Adsteam[f]	14 Dec 2001	Brisbane	na	nd	Withdrawn[d]
		Port Jackson			
		Port Botany			
		Melbourne			
		Adelaide			
	28 Dec 2001	Brisbane	11.7	nd	Withdrawn[g]
		Port Jackson	26.2	nd	
		Port Botany	13.1	nd	
		Melbourne	23.4	nd	
		Adelaide	15.8	nd	
	31 Jan 2002	Brisbane	11.7	0	Adsteam increased prices
		Port Jackson	26.2	0	in March 2002 in
		Port Botany	13.1	0	accordance with its
		Melbourne	23.4	0	proposals for all five ports
		Adelaide	15.8	0	

a Does not include seven notifications that were submitted to the ACCC in July 2000 associated with the introduction of the Goods and Services Tax (GST). These notifications were assessed using criteria with reference to Part VB of the *Trade Practices Act 1974*. **b** Waratah Towage (Waratah), at this time, was a joint venture operation between Howard Smith Towage and Adsteam. **c** Waratah did not implement these increases as its competitor in these ports failed to secure a price increase from the PSA. **d** Insufficient information. **e** Howard Smith Towage. **f** Submitted on behalf of Adsteam Towage Pty Ltd, Queensland Tug & Salvage Co Pty Ltd, Adsteam Towage Holdings Pty Ltd and Waratah Towage Pty Ltd. **g** Withdrawn and resubmitted to allow the ACCC more time to process the notification. **na** Not available. **nd** No determination.

Sources: ACCC (1995; 1997a, b; 1999a; 2002c; sub. 21).

Towage operators approached the PSA six times in 1992, with a total of eight notifications. Most of these were associated with requests by towage operators to

recover increased costs of redundancies and increases in unit costs associated with a fall in the volume of tug jobs. There were no further notifications until 1997.

Notifications for price increases have been submitted at all ports where harbour towage services are declared. There has only been one (completed) notification for operators at each of the ports of Newcastle, Adelaide, Fremantle and Brisbane. There have been two (completed) notifications at Port Botany and the Port of Melbourne, and four (completed) notifications at Port Jackson.

Box 7.1 **Price notifications by harbour towage operators**

Notifications to the Prices Surveillance Authority, 1991–1995

Eight notifications were submitted to the Prices Surveillance Authority (PSA) by harbour towage operators in 1992 — on only one occasion did the PSA not object to the proposed price increase. On four occasions, the PSA considered that proposed prices were not justified but had no objection to smaller price increases. The reasons for the PSA's objections generally fell into two categories:

- redundancy payments were being recovered over too short a time period; and
- the full impact of declining volumes on unit costs should not be recovered — the PSA allowed only half of declining volumes to be reflected in unit costs.

Waratah Towage (Waratah) did not increase prices as allowed by the PSA, as its competitors failed to secure a price increase from the PSA.

Three notifications were withdrawn because they contained insufficient information to allow the PSA to make a decision. Fenwick did not resubmit its March 1992 notifications for the ports of Newcastle and Port Botany. In its notification of July 1992, Adsteam Marine Limited (Adsteam) proposed price increases based on the increase in unit costs between two eight-month periods. The PSA advised Adsteam that it usually required comparisons over two 12-month periods. Adsteam withdrew the notification and submitted a new notification with the required data in October 1992.

Waratah Towage's 1997 notifications

In June 1997, Waratah submitted a notification to the ACCC proposing an increase in charges of 15 per cent for movements using up to and including three tugs at Port Jackson. Waratah also proposed that in cases where four tugs are used, a separate charge of $17 400 should apply for the fourth tug. At the time, only one vessel using the port required four tugs and the proposed charge reflected this. The ACCC considered that there were inconsistencies in data supporting the price increases and, as such, was not convinced that the proposed increases were justified.

(Continued next page)

Box 7.1 **(continued)**

Waratah lodged another notification in September 1997 seeking the same increases as the June notification. The ACCC again found that a price increase of 15 per cent was not justified. While it agreed that a separate charge for a fourth tug was justified on efficiency grounds, it considered that the charge proposed by Waratah did not reflect an appropriate level or an efficient level of cost of providing the fourth tug. The ACCC said it had no objection to a charge of $8 252 per movement for the fourth tug. In 1998, Waratah increased charges at Port Jackson in accordance with its notification.

Howard Smith Towage's 1999 notification

In January 1999, Howard Smith Towage (Howard Smith) submitted a notification proposing an increase in towage charges at the Port of Melbourne by a weighted average of 17.5 per cent.

In its determination, the ACCC concluded that Howard Smith was offering an enhanced service which provided savings to a number of users and which increased port efficiency. In addition, the ACCC considered that Howard Smith appeared to be operating from an efficient cost base and that the targeted rate of return was reasonable.

However, the ACCC considered that the proposed prices were too high. It indicated that it would not object to a weighted-average price increase of 10 per cent on the grounds that:

- a market value of depreciation, rather than an accounting value of depreciation as used by Howard Smith, should be used to calculate future costs and earnings: and
- a new Howard Smith tug had capabilities greater than were strictly necessary for providing harbour towage services (specifically that the tug had salvage capability).

Adsteam's 2002 notification

On 30 January 2002, Adsteam submitted notifications to the ACCC which proposed price increases at the ports of Brisbane, Sydney (Port Jackson and Port Botany), Melbourne and Adelaide. Adsteam originally lodged the notifications on 14 December. The notifications were then withdrawn and resubmitted on a further two occasions.

The ACCC advised Adsteam that the notification did not contain the necessary information required under the PS Act with respect to price, terms and conditions of the proposed price changes. On 30 January Adsteam withdrew the revised notification and submitted a new notification to allow the ACCC until 19 February to make a decision.

The notifications included proposals for price increases ranging from 26.2 per cent in Port Jackson to 11.7 per cent in the Port of Brisbane (table 7.1). The ACCC objected to the proposed price increases because it considered that Adsteam could achieve reasonable rates of return at the five ports at current prices.

(Continued next page)

Box 7.1 **(continued)**

The ACCC argued that Adsteam, in its notification, provided 'arm's length charter rate for a tug' as the estimated opportunity cost of deploying a tug in a particular port. Adsteam then determined its revenue requirement by adding a margin of 18 per cent to total costs (which included the estimated towage lease charges). The ACCC considered that Adsteam was adding a margin to economic costs, which already incorporated a return to capital and, as such, was 'double counting' profit (ACCC 2002a, p. 2).

The ACCC's approach modelled a weighted-average cost of capital approach based on an estimated market value for tug boats provided by Adsteam, and a benchmark return on equity of 12.3 per cent. On the basis of this analysis, the ACCC found that the 'imposition of the proposed price increases would exceed the revenue requirements for a towage operator in a competitive market' (ACCC 2002c, p. 13). In March 2002, Adsteam increased towage prices in line with its notifications.

Sources: ACCC (1995; 1997a, b; 1999a; 2002a, c; sub. 21).

7.3 Assessment of notification of harbour towage services

The principal objective of any regulation should be that it produces a better outcome than any other form of regulation or, indeed, no regulation. The principal criteria against which price notification should be judged are: whether it has promoted the efficient quality and pricing of those services, and whether the regulation itself has been cost-effective. Secondary criteria relate to the administration of the regulation including, for example, whether it has met best practice principles for prices oversight.

Has price notification achieved efficient prices?

Price, costs and other performance data for harbour towage are provided in chapters 2 and 6. The evidence suggests that nominal prices for harbour towage have either increased or remained constant at most major container ports over the last decade, while service quality has improved markedly.

Over the same period, the cost of towage per container has fallen significantly (chapter 2, table 2.13), due mainly to a reduction in towage requirements per ship visit, the use of larger ships and increased container loads. While the amount of cargo processed through Australian ports has increased significantly, the demand

for towage has increased less than proportionately — at most major ports, it has fallen in recent years.

The question is whether, notwithstanding price trends and improved service quality, towage operators are earning an excessive price margin (in that prices exceed 'efficient costs'). In chapter 6 it was concluded that although barriers to entry at particular ports are not so high as to be prohibitive, incumbents probably can still earn a moderate margin over 'efficient' average costs.

At issue is whether price notification has constrained this margin to any degree, or whether the threat of entry at declared ports provides the major constraint.

Some participants argued that there is evidence of notification having restricted price increases. The Port of Brisbane Corporation considered:

> … that price surveillance has been a practical deterrent to monopolistic pricing over the years leading up to the takeover of Howard Smith's towage interests by Adsteam Marine in Australian ports. Although there have been recorded price increases, they have been limited to specific situations and have followed acceptance by the ACCC. Only when Adsteam Marine became a sole operator has the industry witnessed broader price increases which have not been approved by the ACCC. (sub. DR42, p. 7)

In addition, the ACCC argued that:

> … [notification] was effective in containing towage rate increases for several declared towage operations over the period August 1991 to December 2001. This resulted in declines in real towage rates. Also over that period the PSA/ACCC assessed as reasonable several other towage price rises for declared operators and effectively contained rate rises that might have been implemented in the absence of regulation, by approving lower rises than what was proposed. (sub. 21, p. 21)

However, even where determinations have resulted in charges smaller than those originally proposed by the towage operator (such as Howard Smith's 1999 notification (table 7.1)), this may not necessarily indicate that more 'efficient' prices were achieved (relative to a situation where there was no price regulation). In these instances it is possible that a declared company may have proposed an increase greater than it required on the assumption that the regulator was unlikely to approve the full price increase — a so-called ambit claim.

The likelihood that price notification has promoted efficient pricing appears to be limited by a number of factors, including: a lack of ongoing assessment of harbour towage prices; difficulties faced by the regulator in determining what constitutes efficient pricing; and a lack of enforcement of determinations. Some of these failings are inherent in any form of price control, others are specific to price notification.

Infrequent assessment of harbour towage prices

The effectiveness of price notification as a system of prices oversight is potentially weakened by the requirement that it only comes into effect when a towage operator seeks an increase in charges. Only then does the regulator have an opportunity to assess whether the proposed increase reflects efficient costs and to make a determination on the pricing proposal.

The absence of price increases, however, does not imply that operators are not earning a price margin above efficient costs. There was no assessment of the efficiency of prices at the time of declaration in 1991, so it is possible that towage operators were earning price margins at that time. Moreover, to the extent that costs have fallen (through, for example, productivity improvements or economies of scale with increased demand), then there is the potential for the towage operator to maintain or increase these margins over time. Of course, the ability of an operator to maintain or increase these margins will be limited by the degree to which the market is contestable, that is, the point at which these margins attract new entry.

The PSA considered the lack of ongoing assessment to be a potential weakness of price notification when it recommended that harbour towage be declared under the PS Act in 1991. On balance, it considered that notification could prove effective in encouraging efficient pricing behaviour, as it expected there was likely to be upward pressure on towage costs in the medium term:

> Current statutory powers may limit the effectiveness of national price regulation in ensuring that towage operators pass on the benefit of the Government's reforms as lower prices. This is because the [PS Act] only requires declared companies to notify price increases and does not give the PSA power to set lower prices. While the Government's reforms should enable price reductions, the impact of inflation and declining tug demand will exert an upward pressure on price. In this context, price surveillance could be effective in reducing real prices. (PSA 1990, p. 61)

While price notification is unlikely to result in a towage operator with some market power adopting efficient prices when faced with costs that are falling over time, it will not necessarily discourage the operator from pursuing cost-efficient production techniques. This is because the operator can capture the gains of decreasing costs in higher profits. In this respect, price notification embodies some features of 'incentive' regulation.

Difficulties in determining 'efficient' prices

On receipt of a notification, the ACCC is required to assess the 'efficiency' of the proposed prices. Determining what constitutes an 'efficient' price is a complex task

(section 7.4), and recent decisions have been the subject of disagreement between the regulator and the declared harbour towage company.

To make a determination on the efficiency of prices, the regulator requires detailed information such as costs, revenues, capital expenditure and productivity improvements, about which the provider typically is much better informed than the regulator.

The ability of the regulator to determine whether the prices are 'efficient' is hampered by the short timeframe in which it is required to respond to the notification. The ACCC is required to analyse the data, consult with interested parties, and arrive at a decision within 21 days of receiving the notification.

As the ACCC argued in its submission to the Productivity Commission's review of the PS Act:

> Many notifications submitted to the ACCC under s. 22 of the PS Act involve complex issues. In many cases resolution of these issues requires a process of public consultations. In such cases the requirement in s. 21 [of the PS Act] to assess such notifications within 21 days is very difficult to achieve. (sub. 10, p. 32 in PC 2001)

In recent notifications (Adsteam in 2002 and Howard Smith in 1999), the ACCC has not been able to respond to the notification in the 21-day time period.

The short timeframe for notification reflects the original use of prices oversight regimes under the PS Act as an instrument of the prices and incomes policy, where the notifications were assessed primarily on the basis of changes in unit costs (PC 2001).

The ACCC has sought to introduce measures to increase the length of the assessment period by encouraging declared companies to submit the relevant information in a 'pre-notification' proposal (discussed below). The pre-notification option was used by Howard Smith in its 1999 notification to extend the assessment timeframe. In its 2002 notification, Adsteam did not notify the ACCC of its intention to submit a notification. Subsequently, the ACCC requested that Adsteam withdraw and resubmit the notification to allow it more time to consider the proposal (box 7.1).

The existence of common costs also provides challenges for the regulator in determining efficient prices. Common costs may be incurred by a declared company in the provision of declared and non-declared services. A harbour towage company operating in both declared and non-declared ports, for example, may incur common costs associated with providing administration and marine agency services.

A declared company may have an incentive notionally to apportion a large share of common costs to a declared service as a means of justifying higher prices to the regulator. For example, some participants have suggested that costs associated with ocean salvage operations are being recovered through harbour towage charges and then again through salvage revenue. These include costs of acquiring and operating larger, more expensive tugs than are necessary to provide harbour towage services. AAPMA noted:

> [Salvage] is of great concern to port corporations. Our concern relates principally to the choice by towage providers of the types of tug boats (design size, bollard pull or capacity and additional on board equipment/functionality) and the manner in which harbour towage customers are essentially charged for features that are not demanded and not required for the 'normal' provision of harbour towage services. (sub. 4, p. 4)

In Howard Smith's 1999 notification, after the issue was raised by a number of participants, the ACCC reduced the allowable price increase sought by Howard Smith, as it considered the proposed prices were based in part on costs attributable to salvage capacity (box 7.1).

However, any attempt by the regulator to allocate genuine common costs runs the risk of constraining the declared company's ability to recover these costs efficiently. If costs are common then there is no precise way to allocate them. Companies typically will allocate them according to the relative capacity of different markets to bear these costs. This may require that markets with relatively inelastic demand (that is, markets whose demand is less responsive to price changes) bear a greater share of common costs than those with more elastic demand.

Challenges faced by the regulator in assessing the efficient cost base also increase the risk that 'efficient' prices will be determined by adding a margin (declared companies are allowed to earn a 'fair' rate of return) to the existing cost base, in effect becoming 'cost-plus' regulation. To the extent that the cost base is inefficient, this could be passed on to consumers in the form of higher prices (assuming there was scope in the market to do so).

In responding to Howard Smith's 1999 notification, the ACCC determined that on the available evidence, Howard Smith appeared to be operating from an efficient cost base. In its determination on Adsteam's 2002 notification, the ACCC noted that it did not examine the efficiency of Adsteam's operations:

> … the [ACCC] has based its analysis on operating expenditures as advised by Adsteam. To the extent that inefficiencies may be present in Adsteam's operating costs, this would require a downward revision of the estimate of economic costs. The excess of current and proposed revenues over economic costs would thus be increased and the justification for higher charges would be further lessened. (ACCC 2002c, p. 14)

Lack of regulatory 'teeth'

Under the PS Act, the notification process does not allow the ACCC to control prices beyond the 21-day notification period. Instead, the system relies on moral suasion through the public disclosure of notification decisions as the means of ensuring compliance.

However, as noted by PricewaterhouseCoopers (PWC, sub. DR30, p. 9), the public inquiry function contained in the PS Act may also be used to restrict proposed price increases by declared companies. Under the PS Act, the ACCC, at the direction of the Minister, can undertake a public inquiry into specified matters and report its findings to the Minister who then makes a decision. Declared companies are liable to a penalty if they increase prices during the inquiry period without approval from the ACCC. Although the public inquiry function potentially can delay the implementation of a proposed price rise, as with the notification process, companies cannot be forced to comply with the Minister's decision once the inquiry has been completed.

In other declared industries, the process appears to have been successful in so far that declared companies have abided by the decision of the regulator. However, on two occasions — Waratah (a subsidiary of Adsteam) in 1999 and Adsteam in 2002 — towage operators have increased prices despite the ACCC objecting to the proposals (table 7.1). Consequently, some participants have questioned the efficacy of the notification system. As AAPMA argued:

> It is unclear to us to what extent the PS Act has affected pricing, investment and business management decisions in towage services, if at all. We do not believe the Act has provided any incentive to minimise costs or provide appropriate levels of service as demanded by the industry. The PS Act may have had some effect on other industries to which it has been applied … however, this approach has not been at all successful in relation to harbour towage where a declared entity has simply ignored two ACCC decisions without any repercussions. This is a ridiculous situation for any regulator, regulated entity or industry. (sub. 4, pp. 25–6)

The ACCC also expressed the view that there is a case for strengthening the notification process:

> Adsteam has increased its towage rates in spite of the ACCC's assessment that rises were not justified on two separate occasions. This represents not only ineffective regulation of towage rates, but also imposes costs both upon the company (Adsteam) and the regulator (ACCC), since under the PS Act, the company is obliged to submit a price notification for the ACCC to assess. These events demonstrate the weakness of the PS Act, as a regulatory tool, which … should be strengthened. (sub. 21, p. iii–iv)

Complementary inputs and competition in shipping markets

Harbour towage is only one component of the overall package of services required by ships to use a particular port. Other required services include pilotage, stevedoring and moorage. If other providers of port services have market power and have an incentive to exercise that market power, then it is possible that any benefits of reduced towage prices could be captured by other providers. As Gans and King noted:

> … when considering regulatory options for harbour towage on its own, one has to take into account what impact this will have on performance in other port services. We believe that say price regulation will not lead to reductions in the overall cost of shipping through a port and could merely redistribute rents through the chain of port production. (Adsteam, sub. 15, report 1, p. 24)

Whether this will occur will depend on the incentives facing port authorities and other providers of port services, and in particular, the level of competition in these activities.

Similarly, there is the possibility of shipping companies not lowering freight charges in line with reductions in towage costs if they are not subject to effective competition.

However, the potential for other suppliers in the transport chain with market power to benefit from lower harbour towage charges is not just limited to (any) reductions resulting from price regulation. It arises with any mechanism that presses towage prices towards efficient costs.

That said, it is the Commission's view that port reforms implemented in the 1990s (such as port corporatisation and privatisation) have improved the incentives facing port authorities to act in a commercial manner and minimise the overall costs of port visits. In addition, the level of competition between ports, and the level of competition in the shipping industry more generally, are expected to provide pressure to ensure that the benefits of lower charges are passed on to transport users. These issues are discussed in more detail in chapters 8 and 9 (port authority incentives and inter-port competition) and appendix B (competition in shipping).

Pricing flexibility

The compliance costs of current notifications (which are discussed further below) may limit the flexibility of declared firms to respond to changing economic circumstances through price adjustments and cause them to 'bunch' price increases.

Adsteam noted:

> Our problem has been the regulatory environment … leading to price bunching … We would much prefer to have slowly increased our prices every year or every second or every third year rather than have to face the wrath of our customers … We would much rather be able to adjust our prices as port authorities can, as shippers can, as cargo interests can and everyone else in the chain can.
>
> … The regulatory costs of going through a price notification process with the ACCC is about a quarter of a million to $300 000 … if you go for a, say, 2 to 3 per cent price rise and it costs you a quarter of a million to $300 000 to get it, you've just lost it because the costs of applying and going through the process immediately take all of that off you and that means that you are reticent to go through that process year in and year out with all the commensurate pain that goes with it. (trans., p. 150)

Price notification may also affect towage operators' incentives to reduce prices. According to Adsteam:

> Where there are price reductions — or the possibility of price reductions — Adsteam may not have passed them on as readily as it would have done in the absence of price regulation. This is because any future increases from the reduced price levels would have required further notifications, with all the attendant costs noted above. Price 'stickiness' has therefore occurred in both directions. (sub. 15, p. 59)

However, there are some limited provisions for price adjustment within the price-notification regime. Prices can be lowered and raised again as long as prices do not exceed the highest price within the last 12 months. Nonetheless, there may be some remaining disincentive to implement efficient price differentiation or flexible price structures.

FINDING 7.1

There are substantial deficiencies in the price notification arrangements applying to harbour towage services as a means of reducing any sustained price margin above efficient costs.

- *Notification does not allow for ongoing assessment of the efficiency of harbour towage prices.*
- *The regulator faces difficulties in determining whether proposed prices are 'efficient'.*

Administration of price notification

Since 1995, the notification regime has been administered by the ACCC. Between 1991 and 1995, it was administered by the ACCC's predecessor: the PSA. This section examines the ACCC's processes and procedures for implementing

notification in terms of the best practice principles of transparency, accountability and timeliness (box 7.2).

Box 7.2 **Best practice principles for administering prices oversight**

The Productivity Commission outlined the best practice principles for administering prices oversight: transparency, accountability and timeliness.

Transparency involves both governments and regulators seeking widespread public input into deliberations. This ensures that different sources of information and advice can be brought to bear, and that arguments and various points of view are open to public scrutiny and comment. Transparency also involves governments seeking independent advice on the development of policy and explaining the reasons for adopting a particular approach, and the regulator publishing the reasons for its decisions. The need for transparency should be balanced by the need to protect commercially sensitive information.

Accountability is important in ensuring governments and regulators are responsible for their actions, and that deficiencies in the prices oversight framework are identified and remedied expeditiously. Also, accountability ensures that regulators act impartially, with due regard for proper processes and within the limits of their authority. Accountability is enhanced where the regulator is required to achieve clearly defined objectives and to follow a transparent process.

Timeliness. The best practice framework suggests that the decision-making process should be implemented expeditiously without compromising the quality of decisions. Time lags in making decisions are likely to impose costs on regulated firms. The costs may include uncertainty about outcomes and delays in changing prices. On the other hand, a longer timeframe may provide the regulated firm time to prepare a response to a draft decision or to criticism from interested parties of a proposed price increase.

Source: PC (2001).

Transparency

The ACCC, under the provisions of the PS Act is required to undertake price notification in an open and transparent manner. Transparency requires regulators to seek widespread public input into their deliberations. The ACCC's approach to public consultation on notifications is outlined in its notification guidelines (ACCC 1998).

The ACCC appears to have undertaken public consultation on notifications in a transparent manner. For example, in relation to Adsteam's 2002 notification, the ACCC released an Issues Paper (ACCC 2002b) to gain participants' views on key issues underpinning Adsteam's price proposal. The ACCC received 15 submissions which, apart from those deemed to be confidential, were made publicly available.

The ACCC decisions on price notifications also have been made publicly available.[5]

However, as noted above, transparent and timely administration by the ACCC of its price notification function is being constrained by the increasing complexity of the notification proposals and the requirement to assess a proposal within the 21-day notification period.

'Pre-notification' was introduced by the ACCC in 1998 as a means of allowing more time for both the regulator and participants to consider and consult on complex price notifications (ACCC 1998).[6] The process allows for pre-submission of price notifications (draft notifications) which avoids triggering the 21-day notification period until the parties are ready to do so. Since February 1998, the ACCC has requested that declared companies pre-submit price notifications (although there is no requirement under the PS Act for the declared company to undertake prior consultation before lodging a notification) (ACCC 1998, p. 8).

Howard Smith submitted a pre-notification proposal in 1999. In response, the ACCC released a *Preliminary Statement of Reasons*, to facilitate involvement from participants and to allow Howard Smith to address the Commission's preliminary concerns in their formal notification. Also, the ACCC held a pre-decision conference to discuss issues arising from the notification with industry representatives (ACCC 1999a).

Adsteam chose not to use the pre-notification option in 2002. Indeed, the timeframe available for public consultation and for the ACCC to assess the Adsteam 2002 notification was the subject of some debate. In a submission to the ACCC, AAPMA expressed concern regarding:

> … the lack of time that [AAPMA] and other interested parties have to prepare comprehensive information. The pricing of towage services is a complex issue that requires careful consideration which cannot be reasonably undertaken in the time-frame provided. (AAPMA 2001, p. 1)

5 The PS Act requires the ACCC to maintain a public register of the official notification and its decision, but not of submissions supporting the notification (PC 2001, p. 65).

6 The PC (2001, p. 65) noted that there were some concerns relating to the transparency of the pre-notification process, as there is no formal requirement that documentation relating to the draft notification, draft decision and submissions from interested parties be placed on the public register. In practice the ACCC has made this documentation publicly available, as in the case of Sydney Airport Corporation Limited's pricing proposal.

Clayton Utz raised concerns about the risks of commercially sensitive information being released in the consultative process:

> … Adsteam is required to submit highly confidential information and risk the public release of that information in circumstances where Adsteam has little control over the process, or about the subsequent publicity generated about the notifications. The utility of this procedure is highly questionable. (Adsteam, sub. 15, appendix D, p. 2)

This raises a more general issue about commercial-in-confidence information and the transparency of the notification process. There is an inherent conflict between the desire to have information available for public consultation and comment, and the need to protect the commercial interests of declared companies. Part of Adsteam's 2002 notification, including information pertaining to key elements including tug asset values, was submitted on a commercial-in-confidence basis, as were a number of submissions and parts of submissions.

Accountability

Accountability requires that the objectives of legislation are clear, that the regulation is administered in a transparent manner that allows for external scrutiny and evaluation, and that there is provision for regular independent reviews of the prices oversight framework so that deficiencies can be identified and rectified. Issues regarding the transparency of the notification process have been discussed above.

In its review of the PS Act, the Commission found that the Act had inadequately defined objectives regarding the role and use of prices oversight as part of Australia's national competition policy and law framework (PC 2001, p. 53).

Since harbour towage services were declared in 1991, there has been one major review of the declaration (excluding the current inquiry).[7] The review, undertaken by the ACCC (1995), was a part of a general program of reviews of all declarations under the PS Act. The review was transparent in that submissions were sought and public hearings were held. While reviews appear to have been administered in a transparent manner, the accountability of the process may have been weakened by having the regulator undertake reviews of its own decisions and processes.

[7] Under the PS Act there is no requirement for a review, independent or otherwise, prior to the decision to renew a declaration.

Timeliness

Under the PS Act, the ACCC is required to deliver a decision within 21 days of receiving a notification. As noted above, the increasing complexity of notification decisions is making it difficult for the ACCC to arrive at a decision within that time period.

The ACCC introduced the pre-notification process to allow for an extension in the consultation and decision making time period. To date, Howard Smith's 1999 notification is the only notification to take advantage of this option. Even with the pre-notification process, the time taken between the notification and the delivery of the ACCC's decision was 27 days.[8]

Although Adsteam, in 2002, did not submit a pre-notification, it withdrew and resubmitted the notification to allow the ACCC more time to consider its proposal. In all, 53 days elapsed between Adsteam's initial, complete, notification and the final decision.

PWC considered that administrative improvements could be made to address some of the shortcomings of the notification process, such as the amount of time taken to assess notifications, without resorting to major amendments to the PS Act:

> Such administrative improvements include compelling the regulator to dispense with its 'pre-notification' process and provide quicker decisions under s. 22 of the Act. Failure to do so should attract scrutiny from an appropriate Commonwealth agency such as the Ombudsman or the Auditor General. (sub. DR30, p. 11)

However, removal of the pre-notification process would not relieve the regulator from the substantial challenge of determining what constitutes 'efficient' harbour towage prices within a short assessment period.

FINDING 7.2

There are tensions in the application of best practice principles to the administration of the price notification system, such as between transparency and timeliness.

8 Howard Smith agreed to extend the time available to the ACCC to make a determination (ACCC, sub. 21, p. 17).

Compliance costs

The complexity of pricing proposals and the increasing time taken to assess notifications have resulted in direct costs to declared companies submitting notifications. Adsteam noted that:

> Previous price notifications have … cost Adsteam up to $300 000 in consultancy and related fees, including legal fees when the numerous procedural issues that have arisen from time to time have required clarification. These costs are in addition to the huge time burden that the notification process places on Adsteam management, which is conservatively estimated to have been approximately $200 000 in recent notifications. (sub. 15, p. 59)

However, the ACCC argued that the low number of notifications submitted by declared companies indicated that the overall compliance costs of the system were small:

> … costs incurred by declared companies are often overstated. They need to be looked at over time and to be compared with the likely costs of alternative regulatory arrangements. There has been relatively few price notifications submitted to the regulators over the period of the declaration, consequently, the long term impact of the declaration on the costs of compliance for the towage companies is low. (sub. 21, p. 19)

As noted above, the costs associated with submitting a notification may have resulted in declared companies delaying notifications and thus, delayed implementation of warranted price increases.

Delays in reaching a decision on a notification also potentially can impose costs on the declared company, including reduced revenue and increased business uncertainty. Direct costs also are incurred by interested parties participating in the notification process and to the regulator administering the system (including consultants' fees).

FINDING 7.3

Costs arise for both the regulated entity and the regulator in relation to the current price notification system for harbour towage under the Prices Surveillance Act 1983. These costs have not been insignificant and would seem to have exceeded the benefits.

Should notification continue?

Some participants argued in favour of continuing the current declaration of harbour towage services under the PS Act (for example: Fremantle Port Authority (FPA), sub. 1; CSR Shipping, sub. 5; and Sea Freight Council of Australia, sub. 8).

The FPA (sub. 1) argued that the declaration be extended to cover the provision of towage services in the Outer Harbour (Kwinana) at the Port of Fremantle (currently only harbour towage services in the Inner Harbour are declared). The Sea Freight Council of Western Australia (sub. 8) argued that not only should the current declaration be continued, but also that:

> The process of declaration must be strengthened to ensure that harbour towage and related service providers seek approval from the Australian Competition and Consumer Commission (ACCC) in order to vary prices.
>
> The current system of notification of price variation to the ACCC is insufficient and facilitates opportunity for service providers to circumvent the spirit of the intention of the declaration process. (sub. 8, p. 1)

Other participants argued that the notification process, as it is applied to harbour towage, is ineffective and should not be continued. For example, Shipping Australia Limited (SAL) argued:

> … the Prices Surveillance Act is not an effective means of dealing with the significant market power in the provision of harbour towage services of Australia's major ports.
>
> In SAL's view, there have been no efficiency gains from such a prices oversight … SAL would not support the continuation of declaration of harbour towage services under the Prices Surveillance Act. (sub. 6, p. 15)

PWC considered that declaration should be continued as the shortcomings of the notification process result from inappropriate application of the system by the regulator, rather than a fundamental failing of the system itself:

> The factors limiting the promotion of efficient pricing … indicate regulator failure and not notification system failure. (sub. DR30, pp. 7–8)

However, it is difficult to attribute deficiencies of the notification process solely to the regulator. In the Commission's view the shortcomings of the notification process make it unlikely that any regulator could have achieved better outcomes.

In summary, it is the Commission's view that declaration, both as a general instrument of prices oversight and as it relates to towage specifically, has substantial deficiencies. These findings are consistent with the Commission's assessment of the notification system in a previous inquiry, which found that the price notification provision of the PS Act is no longer appropriate (PC 2001).

One possible option is to amend the PS Act to overcome the deficiencies identified in the notification provisions. However, this would require extensive amendment to the existing provisions and furthermore, is unnecessary given that alternative prices oversight instruments are already available where necessary, including price control (through industry-specific legislation), prices monitoring and the generic arrangements available under the TP Act. Each of these is discussed below.

Price notification under the Prices Surveillance Act 1983 (which currently applies to towage service providers at declared ports), is an inappropriate instrument to address potential misuse of market power in the provision of harbour towage services.

7.4 Prices oversight options

As noted above, the analysis in chapter 6 concludes that the provision of towage services at individual ports has natural monopoly characteristics and incumbent towage operators have some degree of market power. In ports where users cannot exert countervailing power, prices oversight is warranted when the advantages in dealing with market power exceed the costs of the regulation. At issue is whether a form of prices oversight other than price notification is warranted for the harbour towage industry. A number of prices oversight instruments are discussed below.

Price controls

Price controls are aimed at addressing cases of significant market power, where monopoly pricing is likely and the costs to the community of such pricing are high. They have significant information requirements, and require extensive involvement of the regulator in pricing and investment decisions.

With price controls, the regulator may determine maximum allowable prices or, alternatively, may determine the rate of permitted price increases (or decreases) over a given period of time.

While regulatory mechanisms can be introduced under the PS Act that aim to directly control prices (for example, the price caps that applied to a number of privatised Australian airports in the late 1990s were implemented under the PS Act), companies cannot be forced to comply with these mechanisms. If enforceable price controls were to be introduced for harbour towage services, it would require the introduction of industry-specific legislation.[9]

Price controls may take a number of forms, the two main approaches being cost-based regulation and incentive regulation.

9 There is some uncertainty surrounding the Commonwealth's powers to introduce price controls. However, the ACCC considers that the power does exist for the Commonwealth to regulate prices under the Constitution (PC 2001, p. 12).

Cost-based regulation

Cost-based regulation, such as cost mark-up or rate-of-return regulation, requires the regulator to set prices with direct reference to the costs of the regulated business. Rate-of-return regulation, the most common form of cost-based regulation, requires the regulator to calculate prices enabling the regulated business to earn an appropriate return on the capital assets employed.

Liston argued that the main advantage of such regulation is that it:

> … permits regulators, in a relatively simple manner, to limit monopoly pricing through a close monitoring of the firm's profits. The regulatory authority attempts to achieve this goal by directly regulating prices. (Liston 1993, p. 27)

To do this successfully, however, the regulator must calculate the value of assets held by the business, determine a 'fair' return on those assets (taking into account the riskiness of the business), calculate efficient operating costs, and finally determine the pricing structure which will deliver the permitted rate of return. These are difficult conceptual issues, to which there are no straightforward answers and which are often hotly disputed during regulatory processes. Considerable data are also required and compliance costs are high.

In addition to these challenging conceptual and computational issues, there are other disadvantages of rate-of-return regulation:

- the regulation may encourage the business to invest in more capital than it would in the absence of this form of regulation. If the allowed rate of return is greater than the cost of capital, profitability will increase if the business expands its capital base.[10] The use of a non-optimal mix of inputs may result in higher production costs than would be the case without regulation;
- where more than one good or service is produced, there may be a need to allocate common costs. In the case of towage, for example, costs may have to be allocated between general towage and salvage services; and
- the risk of investment is borne by customers. The regulated business can pass on the cost of the investment to the customer (PC 2002a, pp. 282–3).

A major underlying problem with rate-of-return regulation is that if a regulated business reduces its costs, the regulator will revise downwards the cost base upon which the regulated rate of return can be earned. While the full benefit of any cost savings will be passed on to consumers, regulated businesses will have little incentive to make the cost saving in the first place.

[10] This is known as the Averch-Johnson effect. For more information, see Averch and Johnson (1962).

Incentive regulation

Incentive regulation was developed in response to the disadvantages of cost-based regulation, especially the lack of incentive faced by regulated businesses to implement cost savings. Regulated firms subject to incentive regulation (such as price caps) are permitted to increase their prices by the consumer price index (CPI) less some amount, X, determined by government or the regulator.[11] The X amount is usually based on expected productivity gains to be achieved by the regulated firm over the regulatory period.

Firms are able to retain (as higher profits) any productivity gains in addition to those allowed for in the X. The Prices Surveillance Authority (PSA) noted that:

> As an alternative to cost-based surveillance, price capping offers significant potential advantages. Most importantly, the cap can act to restrain prices while also providing greater incentive for productivity improvement and cost efficiency. This is because the firm will increase profits if it performs better than the target 'X', but will be penalised if it does not. (1993a, p. 8)

The regulator's ongoing information requirements may be less than under cost-based forms of regulation. The regulator does not need to collect detailed information on the firm's cost structure and asset valuation each time price increases are proposed. However, substantial information is needed to determine the expected productivity gains at the beginning of the regulatory period. Other tasks which must be undertaken to establish an incentive-based regulatory regime include: setting initial prices; designing the basket of products subject to the regulation; re-evaluating the contents of the product basket; and selecting the appropriate price index (Liston 1993, p. 30).

Incentive regulation, compared with cost-based regulation, also provides firms with greater freedom to manage their businesses to achieve cost savings without regulator involvement. Vogelsang noted that:

> … [incentive-based regulation] means that the regulator delegates certain performance-related decisions to the firm and that the profits of the regulated firm depend on performance measures of the regulator. Incentive regulation makes use of the firm's information advantage. The regulator thus controls less behaviour but rather rewards outcomes. (2001, p. 1)

However, there are also problems with the use of incentive regulation.[12] Periodic resetting of the price cap takes account of the firm's costs and expected productivity improvements during the next regulatory period. Over time, therefore, incentive

[11] This form of regulation is also known as price-cap regulation or CPI-X regulation.

[12] Issues relating to the setting and operation of price caps are discussed in detail in PC (2002a).

regulation (in the form of a price cap) tends to converge to cost-based, rate-of-return regulation. Incentives to minimise costs are blunted as the regulated firm enjoys the advantages of cost reductions only until the next review of the regulatory regime (this is known as the regulatory lag).

As well as blunting incentives to reduce costs, Vickers and Yarrow argued that:

> Strategic behaviour designed to influence regulatory review could involve substantial losses in terms of allocative and productive efficiency … (1988, p. 87)

For example, if the period before the next review were short, a firm may delay introducing cost savings so that it could capture the benefits (as higher profits) in the next review. If cost savings were made before the review, these would be factored into allowed prices for the next regulatory period. The firm may be better-off delaying the introduction of savings until after the review.

Generic problems with price control instruments

In addition to the incentive problems and information requirements of cost-based and incentive-based regulation, there are generic problems with price-control instruments.

These include:

- regulatory capture — there are two main forms of regulatory capture:
  - where, over time, the regulator becomes heavily influenced by the industry or firm being regulated and thereby advances the interests of the firm rather than the community as a whole (this is generally considered more of a problem for industry-specific regulators); and
  - where, over time, a regulator identifies and advances the interests of a particular group, for example, consumers at the expense of others such as producers (this form of capture is more likely to affect generic regulators).
- regulatory risk — the activities of the regulator create additional uncertainty and risk for regulated firms (or firms which believe they are at risk of regulation). Regulatory risk may distort the incentives faced by firms and lead to behaviour inconsistent with that which would have occurred in more efficient markets.

There is also the risk that the regulator sets prices which would not have arisen in more efficient markets — thereby distorting the firm's production and investment decisions and leading to distortions in consumption decisions. The Bureau of Industry Economics noted that:

> … the ability of the regulator to mimic competitive pressures and outcomes is still limited. Where prices are determined, or strongly influenced, by regulatory agencies, it

> is likely that they will be set at inappropriate levels — either too high or too low. Where they are set too high, regulated firms will make excess profits and may undertake unnecessary investment. Conversely, where prices are set too low, profits will be insufficient to attract necessary investment. In these circumstances, there is a risk that price regulation will evolve into a process of regular price adjustments aimed at compensating for differences between past predictions and subsequent performance. (BIE 1995, p. 80)

Price control can also have the effect of truncating returns to firms. Firm performance, even in competitive markets, can vary over time and between firms. In some periods, firms may experience unexpectedly high returns while in other periods returns may be lower than expected.

If the regulator sets prices based on the expected value of returns, then firms are exposed to the risk of low returns, but do not have access to the higher than expected returns. These higher returns may not be due to monopoly pricing, as Cherry noted:

> Of course, actual returns may exceed the allowed return for a number of reasons; technological change, growth in demand, unanticipated increasing returns, vertical integration, and depreciation of the rate base may be the cause of actual returns being greater than the allowed return. (Cherry 1975, p. 225)

Regulators often attempt to 'claw back' the higher than expected return. For example, Cooper and Currie stated that in the UK many regulatory regimes applying to utilities:

> … have the effect of reducing returns that are high without commensurately subsidising returns that are low. For instance, proposals to claw back 'excessive' returns through so-called 'error correction mechanisms' have this effect. (Cooper and Currie 1999, p. 31)

The impact of such truncation of returns is to reduce the attractiveness of the regulated industry to investors, who can obtain a similar return from other investments with lower risk.

Price control also has the disadvantage that it does not deal with the underlying problem resulting in market power and pricing concerns — the lack of competitive pressures in the market.[13] The Hilmer Committee concluded that:

> Finally, from a government's perspective, resort to price control might be seen as an easy and popular way of dealing with what is in reality a more fundamental problem of

[13] Although the provision of harbour towage may be a natural monopoly in a particular port, competitive pressures may still be introduced by removing impediments to contestability or promoting competition 'for' the market (these are discussed in chapter 8).

> lack of competition in an area. Since price control never solves the underlying problem it should be seen as a 'last resort'. (Hilmer 1993, p. 271)

Price control instruments should be used with caution, as the costs of inappropriate application can be high. This suggests that prices should be controlled only in markets that display substantial market power and evidence of abuse of this power. The harbour towage industry is not characterised by such levels of market power (chapter 6).

FINDING 7.5

The costs and limitations of price control regulation are likely to outweigh significantly the benefits of using it to address potential misuse of the limited market power held by towage providers at some ports.

Price monitoring

Price monitoring can be a less intrusive alternative to price caps or cost-based regulation.[14] Monitoring may require nominated firms to provide price, cost, profit and/or other data to the regulator on a regular basis. However, unlike price control instruments, the regulator has no direct control over the prices charged, nor is it necessarily notified in advance of any proposed price increases. By way of example, the monitoring regime currently applying to the stevedoring industry is outlined in box 7.3.

Price monitoring more generally has been used when there are concerns about pricing and possible abuse of market power. The Government's purpose in introducing a formal price-monitoring provision in the PS Act is summarised in the second reading speech for the bill introducing the provision:

> Price monitoring may be appropriate where there is concern about the effectiveness of competition, a history of price problems or community concern about price levels or movements, or where industries have been recently reformed or deregulated. (HoR 1995, p. 2800)

Monitoring, through the provision of data and moral suasion, can temper the behaviour of firms with market power and dissuade excessive pricing. The ACCC, in its review of the harbour towage declaration in 1995, argued that monitoring:

> … raises the transparency and accountability of persons and industries subject to monitoring. This, in turn, reduces the incentive to raise charges and/or reduce service

[14] Monitoring may be formal, in the sense that it is backed by legislative powers to require firms to comply with the monitoring program, or it may be informal, in which case the monitoring is conducted using publicly available data.

quality that firms with market power might otherwise have. If monitoring detects such an abuse of market power, a strong and timely case for surveillance to be reapplied can be made. (ACCC 1995, pp. 81–2)

Box 7.3 **Monitoring of container stevedoring**

Since 1999, container stevedoring companies at the ports of Adelaide, Brisbane, Burnie, Fremantle, Melbourne and Sydney have been subject to a monitoring regime under the *Prices Surveillance Act 1983* and administered by the ACCC. The monitoring regime was implemented as part of the Government's reform program for the waterfront.

Under the program, Commonwealth Government funds were provided to ensure that all stevedoring employees made redundant as part of the reform process received full redundancy entitlements. A levy on the loading and unloading of containers and cars was applied to repay these funds. The major stevedore companies, P&O Ports and Patrick, agreed to absorb the cost of the levy: that is, their prices would not be increased to cover the levy.

The monitoring program was introduced with two objectives:

- to provide information to the Government and the wider community about the progress of waterfront reform at Australia's major container terminals; and
- to provide information about the absorption of the stevedoring levy by the stevedores.

Information for the monitoring program is provided by companies through a questionnaire issued by the ACCC. Information gathered includes revenues and costs disaggregated by source, net profits, assets and funds employed and returns on assets and funds. Throughput data are also provided, as is information on employment numbers and designations. All data are disaggregated to the level of the individual terminal. Data are collected on a six-monthly basis and published in annual reports. For reasons of commercial sensitivity, data at the company, port and terminal level are presented in the form of indexes (rather than dollars) per twenty-foot equivalent unit (TEU). To date three monitoring reports have been released by the ACCC (1999b, 2000 and 2001c)

Sources: ACCC (1999b; 2000; 2001c).

Monitoring also may have a role in providing oversight of firms and industries during a period of transition to a more competitive environment. The Industry Commission (IC) argued:

> In industries previously subject to prices surveillance, a transitional period of prices monitoring may be a useful device for assuring consumers that unforeseen difficulties will be quickly identified … Transitional prices monitoring would allow governments to avoid stepping away from an industry so quickly that necessary public support for reform is undermined. (1994, p. 83)

Monitoring also permits the regulator to collect information on a regular basis. In contrast, under the current notification arrangements, the ACCC only receives information from towage companies when they submit a notification for a price increase.

A monitoring system was applied to the harbour towage industry in the early 1990s by the PSA to complement the notification system. The objective of the monitoring program was to help ensure that cost savings achieved by reforms in the industry were passed on to towage users (box 7.4).

Box 7.4 **Prices Surveillance Authority monitoring of harbour towage charges**

The Prices Surveillance Authority (PSA) in its 1990 inquiry into the harbour towage industry, recommended that a monitoring program be implemented to complement the declaration of harbour towage charges at Australia's major container ports. The monitoring program was part of the regulatory package implemented by the Government to help ensure that the anticipated cost savings achieved by reforms in the towage industry would result in lower towage charges. One report was released under the monitoring program in 1993 (PSA 1993).

The monitoring program applied to the ports where harbour towage services were declared (Brisbane, Newcastle, Sydney/Port Botany, Melbourne, Port Adelaide and Fremantle) and to other ports where reforms had occurred. These ports were Gladstone, Port Kembla, Hastings, Geelong and Whyalla. Ports where it was considered that users had considerable influence over towage charges (for example, the port of Weipa where Comalco is the sole user of towage services) were not included in the monitoring program.

To assess the impact of reforms the PSA surveyed towage operators. Data requested included details of reforms implemented, the dates of implementation, cost savings that were expected to occur, costs of implementation (for example, redundancy payments and cost of crew retraining), revenue and profitability data and towage charge schedules. Towage operators were given the opportunity to explain any particular circumstances which would affect the flow-through of the reforms.

The conclusions from the monitoring program were that, generally, charges had not been reduced along with the implementation of the reforms. The impact of the reform process had been, at best, to restrain charges (although there had been increases in some ports). The monitoring program ceased in 1993.

Source: PSA (1993)

While monitoring can be a more light-handed form of prices oversight compared with notification or price control, it can become more onerous and intrusive if the indicators to be monitored are excessive or are not clearly specified at the beginning of the monitoring program. Alternatively, if the information requirements are too

light-handed and do not seek appropriate information, then the monitoring program may be ineffective. The nature of the information required and the degree of intrusiveness into the firm's operations should be carefully balanced.

Clear and unambiguous specification of the indicators to be monitored at the beginning of the program, targeted at obtaining information relevant to the problem, is necessary to ensure the benefits of monitoring exceed the costs. In particular, clearly setting out the monitoring program ensures that the monitored firm is not subject to expanding information requests (or 'fishing expeditions') from the regulator, which would create uncertainty and generate additional compliance costs.

FINDING 7.6

Price monitoring, if undertaken through clearly specified and focussed indicators, may have a role during a period of transition from a system of prices surveillance.

7.5 Access and general competition law

At the Commonwealth level, the TP Act prohibits certain types of market conduct, which may limit or prevent active competition in a market — it is aimed at firms acting to use their market power in an anti-competitive manner. The two key areas of the TP Act relevant to the issue of market power in towage are Part IV (which prohibits a range of anti-competitive practices) and Part IIIA (which establishes the national access regime).

Part IV of the Trade Practices Act

Part IV of the TP Act sets out Australia's generic legislative arrangements for addressing restrictive trade practices. The ACCC provided the following summary of Part IV:

> Broadly speaking, Part IV of the Act prohibits the following anti-competitive trade practices:
>
> - anti-competitive agreements and exclusionary provisions, including primary or secondary boycotts (s. 45);
> - misuse of market power (s. 46);
> - exclusive dealing (s. 47);
> - resale price maintenance (ss. 48, 96–100); and
> - mergers which would have the effect or likely effect of substantially lessening competition in a substantial market (ss. 50, 50A). (2001b, p. 17)

Harbour towage (and the rest of Australian business) is already subject to the provisions of the TP Act.[15] The two sections of direct relevance to harbour towage are s. 46 and s. 50.

Section 46 addresses misuse of market power, but does not prohibit a firm from having market power. The section prohibits a firm with a substantial degree of market power from using that power for the purpose of:

- eliminating or substantially damaging a competitor;
- preventing the entry of a person into any market; or
- deterring or preventing a person from engaging in competitive conduct in any market.

Although some pricing practices, such as predatory pricing (where a firm underprices its goods or services to weaken or cause a competitor to fail), would be prohibited under s. 46, the section does not prevent a firm with market power charging excessive prices.[16]

The harbour towage industry is also subject to the merger provisions of the TP Act. Sections 50 and 50A of the TP Act prohibit mergers or acquisitions that are likely to lead to a substantial lessening of competition in a significant market. In 2001, the ACCC decided not to oppose the acquisition of Howard Smith's towage assets by Adsteam because it found that the acquisition would be unlikely to result in a substantial lessening of competition in the relevant ports (ACCC 2001a).[17]

The merger provisions do not prevent the acquisition of market power through exploitation of superior technology or innovation, or as the result of the failure of competitors. Merger provisions also do not contain explicit powers to enable prices oversight to be applied to the merged entity if there are fears of possible abuse of market power in the future. However, it is possible, as a condition for permitting the merger to take place, that the Federal Court could impose some price monitoring

15 Under the authorisation (ss. 88–91) and notification (ss. 93–93A) provisions of the TP Act, the ACCC can grant immunity from legal proceedings for some arrangements or conduct that otherwise might breach the anti-competitive practices provisions of the TP Act.

16 The Trade Practices Commission argued in favour of including a pricing power in an amended s. 46 in their submission to the Inquiry into Mergers, Market Dominance and Unconscionable Conduct undertaken by the Senate Standing Committee on Legal and Constitutional Affairs in 1989. The Prices Surveillance Authority, in its submission to the Hilmer Committee (PSA 1993c, pp. 42–3) argued against such an amendment, largely because of problems which may arise from drawing the courts into considering pricing issues.

17 Howard Smith and Adsteam had already been operating joint ventures in the ports in question. The acquisition of assets therefore represented a change in shareholding rather than a substantive change in the structure of the market.

regime on the merged entity. In addition, conditions also may be placed on a merged company's prices under s. 87B of the TP Act. For example, Waratah provided the ACCC with an enforceable undertaking pursuant to s. 87B as a condition of its merger with Hunter Towage Services at the Port of Newcastle. The undertaking required Waratah's towage rates at Newcastle to not exceed December 1998 levels for three years from June 1999, and for Waratah to abide by the ACCC's decisions with respect to submitted price notifications for that port for as long as the company remained subject to declaration.

SAL considered that there might be potential for the provisions contained in Part IV of the TP Act pertaining to unconscionable conduct to provide an additional safeguard against the misuse of market power by towage providers:

> [SAL] question[s] whether there is potential, for example, for the unconscionable conduct provisions of the [TP Act] to be employed as a back-up mechanism to reduce the potential for abuse of any market power, particularly in those cases where, for one reason or another, a port does not enter into a competitive tendering situation and monitoring indicates excessive profits are being earned. (sub. DR34, p. 3)

The TP Act was amended in 1998 to provide a body of law to protect small businesses from unconscionable conduct in business transactions. To this purpose s. 51AC was added to Part IV of the Act to improve upon existing provisions relating to unconscionable conduct. The objective for the provision is outlined in the second reading speech for the bill introducing the amendment:

> This bill deals with unfair conduct in business transactions between companies both big and small …
>
> Small businesses … often have trouble in their dealings with big business, particularly in areas such as having little or no ability to negotiate the terms of a contract; inadequate disclosure of relevant and important commercial information, which the financially weaker party should be aware of before entering into the transaction; and inadequate and unclear disclosure of important terms of the contract, particularly those which are weighted against the financially weaker party. (Senate 1998, pp. 1708–9)

Currently, the provision does not apply to transactions greater than $3 million, or to transactions in which the business subject to the conduct is a listed public company (ACCC 2001b). Moreover, the provisions deal with unfair conduct in business negotiations and transactions, rather than directly addressing misuse of market power through monopoly pricing, which is the major concern of towage users.

Overall, Part IV of the TP Act is designed to discourage monopoly pricing indirectly by prohibiting certain anti-competitive practices which may be used to exercise monopoly power. It is not explicitly intended to be a substitute for other forms of prices oversight or regulation.

Part IIIA of the Trade Practices Act

The national access regime established by Part IIIA of the TP Act provides for third-party access to the services of certain essential facilities of national significance in proscribed circumstances.

The access regime is intended to facilitate competition in markets upstream or downstream of the essential facility, by allowing potential competitors access to the facility. For example, in the case of towage, competition in the market for towage may be enhanced if a potential competitor to the incumbent was able to get access to existing maintenance or wharf facilities and berths.

The national access regime is particularly concerned with promoting competition where the incumbent is part of a vertically-integrated industry.[18] In this case, the facility owner (such as a port operator which also provides towage) controls the essential facilities that a competitor may need to access in order to provide towage services in competition with the incumbent.

In providing for access to essential facilities, the national access regime results in regulation of the terms and conditions (including price) for the use of the facility. The access regime may therefore provide some form of oversight (or control) of prices for the use of the essential facility. Forsyth argued that, under certain conditions, the regulation of prices and access regulation can result in similar outcomes:

> Final product and access price regulation are, to a significant extent, substitutes for one another. If access price regulation of rail track is effective, for example, and if there is strong competition at the level of rail operators, then it will not be necessary to regulate rail operations. If final product regulation of airports is effective, detailed access regulation of the various airport facilities will be superfluous. (Forsyth 1999, p. 39)

However, before a service is subject to the national access regime, the service must be declared by the National Competition Council (NCC) or be the subject of an undertaking to the ACCC. In deciding whether to declare a service for the purposes of access, several conditions must be satisfied. The ACCC noted that:

> The Council [NCC] may recommend declaration of a service if it is satisfied that:
>
> - access to the service would promote competition;
> - that it would be uneconomical for anyone to develop another facility to provide the service;
> - the facility is of national significance;

[18] In practice, access has been applied to essential facilities which are both vertically integrated and separated.

- access would not cause undue risk to health or safety;
- access is not already the subject of an effective regime; and
- access would not be against the public interest. (2001b, p. 15)

It is unclear whether facilities essential to the provision of harbour towage services would satisfy the criteria for declaration under the national access regime. This has not been tested as there have been no applications for declaration of facilities used by harbour towage operators under the national access regime.

8 Options for increasing competition in the provision of harbour towage

The analysis in chapter 6 concludes that the provision of towage services at individual ports has natural monopoly characteristics and incumbent towage operators have some degree of market power. The potential for the misuse of market power by towage operators is sufficient to warrant consideration of what prices oversight or further structural or regulatory reforms may be justified.

In chapter 7 it is concluded that prices notification and price control regulation are not warranted given the costs of such instruments relative to the benefits from regulating the market power of towage providers. This chapter therefore addresses terms of reference 5(b), which requires the Commission to report on measures that could be taken to increase the level of competition in harbour towage and related services.

Reforms designed to increase the degree of competition in the provision of harbour towage can potentially address the causes of market power directly, and act to constrain excessive pricing, while avoiding the problems inherent in prices oversight regulation.

8.1 Generating competition 'within' the market

The provision of harbour towage services at individual Australian ports exhibits natural monopoly characteristics. A single provider of towage services at each particular port is likely to be the most efficient industry structure. However, the threat of entry, or actual entry that generates competition 'within' the market, to the extent it may occur, will provide some discipline on the incumbent service provider.

However, an indirect regulatory barrier to promoting competition within the towage market may be the specification by port authorities of the number of tugs required (chapter 4). If guidelines are overly cautious and pilots lack discretion over the number of tugs required, this may force a new entrant to enter the market with more tugs than are required to service the market (and meet safety requirements). The higher start-up capital costs may deter entry and forestall competition in the market, thereby limiting scope for competition 'within' the market.

FINDING 8.1

There appears to be little scope for sustainable long-term competition for towage services within most, if not all, Australian ports (that is, competition 'within' the market).

FINDING 8.2

While there is a need for further regulatory reform in the towage market, such reforms are unlikely to generate ongoing competition in the provision of towage within Australian ports.

8.2 Generating competition 'for' the market

If competition 'within' the market is not likely, competitive pressures may still be introduced through competition for the right to service the entire market.[1] The issue becomes one of determining the best process to choose the service provider that will provide towage services for the port at the required quality at the lowest price (appendix E). One option is for a new entrant to commence operations and compete vigorously with the incumbent until one firm is forced to exit the market. Alternatively, a process of mergers or takeovers may lead to a single towage provider in a particular port. Thirdly, the government, port authority or users could conduct a tender for the right to provide towage services in the port for a specified period of time.[2] This chapter will concentrate on competitive tendering and its role in increasing competition 'for' the market.

New entry and the 'war of attrition'

The characteristics of the towage industry mean that it is possible for a new entrant to challenge an incumbent towage operator (especially in the larger ports where the volume of tug jobs is higher and economies of scale are closer to exhaustion), but for only one provider to survive in the long run (chapter 6). In effect, the period of competition between two operators is a mechanism for determining which one is more efficient and therefore will supply the market in the longer term.

1 Competition for the market has been seen as an alternative to regulation of a natural monopoly at least since Demsetz (1968).

2 It would be possible for governments to conduct a tender for the provision of towage services. However, it is more likely that port authorities or users would initiate and undertake such a process.

New entry can generate strong competitive pressures, however, the 'war of attrition' process can result in significant uncertainty amongst industry participants. The length of time until one firm exits the industry is uncertain. Ship operators may be cautious about entering into a long-term contract with a particular towage provider if there is an expectation the operator may fail.

Pricing over time is also likely to range from a level which is probably loss making for the operators during the competitive period, to a price above average cost (reflecting the extent of barriers to entry) when only one operator survives. Inefficient pricing is therefore likely to exist before, during and after the 'war of attrition' (Tirole 1988, p. 312). The pricing dynamics add an additional layer of uncertainty for industry participants.

In addition, during the period when two operators are competing to win the market, the 'war of attrition' involves real resource costs to the community. More capital equipment (in the form of tugs and land-side facilities) and labour are being used in the provision of towage services in that port than are efficient. For example, with the new entry of Australian Maritime Services (AMS) in Melbourne there are now seven tugs servicing Melbourne whereas, before the entry of AMS, the port was efficiently served by five tugs (chapter 2).

Mergers and takeovers

The harbour towage industry has experienced substantial industry rationalisation, largely through merger and takeover activity (chapter 2). This process provides another mechanism through which the sole provider of towage services in a particular port is determined.

The possibility of merger or takeover also puts pressure on incumbent operators to minimise costs and provide quality services to users. Efficiently operating capital markets will ensure that under-performing towage operators are taken over by those who believe they can run the operation more efficiently.

In addition, a merger or takeover can be one way of ending a 'war of attrition' between two towage providers.

Mergers and takeovers are not a costless mechanism for deciding which towage provider will continue to operate in the port. There are costs in relation to the preparation of the takeover documents and finalising the consolidation. In addition, further real resources, such as tugs and other capital equipment and labour may continue to be used until there is a rationalisation of operations following the merger or takeover.

Competitive tendering for the right to supply the market

Port authorities or towage users could conduct a tender for the right to supply the market, thereby providing an alternative mechanism for deciding which towage operator will provide services at a particular port — in effect selecting the least-cost service provider for a specified service quality.

Several user-owned and single-user ports have negotiated and contracted directly with towage operators (chapter 4). In ports where there is a small number of users with similar requirements, it is possible that the users themselves may conduct a tender for the provision of towage services and contract directly with the successful towage provider.[3] For example, at Marsden Point in New Zealand, the largest port customer conducted a tender for towage services in 1998 and awarded the contract to a new operator, thereby displacing the port authority as the provider of towage services (Adsteam, sub. 15, report 3, p. 13). In such cases, the interests of users would be directly reflected in the tender process.

In ports with a larger number of users, it may be more efficient for the port authority to represent the towage users because of the transaction costs involved in coordinating a diverse group of users. That is, the port authority is likely to conduct the tender and license the successful bidder on behalf of port users. For example, as it may be difficult for a diverse group of users to come to an agreement on the services required, it may be more efficient for the port authority to set a level of service that it perceives to be in the interests of all users. In such cases, it is essential that the port authority consult widely with users to determine their towage requirements.

Where there was previously a single incumbent provider, competition at the bidding stage (for a direct contract or towage licence) introduces competitive pressures, which may have been previously absent in the industry, thereby constraining prices and profits to more competitive levels.[4]

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3 The PSA (1990) noted that the formation of buying groups by shipping lines may be an option for increasing competitive pressure on an incumbent towage operator. However, it also notes that such arrangements may breach the anti-competitive practices provisions of the Trade Practices Act (TP Act). If there were significant net benefits from such buyer groups, their actions could be authorised under s. 88(4) of the TP Act, thereby avoiding action under s. 46 (PSA 1990, pp. 52–3).

4 The tender could be awarded to the towage operator that will provide the services specified at the lowest price. However, the lowest tendered price may not necessarily be the price that would exist in a perfectly competitive market. How close the tendering outcome was to the efficient outcome would depend on the strength of competition in, and the rigour of, the tendering process.

Viscusi, Vernon and Harrington argued that effective competition 'for' the market:

> … can achieve the same outcome as regulation but at lower cost, since less information is required and a regulatory agency need not be established. A second advantage is that the inefficiency of rate-of-return regulation is avoided. With franchise bidding, there is no incentive to over capitalise … (2000, p. 399)

Sea Freight Council of Western Australia argued that:

> … a process of periodic competitive tendering would seem to be a very effective strategy to gain the most operationally and cost-effective outcome for the provision of harbour towage services. (trans., p. 133)

Fremantle Port Authority (FPA) maintained that, prior to the introduction of tendering for licences to provide towage services, customers were concerned that the lack of competition in the provision of towage services had resulted in high costs and low levels of reliability. FPA noted that:

> … the issue of licences through a competitive tendering process has gone a long way towards redressing these concerns. Prices have now been reduced and … Recent surveys have shown that there has been a marked improvement in customer satisfaction. (sub. 1, p. 2)

A tendering process provides the opportunity to set out explicit requirements for quality, pricing and other conditions for the supply of services. For example, in Bunbury the tender specifications required the towage operator to provide a 24-hour, 365-day-a-year service and have a back-up tug available (Federal Court of Australia 2000a, para. 19). The tender specification in Fremantle required towage prices be to be fixed for two and a half years (FPA, sub. 1, p. 2).

A competitive tendering process can also facilitate a more 'managed' transition to a new towage operator in a port, compared with the 'war of attrition' which may follow the attempt by a new operator to take on the incumbent in an unregulated market. Economic Associates argued that a periodic tendering process:

> … may provide protection to port authorities and users against the instabilities of competition. Ordinarily, the movement of players in and out of an industry is a necessary concomitant of the benefits of competition. In complex integrated businesses such as ports, that movement may be disruptive to port activity. (2001, p. 27)

There is likely also to be greater certainty of towage prices into the future. Prices may be expected to be adjusted at the time the tender is awarded, and there is likely to be some formula set out in the contract or licence which govern future price changes. In addition, tendering processes provide ship operators with certainty as to the availability of services by a particular operator for the period of the agreement.

However, given the limited experience in Australia to date, the long-run outcomes from competitive tendering for contracts or licences issued by port authorities are unclear. Economic Associates argued that:

> There can probably be no doubt that in the first round, exclusive licensing supported by competitive tendering will improve outcomes for towage customers. It is open to question however whether those gains will be sustained through to the second round in five to ten years time, and whether the outcome will be a more efficient industry in the long term. (2001, p. 27)

When the incumbent operates in a number of ports, it may bid aggressively in the first tender to signal that it intends to defend its territory vigorously. This may have the effect of reducing the number of bidders in subsequent tenders, or alternatively, force the new entrants to bid too aggressively and suffer the 'winner's curse',[5] allowing the incumbent to regain its position in subsequent tenders (Economic Associates 2001, pp. 26–7).

FINDING 8.3

Competitive tendering for the right to provide towage services in a port offers an alternative and potentially more effective mechanism for promoting competition 'for' the towage market in a port, resulting in more efficient pricing and service outcomes.

8.3 Issues with competitive tendering

In principle, a competitive tender which generates competition 'for' the market can ensure the most efficient bidder, for a given service level, is successful and becomes the service provider. However, in practice, several conditions need to be satisfied to ensure the best possible outcome from tendering 'for' the market. There also may be industry-specific issues that affect the success of tendering in general and at particular ports.

Vickers and Yarrow (1988, p. 111) argued that three general problems may affect the validity of tendering outcomes:

- uncompetitive bidding for the tender;
- problems of asset hand over; and
- difficulties specifying the tender contract, and monitoring compliance.

5 The 'winner's curse' describes a situation where the winning bidder overvalues the asset (possibly because of information asymmetries) and hence offers to supply the service at too low a price.

Competition at the bidding stage is crucial to achieving the most efficient outcome from the tender. Viscusi, Vernon and Harrington argued that:

> As long as there is sufficient competition at the bidding stage, franchise bidding results in average cost pricing and the most efficient firm operating. (2000, p. 399)

Tenders for the provision of towage services at the ports of Bunbury and Fremantle have demonstrated that there are a significant number of players (both domestic and international) willing and able to compete to provide towage services.[6] At Fremantle, for example, ten submissions were received from Australian and overseas operators for the first stage of the tender (FPA, sub. 1, p. 2). In addition, NECG (Adsteam, sub. DR43, report 3, pp. 32–6) indicated that there is a range of prospective and current competitors to Adsteam who either have bid at tenders in the past or who would be in a position to participate in future competitive tenders.

Problems of physical asset hand-over apply when the incumbent firm is required (as part of the franchising contract) to leave some capital equipment for the new franchisee. In the case of towage, this does not appear to have been a problem. Capital, in the form of tugs, is highly mobile and may be purchased (new or second-hand) or leased. In Bunbury, where the tender resulted in a change in operator, the new operation brought in its own tugs to meet the terms of the contract. Wharf and other land-side facilities were provided by the port authority.

The issue of contract specification and monitoring is discussed in a separate section below.

Exclusive or non-exclusive licences

Competition 'for' the market may involve the issuing of exclusive or non-exclusive licences. A non-exclusive licence would enable a new entrant to enter the port and provide towage services but with no guarantee of market share — it would enter the port as an operator in competition with the incumbent. Effectively, non-exclusive licences provide permission to operate at the port. Exclusive licences ensure that the company winning the licence would provide all towage services in the port for the duration of the licence period. Both types of licences have been offered in Australian ports.

Adsteam (sub. 15, pp. 61–2) argued that exclusive licences have clear quasi-regulatory characteristics and can, among other things: create a barrier to entry;

6 If the port was a vertically-integrated operation that also provided towage services, the port authority could also participate in the tender — but issues of transparency and probity would need to be addressed in relation to the tender process.

limit competition; stifle innovation and dynamic efficiency; remove choice from customers; and place greater power and responsibility in the hands of port authorities. Adsteam concluded that:

> Adsteam does not consider exclusive towage licences to be anything other than a regulation of last resort, and even when competition concerns are raised there is no guarantee that the detriment associated with exclusive contracts will be outweighed by the anticipated benefits. (sub. 15, p. 63)

Adsteam also noted that the Commission, in previous work examining the provision of port services and licensing arrangements, has:

> … recognised at least some of the potential shortcomings of exclusive licensing arrangements. (sub. 15, p. 61)

However, the (then) IC also argued that the use of non-exclusive licences in natural monopoly situations could:

> … bring its own costs. For example, under a non-exclusive licence approach a new entrant to towage (say, following negotiation with a bulk grains shipper) may undercut the price of the incumbent natural monopoly towage provider. For as long as both operators supply services within the port, total demand would not be satisfied at least cost. Sooner or later one of the operators would leave the market … If this were to occur frequently, not only would demand often not be supplied at least cost, but there could be significant dislocation costs. (IC 1993, p. 112)

In the case of other port services, which were not characterised by natural monopoly, such as pilotage services, the IC (1993, p. 113) was much more cautious about the benefits of exclusive licences.

An exclusive licence ensures monopoly supply of towage services for the duration of the licence. Competitive pressures from the entry, or the potential entry, of another operator are removed. However, Justices Burchett and Hely[7] argued that under an exclusive licence:

> There will be a shift from a natural monopoly to a legally enforced and controlled monopoly, but the market behaviour of the successful tenderer will be regulated by the terms of the agreement which results from the competition for the market brought about by the tender process. (Federal Court of Australia 2000b, para. 25)

In addition, under an exclusive licence, towage users will have to use the towage provider in that port and there may be a common schedule of charges for all towage users. Towage licences may impose economic costs if they specify that all users be charged according to a common rate schedule when the cost of servicing those users

[7] Justices Burchett and Hely (and Carr) sat on the full bench of the Federal Court hearing the appeal case of Stirling Harbour Services Pty Ltd v Bunbury Port Authority.

differs and there is scope for efficient price discrimination. This may be regarded as 'fair' but it may not be economically efficient.

Other participants supported the use of exclusive licence arrangements primarily because the guarantee of market share overcomes significant incumbency advantages enjoyed by the current towage provider. AAPMA, for example, argued that:

> If the incumbent were to be allowed to remain in the port, it would render the tender process irrelevant as the incumbent would be in a very strong position to engage in either aggressive competitive activities or even anti-competitive behaviour over a short period of time until the new provider failed. (sub. 4, p. 24)

Similarly, Dale Cole & Associates argued that, based on its national and international experience, it can:

> … demonstrate that in low volume ports competitive outcomes are only possible through the mechanism of an exclusive licence. (sub. 9, p. 4)

Dale Cole & Associates further argued that:

> … cost efficiency in the harbour towage sector will only be achieved by the issuance of exclusive licences. The evidence that has been quantified to date shows that exclusive licensing will deliver price reductions, which far outweigh the cost of writing, monitoring and enforcing exclusive ('for the port') licence regimes. (sub. DR33, p. 3)

The central issue in exploring the advantages and disadvantages of the two types of licence is the extent to which they promote competition and efficient outcomes in the provision of towage services. Evidence from tenders conducted at Australian ports indicates that new-entrant towage companies are much more in favour of exclusive licences. For example, based on its experiences with calling for tenders for the provision of towage services, FPA noted:

> … that the interest from non-incumbent suppliers was primarily for exclusive licences — this no doubt is a reflection of the high sunk capital costs of market entry and highlights the fact that high capital costs are a barrier to market entry where there is a threat of competition with the possibility of price wars. (sub. 1, p. 2)

The greater interest of potential entrants in exclusive licences suggests that incumbency advantages can be significant and that the awarding of exclusive licences can negate some of the advantage enjoyed by incumbent operators.

Furthermore, the benefits of this competition appear to be passed on to the users of towage services. Dale Cole & Associates noted that the offer of a non-exclusive licence at Fremantle resulted in a reduction in towage charges of approximately 15 per cent, while the offer of an exclusive licence resulted in bids to reduce towage charges by an amount in excess of 30 per cent (sub. 9, p. 4).

FINDING 8.4

In certain circumstances, exclusive licences for the provision of towage services have the potential to generate greater benefits for towage users than non-exclusive licences.

Regulatory impediments facing port authorities

Lack of regulatory clarity may be acting to limit options for port authorities in relation to enhancing competition 'for' the market. Uncertainty over their powers may mean that the option of exclusive licensing for towage services may not be actively considered.

Shipping Australia Limited (SAL) argued that regulatory arrangements are not acting as an impediment to the operation of port authorities:

> It is not believed that impediments to increasing competition arise from current regulatory or structural arrangements, except that there has been a reluctance, in the past, for Port Corporations and their stakeholder Governments (where relevant) to implement exclusive licensing arrangements. (sub. 6, p.13)

However, AAPMA argued that:

> In some cases, port corporations are specifically restricted from issuing licences, in some it remains unclear whether licences are allowable, while in other cases, licensing is clearly an option. There are also uncertainties in some states as to whether licences can be exclusive or not. (sub. 4, p. 10)

AAPMA further argued that:

> … the main impediment to being able to generate competition for the market (through licensing or other arrangements) is the inability of port corporations, or uncertainty surrounding whether they have the legislative authority, to issue licences for towage and other services within the port. (sub. 4, p. 22)

In Queensland, regulation 44 of the *Transport Infrastructure (Ports) Regulation 1994* permits certain ports to license towage services. However, it is not clear if other ports, not explicitly permitted to license services, are able to do so (appendix D).[8] In Western Australia, port authorities may undertake tenders for the provision of towage services but the Minister for Transport may apply a 'public interest test' to the tender result when the tender was for an exclusive licence. This permits the Minister to intervene in the commercial operation of the port authority and the Minister has the power to disallow a winning tender (appendix D).

8 A draft final report of a recent National Competition Policy review of regulation 44 has recommended that it be extended to all Queensland ports (Economic Associates 2001).

It is clear from comments made by port authorities during the inquiry that they consider they are unable to tender for towage licences without explicit authority. The Port of Brisbane Corporation noted that:

> We think the legislation is quite explicit and we've had some discussions with government on that. I mean, there are named ports that have the ability to license and Brisbane is not one of them, so we take that as a letter of the law that's printed basically and we press that no further. (trans., p. 8)

Similar sentiments were expressed by the Melbourne Port Corporation, which argued that:

> … it's essential to have the head of power in the statute in order to carry out licensing. In the absence of that it's really a non-issue as far as the corporation is concerned. (trans., p. 105)

FINDING 8.5

In some States, specific regulation and uncertainty over the powers of port authorities may be inhibiting consideration of the full range of options for promoting competition 'for' the market in towage services.

Incentives facing port authorities

NECG noted that the final users of towage services might not benefit because of the actions of port authorities. Adsteam argued that:

> … port authorities do not act solely or even largely in shipping operators' interests or solely to maximise economic efficiency. Port authorities face incentives which can mean that their first priority is to pad their own budgets rather than pass cost savings onto consumers … (Adsteam, sub. DR43, report 3, p. 7)

The Commission agrees that the question of the incentives facing port authorities is central to ensuring the best possible outcome from conducting competitive tenders for towage licences.

Ship owners desire towage services that are provided at the lowest price for the desired level of service quality. The issue therefore arises as to whether port operators face appropriate incentives to act on behalf of ship owners when it is the port authority which conducts the tender and licenses the successful operator. The ACCC argued that an important consideration in deciding whether to conduct a tender for towage services is:

> … that the port authorities themselves need to have sufficient incentive to implement a tender process that will provide the users of harbour towage services, such as shipping lines, with a product of an efficient price and quality. That is, the port authority may be only an indirect beneficiary of a tendering process. (sub. 21, p. 23)

The ACCC reiterated that it:

> … is concerned that port authorities as monopoly providers of a service may not have sufficient incentive to implement a tender process that will provide users of harbour towage services, such as shipping lines, with a service of an efficient price and quality. (sub. DR38, p. 1)

If port owners do not act in the interests of ship owners, then tendering by the port authority is unlikely to be the most appropriate method of choosing the towage firm to supply the market at a particular port.

The majority of publicly-owned ports in Australia have been corporatised (and some have been privatised) (chapter 5). Pressure to act in a commercial manner should provide incentives to minimise the overall cost of port visits, as ports are required to earn appropriate rates of return. This in turn will provide an incentive for the port authority to consult with port users and act in their interests so as to maximise port business.

The success of port reform in generating the incentives for port authorities to act in the interests of users appears to vary between ports. Some ports have been privatised, for example, in Victoria and South Australia, and these ports should face strong incentives to act in the interests of port users so as to maximise profits and earn a commercial return. The ability of the ports to earn excessive returns will be limited by the degree of competition between ports (discussed below) and any state government prices oversight regulation (chapter 4).

It is more difficult to make an assessment of the non-privatised ports. The corporatisation and commercialisation of the port authorities described in chapter 5 is likely to have increased pressures to behave in a more commercial manner. A study of reform at the Port of Fremantle, which was commercialised like many other Australian ports, concluded:

> The FPA [Fremantle Port Authority] now enjoys increased management autonomy and accountability and is more focused on the needs of port users. (Tull 1997, p. 51)

Non-privatised ports may also be subject to conflicting or unclear objectives and scope for government intervention (chapter 5 and appendix D), which may weaken incentives to act in a commercial manner. As noted by Charles River Associates (CRA):

> … under current arrangements in Australian ports, a number of ports face competing, non-commercial obligations that have the potential to raise the prices of towage services under an exclusive licensing regime. (Adsteam, sub. DR43, report 2, p. 30)

One common port objective is to facilitate trade. The Victorian Office of the Regulator-General (ORG) noted that trade facilitation is in the general commercial interests of the port authority because:

> What trade facilitation does imply is that prices for port services should not be set above the minimum levels that will attract the investment needed to ensure the continued provision of services of the quality desired by users. (ORG 1999, p. 21)

Other conflicting objectives may be more problematic. For example, in Queensland, the Government Owned Corporations Act requires port authorities to be commercially successful, but also to deliver community service obligations. The Act notes that the performance of the ports will be measured against both financial and non-financial performance targets. In New South Wales, the Ports Corporation and Waterways Management Act requires ports, in addition to achieving various commercial outcomes, to 'exhibit a sense of social responsibility by having regard to the interests of the community' (appendix D).

Ports' ability to act in a commercial manner can also be influenced by direct government involvement in the decision-making process. The State Owned Corporations Act in New South Wales gives the Minister power to direct the board of any state-owned enterprise to carry out any action. The corporation, however, is entitled to be reimbursed for the cost of the action (chapter 5). In Victoria, the Port Services Act permits the Minister to direct the Melbourne Port Corporation to perform non-commercial functions in the public interest. There appears to be scope for the Melbourne Port Corporation to be required to undertake these directions without financial compensation (chapter 5).

Overall, however, in relation to the incentives facing port authorities, SAL argued that in its view 'port authorities have the appropriate incentives to encourage efficient, including cost efficient, towage services in order to promote their port' (sub. 6, p. 14).

Licence fees levied by port authorities represent one way that the objective to maximise profits or returns to state governments may conflict with efficient pricing of towage services. Adsteam argued that:

> Port authorities have also been known to demand a share of the towage operator's profits, or to obtain licence fees out of all proportion to any supervisory function performed by the authority. This may explain the decision by one Australian port authority to award an exclusive contract to a towage operator with a higher price structure than its competitors, but which Adsteam understands paid a significantly higher licence fee. (sub. 15, p. 16)

Adsteam reiterated that:

> There are a range of ways … that fees get charged. There is a licence fee in some of the ports that have issued licences.
>
> There are also, in some cases, extremely high berth and wharf charges or rent for premises in some of the ports. There are two or three ports in Australia who have very, very substantial charges that we pay for operating out of their ports, completely out of all proportion to their equivalent ports, and I mean completely out of proportion. (trans., p. 177)

AAPMA indicated that:

> Some Port Authorities do charge towage operators a licence fee. In the main these fees are quite small and are certainly not designed 'to extend their control beyond safety issues and increase their own profitability'. (sub. 25, p. 8)

To the extent that licence fees do not reflect the costs incurred by the port authority in administering the licence arrangements, they represent a capture of profits by the port authority and may result in higher prices to towage users than could have been achieved. This is inconsistent with efficient pricing of towage services.

Alternatively, it is possible that port authorities may try to force down towage charges and in turn increase their own charges to shipping lines and thereby capture more of the revenue from a ship's visit. Adsteam argued that:

> In short a port authority will have an interest in forcing down the prices of the towage operator … At the same time, the port authority will have an opportunity to increase or further consolidate its own revenue streams from towage service providers or from ship operators directly.
>
> In a sense, a port authority is a competitor with the towage operator for a share of the port visit revenue. (sub. 15, p. 63)

In some states port authority charges are subject to prices oversight (chapter 4). Such prices oversight may prevent port authorities attempting to capture the benefits of lower towage rates rather than passing them on to towage users.

The degree of competition between ports will influence the incentives facing a port to minimise towage (and other port service) charges to retain existing ship visits and try to attract additional business. If competition between ports is very weak, or absent, a corporatised port authority faces little commercial incentive to minimise charges as ship operators are unlikely to take their business to another port. If competition between ports is very strong, and there is a real risk that an under-performing port may lose business to another port, then the port authority faces strong incentives to minimise costs and maintain quality standards in all parts of the port.

In general, participants agree that there is some competition between Australian ports, although they differ as to the degree of competition.

AAPMA argued that:

> In general, there is only limited scope for direct competition between ports and any competitive pressure will be restricted to specific commodities and between specific ports. (sub. 4, p. 18)

In Victoria, the ORG found that:

> … there has been a discernible increase in the level of competition between regional ports for a number of trades, including grain, woodchips, logs and fertiliser, and that the market conduct of the regional ports appears to be in general consistent with the existence of considerable competitive pressure. (1999, p. 2)

There is also likely to be relatively strong competition between particular ports for particular trades. For example, landbridging by rail between Melbourne and Adelaide intensifies competition between these two ports.

Adsteam argued that:

> Regardless of the degree to which port authorities' belief in inter-port competition is a reality, the derived competitive constraint on towage providers is very real. Port authorities are extremely attentive to ship operator demands for higher quality and lower-cost port services, including towage services. In turn, port authorities actively encourage (and sometimes direct) towage operators to increase their efficiency and standards of service. (sub. 15, p. 15)

FINDING 8.6

Port reform has resulted in more commercially-focussed port authorities. In some cases, however, unclear or conflicting objectives and scope for government intervention may distort port authority incentives to act in the interests of port users. Competition between ports, although limited, provides some pressure on ports to operate in the interests of towage users.

FINDING 8.7

A close alignment of interests between the port authority and towage users is required to ensure that a competitive tender conducted by a port authority for an exclusive towage licence results in an efficient outcome.

Contract or licence specification and length

A properly specified contract or licence is central to ensuring an efficient tendering outcome. In some respects, this is easier in the case of towage than in other

industries. The provision of towage services at a given level of quality (such as a 24-hour service and a two hour call up time) is relatively easy to specify, compared with a service characterised by multiple outputs, significant technological change or demand uncertainty (appendix E).

In Bunbury, for example, the Towage Licence Agreement specified a number of Key Performance Indicators (KPIs), which the licensee was required to meet. The KPIs included (among others):

- demonstrated continuity of towage services;
- reduction in the level of costs to port users; and
- improving and enhancing the existing quality standards in the provision of towage services. (Federal Court of Australia 2000a, para. 23)

Compliance with the KPIs is assessed annually and the information audited by an independent auditor. The licence agreement stated that the licence term would be extended by two years if the licensee met all specified KPIs.

A more complicated issue is the appropriate contract or licence length. Shorter-length contracts permit more comprehensive specification of the services required and the prices to be charged, while longer-term contracts must allow for greater uncertainty. The agreement could contain provisions dealing with unexpected demand changes. For example, if tug jobs were significantly above those forecast at the beginning of the contract or licence period, there could be a mechanism to reduce towage prices.

In addition, the contract duration must balance the trade-off between being of sufficient length to ensure the towage operator can earn a return on investments made to enter the industry, but not being so long as to entrench the incumbent and hence forgo the advantages, in the form of competitive pressures, resulting from more regular tendering. In relation to licences issued by port authorities, the PSA argued that:

> A balance must be drawn between a short licence period, which increases competition by making the market more frequently contestable, and a long licence period which reduces towage operators' risk thereby enabling fixed and sunk costs to be written off over a longer period which reduces annual costs. (1990, pp. 43–4)

Shorter contracts also increase the transaction costs of conducting a competitive tender because they are held more frequently. The transaction costs of tendering include the cost of preparing the tender documents, running the tender, evaluating the bids and monitoring compliance with the conditions of the licences. The potential towage operators also incur costs when participating in the tender process. These costs are discussed further in the following section.

When port authorities conduct a tender for towage services, they would determine the length of the licence. Consultation with users, towage providers and regulators would help inform the port authority on this issue. In making such decisions, it is important that the port authority acts in the interests of towage users. In offering a licence at tender, the port authority could ask all bidders to bid on the basis of a specified contract length and provide the opportunity for bidders to indicate their preferred contract length and tender on that basis as well. This will provide information to the port authority as to the magnitude of the trade-off involved.

Costs of tendering

Conducting a tender for an exclusive (or non-exclusive) licence to provide towage services is not a costless exercise. Both the direct costs involved in operating and participating in the tender and any indirect effects on economic efficiency must be considered before commencing a tender process. Adsteam noted that:

> Even where a potential benefit may exist, securing that benefit will not be costless and numerous inefficiencies along the way can reduce the size of the anticipated reward. (sub. DR43, p. 6)

The two types of costs raised by Adsteam (costs of the tender process and other economic costs) are examined in the following sections.

Costs of the tender process

Transaction costs are incurred by both the port authority or users and by those submitting bids for the licence. An indication of the types of costs incurred by participants in a competitive tender is provided in box 8.1.

ACIL Consulting (ACIL) estimated that the cost to the port authority of conducting a tender was between $215 000 and $275 000 (Adsteam, sub. DR43, report 1, p. 6). However, the Bunbury Port Authority suggested the figure was much lower:

> The cost was not high because we managed it from the port authority. We didn't employ a consultant or a consulting firm to manage it. The cost was no more upwards than $10 000. It was a very competitive tendering process, and the only additional cost to the port authority was naturally the cost of tendering, the legal fees for the establishment of the licence and the probity auditor. Everything else was in-house. There was no cost from Treasury, there was no cost from the Department of Transport at the time, and the consultancies are the ones that actually had a big cost, but it would have been between the order of around about $10 000 to $15 000 max with the actual writing of the licence itself. (trans., p. 124)

Box 8.1 An estimate of the costs of conducting a tender

In conducting, a tender costs are incurred by the party offering the tender and those submitting bids. ACIL Consulting (ACIL) was commissioned by Adsteam to report on the transaction costs associated with the competitive tendering of exclusive licences for harbour towage services.

ACIL's preliminary estimates of transaction costs for competitive tendering borne by the port authority conducting the tender are $215 000 to $275 000. This includes the following costs:

- set-up ($20 000);
- conducting a cost benefit analysis to decide if it is worth going to tender ($50 000);
- drafting the contract ($25 000);
- tender management ($100 000 to $150 000); and
- conducting a probity audit ($20 000 to $30 000).

ACIL's estimates exclude the costs of participating in the policy debate during the set-up phase, contract management and contract renegotiation.

ACIL also provides preliminary estimates of the costs incurred by bidders participating in the tender process. Total bidder costs (excluding uncertain items) are estimated at between $170 000 and $200 000. This estimate includes the following items:

- preparation of a local study to familiarise the bidder with local conditions ($20 000);
- preparation of a demand study to estimate revenue risk ($30 000);
- travel expenses incurred in making the bid ($5 000 to $10 000);
- preparation of the bid ($75 000 to $100 000);
- quality accreditation ($10 000);
- termination and hand over (incurred by the incumbent if it does not win the contract ($20 000); and
- contract management ($10 000).

The costs per bidder exclude the cost to secure tugs and any renegotiation of the contract should it be required during the contract period.

ACIL concluded that:

> Assuming five bidders but allowing for only the incumbent incurring handover costs and only one (winning) bidder incurring QA and contract management costs, the estimated total bidder costs (of the successful bidder and the four who were unsuccessful would be of the order of $7–800 000. The total resource cost (port authority, bidders, advisers) would thus be of the order of $1 million, plus the cost of the uncertain items as described above. (Adsteam, sub. DR43, report 1, p. 6)

Source: Adsteam (sub. DR43, report 1).

There is a question as to whether the Bunbury Port Authority has included all appropriate costs in its estimate of $10 000. This figure appears to represent only the actual amounts paid out by the port authority to those assisting in the tender process, such as costs for legal fees. However, a full estimate of the costs should include an estimate of management's time and involvement of from government departments.

In relation to the comments made by the Bunbury Port Authority, Adsteam responded that:

> The costs of implementing preliminary recommendations are wide and fall upon many, many shoulders — port authority set-up, cost-benefit analysis, draft contracts, tender management, probity audits, contract management. I'm sorry, you cannot do that for $10 000. It is impossible. (trans., p. 156)

The FPA, in response to ACIL's estimates of the costs incurred by port authorities in conducting a competitive tender of between $215 000 and $275 000, stated that in its own experience:

> … actual costs were well below the range suggested. Our records indicate that actual disbursements were less than $50 000. Other internal costs such as salaries and overheads are fixed costs that could be expected to be incurred in the normal course of business, but even if they are allocated on a time basis to the various tasks performed, the amount apportioned to tendering for towage licensing plus follow up would still be of the order of $100 000, making total costs of $150 000. We believe that the figures in Table 2 [of the ACIL report] are similarly overstated. (sub. DR46, p. 1)

The cost borne by port authorities when conducting tenders is likely to vary widely depending upon a range of factors including the experience of the authority, the complexity of the tender and the use of external consultants.

CRA argued that these costs are important because they add to the cost of providing towage services and may lead to reduced productive efficiency because:

> … if the tendering process and the risks associated with it actually generate additional costs for towage providers (and for port authorities) then towage services will now be provided to port users at a higher resource cost, and be less productively efficient than previously. (Adsteam, sub. DR43, report 2, p. 12)

The Commission accepts that there will be transaction costs associated with the conduct of a tender for an exclusive (or non-exclusive) licence. These costs should be weighed up against the benefits before conducting a tender. However, it would be misleading to imply that other forms of competition for the market such as open competition or takeover are costless — they also entail real costs to market participants.

- A firm considering entering the towage market to compete with an incumbent would carry out many of the background and demand studies that would have been undertaken by a bidder in the tender process. Similarly, a new entrant would need to negotiate with the port authority over wharf space and other requirements, with the port authority also incurring costs associated with new entry. Mergers and takeovers also entail significant transaction costs.
- In addition, there are the costs associated with the dissipation of rents as the incumbent firm acts in ways to protect its 'monopoly' position and an entrant attempts to win control of the market. For example, the incumbent may lobby for a favourable regulatory regime which acts to dissuade entry. There may also be real resource costs during the period of competition in the case of new entry or before rationalisation following a merger. These costs include the employment of additional tugs, crews and other equipment beyond that which is efficient in the long-run when only one towage provider will remain in the port.

FINDING 8.8

Port authorities conducting tenders for towage licences will incur transaction costs as will bidding firms. Alternative mechanisms for selecting a towage provider to service a port (such as new entry and head-to-head competition or mergers and takeovers) also will incur transaction costs.

Other economic costs

Competitive tendering for towage licences may also result in other economic costs, that is, costs in addition to the transaction costs associated with conducting and participating in the tender process.

Static gains versus dynamic costs

CRA (Adsteam, sub. DR43, report 2) argued that when considering the benefits of competitive tendering for towage licences the Commission had focussed on the immediate gains from generating competition for the market leading to more efficient short-run prices. CRA argued that the Commission's analysis in the position paper:

> … is very much a static analysis. If the costs of change are significant, especially in terms of reducing dynamic efficiency, then the total impact on social welfare could be negative. (Adsteam, sub. DR43, report 2, p. 11)

CRA's analysis focussed on the range of transaction costs involved in conducting a tender for an exclusive licence (such as those outlined in the previous section) and the claimed dynamic costs of the process. CRA claimed that the small static benefits

of competitive tenders are outweighed by the longer-run costs of competitive tendering and implementing the licensing regime. CRA argued that:

> Our analysis suggests that there are many costs that would need to be considered, some of which are quite pervasive, especially those impacting on the dynamic aspects of the harbour towage industry (e.g. in terms of customer choice, innovation and productive efficiency). Risks accompany any regime that encumbers the on-going process of competition in markets, is in place for long periods of time, and is potentially harmful to dynamic efficiency. (Adsteam, sub. DR43, report 2, p. 34)

CRA claimed that one of the dynamic costs of conducting competitive tenders is a reduction in user choice over which towage company ship operators use in a port. However, a tender process and the award of an exclusive licence is simply the manner in which the single provider is selected — in most, if not all, ports there will only ever be one towage provider.

In contrast to CRA, the FPA argued that as part of its tender process consumer choice was enhanced. It stated that 'customers were widely consulted on their preferences, so that they exercised customer choice where they had none before' (sub. DR46, p. 2).

If in some larger ports there is scope for more than one towage provider to operate, a tender process for an exclusive licence may limit options available to towage users for the period of the licence. This would need to be taken into account by the port authorities in considering whether to offer an exclusive licence.

Another possible dynamic cost of competitive tendering is the claimed adverse impact on incentives for towage providers to innovate. CRA argued that:

> … if the imposition of exclusive contracts inhibits improved productivity, innovation and technological change in the towage industry, then dynamic efficiency will be harmed. By removing the discipline of potential entry on towage providers and the competitive pressure to pass on productivity gains to customers (for a period), it is possible that exclusive licences may have deleterious effects on dynamic efficiency. (Adsteam, sub. DR43, report 2, p. 12)

However, the tendering process creates intense competition at the time of the tender and this creates a strong incentive for innovation by potential towage providers as they compete for the tender. Incentives to innovate may be enhanced because the licence period provides a guaranteed period for the firm to recoup its investment in innovation. FPA noted that its tender process 'attracted many submissions, some of which were greatly innovative' (sub. DR46, p. 2).

It is possible that the benefits of any productivity gains achieved during the contract or licence term, but not foreseen at the time it was awarded, may not be passed onto consumers during the period of the agreement. This is not, however, an argument

against exclusive licences but rather an argument to ensure that the licence period is not too long. In addition, allowing towage operators to keep some of the benefits of productivity gains during the licence period provides a strong incentive for the incumbent firm to search for such gains.

Expropriation of sunk costs

NECG (Adsteam, sub. DR43, report 3) argued that competitive tendering may result in inefficient outcomes because of the adverse effect they have on incentives to incur sunk investments. NECG focussed on investments made in improving labour practices and productivity. It argued that such investments are only made because there is an expectation that the benefits of the investment can be recouped by Adsteam over time because of the existence of small barriers to entry (sub. DR43, report 3, p. 10). In the absence of competitive tendering for towage licences, NECG claimed that:

> In the open market, Adsteam can reasonably expect to recover such costs given the minor barriers to entry in towage. (Adsteam, sub. DR43, report 3, p. 6)

If Adsteam were unable to recoup the benefits of the investment then, it argued, such investment would not take place and, hence, towage users would be deprived of cost-reducing and service-enhancing investments. (The issue of expropriation of sunk costs is discussed further in appendix E.)

Competitive tendering, by increasing competition in the towage market (at least during the bidding stage), would deprive Adsteam of its ability to capture the benefits of its investments because the new, more productive, labour arrangements would also be available to other potential bidders:

> Exclusive licensing increases the degree of competition for the market, which reduces firms' capacity to recover, albeit small, sunk costs. Exclusive licensing may increase competition for the reasons given by proponents of exclusive licences, but it also does so because it allows better expropriation of an incumbent's investment in labour relations. This makes entrants and hence the bidding process more competitive. (Adsteam, sub. DR43, report 3, p. 6)

In effect, NECG appears to be suggesting that a competitive tender results in 'excessive' competition which has adverse effects on incentives to invest, especially in labour reform.

Barriers to entry (even if relatively small) will enable the incumbent to earn a margin above costs. However, such barriers do not provide an incentive to undertake the type of 'public-good' investment claimed by Adsteam. If the investment undertaken by the incumbent benefited its rivals more than itself the

incumbent would suffer lower profits. A profit-maximising firm would have no incentive to undertake such investment.

Investment may be undertaken by an incumbent to increase returns in the future as a reward for accepting the risk associated with undertaking the investment. This is the reason advanced by Adsteam for investing in labour reform. However, in a market environment there is no certainty that the firm undertaking the investment will receive a guaranteed return from that investment. There are risks involved in the investment activity and the firm must make a commercial decision whether to proceed or not.

Investment may also be undertaken to protect the incumbent from entry. If an incumbent does not undertake appropriate investment (for example, in labour reform) they may be vulnerable to competition from a new firm which enters the market after having negotiated its own more efficient labour practices.

Stronger competitive forces are likely to strengthen the incentive to undertake such investments. In the case of Bunbury, the process of tendering for an exclusive towage licence resulted in the licence being awarded to a new entrant which had labour arrangements different from the incumbent operator. Moreover, the successful bidder had the advantage of being free to enjoy the benefits of their investment for the duration of the licence period (within the constraints of the winning bid price). Dale Cole & Associates argued that competitive tendering for towage licences has resulted in improved efficiency in the towage industry including more efficient labour market arrangements. It argued that competitive tendering has encouraged bidders to identify:

> … alternatives to manning and roster arrangements, which would pass the 'no disadvantage test' and increase the level of efficiency. Given that crew salaries plus on-costs represent some 68 per cent of a tug's operating expenses; achieving better outcomes in terms of the efficient use of labour is a legitimate business priority. (Dale Cole & Associates, sub. DR33, p. 3)

Overall, the potential for expropriation of the benefits of investment by others is not a phenomenon particular to competitive tenders. It will occur under competitive market conditions. The possibility of expropriation is a risk that should be assessed in deciding whether to invest, as is the risk that if the incumbent does not invest the way will be open to another firm to adopt lower-cost technologies and to enter, and win, the market.

Provision of salvage under towage licences

Several participants argued that more widespread use of tenders for allocating towage licences, especially exclusive licences, would have adverse consequences for the provision of salvage services in Australia. The types of salvage and emergency work carried out by towage providers are outlined in more detail in appendix F. Adsteam, for example, argued that:

> Exclusive towage licences, because of their port-specific focus, pose a serious threat to the on-going viability of Australia's existing national salvage and coastal protection capability …
>
> If more ports adopt inward-looking licensing regimes without regard to wider economic and community needs, our national salvage and coastal protection capability will be at serious risk. (sub. DR29, p. 1)

In addition, AIMPE argued that:

> If exclusive licensing results in a harbour only focus, the private sector will not be able to continue to provide the service it currently provides. Licence requirements to have a specified number of tugs in a port at all times mean that tugs cannot leave the port to attend these emergency situations. (sub. DR32, p. 8)

These participants claim that exclusive licences result in inward-looking port authorities who are concerned only with towage operations in the immediate port environment. They argue that exclusive licences, by encouraging this environment, will adversely impact on the provision of salvage services because:

- port authorities will not permit tugs used in harbour towage to leave the port to deal with salvage opportunities; and
- port authorities by selecting the lowest cost operator through an exclusive licence will take no account of the additional costs required to provide salvage capability.

Port authorities have a legitimate interest in ensuring that services provided to port users, are provided at appropriate levels of timeliness and service quality. In relation to towage, for example, port authorities often require a 24-hour service and specify minimum call-out times. This may be seen as limiting the possibility of towage providers also engaging in salvage operations.

However, as AAPMA (sub. DR44, pp. 9–10) noted 'licences could stipulate conditions for time away for salvage, emergency response work and the associated towage cover required'. In addition, AAPMA stated that:

> Ports are highly responsive to wider economic and community needs and it is most unlikely than any port would specifically exclude salvage and emergency response

> requirements from any towage licensing arrangements as this is an essential part of meeting the needs of our stakeholders. (sub. DR44, p. 9)

Participants have also raised concerns that exclusive licences, by encouraging the lowest-cost provider, will result in bids that do not include a salvage capability.

However, if salvage is commercially viable (and the exclusive licence specifies minimum requirements, for example in relation to tug size) then a bidder could bid for the towage contract but then use more powerful salvage-capable tugs. Several participants have argued that the provision of salvage is commercially viable. For example, Adsteam argued that 'Commonwealth and State Regulators, Port Authorities and harbour users enjoy an emergency/salvage response capability at no cost' (sub. DR29, p. 8).

In this situation, the additional cost of the more powerful tugs should be met from expected returns from the salvage operation. A bidder offering both harbour towage and salvage would therefore not be disadvantaged relative to another bidder who bid only on the basis of supplying harbour towage services. Indeed, to the extent that there are economies of scope in the provision of harbour towage and salvage, the cost of providing harbour towage may be less than for a stand-alone harbour towage provider.

The provision of adequate salvage capability is essential to protect the Australian coast line and ensure vessel and crew safety in the seas around Australia. The Commission understands that the issue of salvage is being actively considered by relevant authorities in Australia. For example, the Government has established a Shipping Management Group,[9] to implement the recommendations of the Review of Ship Safety and Pollution Prevention Measures in the Great Barrier Reef. The review includes a recommendation to reassess emergency response measures in the Great Barrier Reef and Torres Strait and make an assessment of necessary salvage capacity and its operational location (Anderson 2002).

FINDING 8.9

The provision of salvage services need not be adversely affected by the efficient pricing and provision of harbour towage services.

9 The Shipping Management Group consists of the Department of Transport and Regional Services, the Australian Maritime Safety Authority, the Great Barrier Reef Marine Park Authority and Queensland Transport.

Transition issues

If the incumbent towage operator fails to win a tender for an exclusive licence, there is likely to be a significant set-up period before the new operator can commence providing services. During this period the port authority is vulnerable to action by the incumbent to degrade service, or to withdraw services altogether.[10] The Sydney Ports Corporation argued that if the incumbent operator loses its licence then:

> Unless proper controls are in place, the existing operator, having lost the new contract, may immediately cease operations in the port prior to the new operator being ready, thereby creating a major operational problem … (sub. 19, pp. 9–10)

While this could be a dangerous strategy for the incumbent because of damage to its reputation, fear of such action may dissuade port authorities from offering exclusive licences.

The threat of withdrawal of services is an issue if there is no obligation to continue providing services until a specified date. A short-term initial licence is one way to overcome the problem. For example, Fremantle awarded a non-exclusive licence by tender, for a period of two and a half years. The licence requires the towage operator to continue to provide services for the full period. The Fremantle Port Authority would therefore be able to conduct its next tender in the knowledge that the current operator is required to continue to provide services until the expiry of the licence.

[10] The Bunbury Port Authority was protected from such action by a court order requiring the incumbent to continue providing towage services while court action was being taken.

9 The Commission's assessments and recommendations

Drawing on the evidence and analysis presented in the preceding chapters, this chapter outlines the Commission's assessments and recommendations regarding economic regulation of, and the scope for competition-enhancing reforms in, the provision of harbour towage.

9.1 Is economic regulation needed?

The evidence presented and analysis undertaken suggest that the efficient provision of towage services is likely to require just a single towage operator in most individual Australian ports. This situation is unlikely to change without major changes in towage technology or substantial increases in demand for towage.

Importantly, however, this does not imply that towage operators in each port will have significant market power — that will depend on the size of barriers to entry. It is the Commission's assessment that barriers to entry, though not insignificant, are not large.

Barriers to entry allow an incumbent towage operator to raise prices above efficient costs (or above the costs of the most efficient potential entrant), broadly reflecting the magnitude of those barriers. The maximum price margin that can be earned by Adsteam Marine Limited (or any other operator) at ports where users or the port authority have not implemented competitive selection procedures, or exercised their bargaining power in other ways, seems to range from around 5 per cent to 10 or 15 per cent, though some towage users suggest as much as 30 per cent at some ports.

However, current margins may not be sustainable, especially if the incumbent's costs are high relative to alternative providers. The apparent increase in interest of foreign towage providers in servicing Australian ports, for example, suggests that incumbent operators will be under increasing pressure to operate efficiently and constrain their prices.

Thus the constant threat of entry and, on occasion, actual entry, may be expected to impose some discipline on towage prices and costs at declared and non-declared ports. As discussed in chapters 4 and 8, this competitive pressure could be increased somewhat by addressing some State, Territory and port-specific requirements that indirectly increase the costs of providing towage and costs of entry for rival providers. Importantly, addressing these requirements also could reduce the incumbent's costs and allow ships to reduce their tug use, thus reducing towage prices and the overall cost of towage for shippers.

RECOMMENDATION 9.1

Subject to maintaining appropriate levels of safety, prescriptive regulations that stipulate tug use and/or tug size or type, should be modified to promote provision of required levels of service at minimum cost.

Relevant jurisdictions should also promote harmonisation or, where appropriate, introduction of a system of mutual recognition of minimum crew qualifications and standards, to minimise impediments to the movement of crews and tugs across Australian ports in different jurisdictions.

The Commission understands that the National Maritime Safety Committee — an intergovernmental committee established in 1997 by COAG — is already addressing the issue of jurisdictional differences in crew qualification requirements. A similar process to maintain reform momentum in other areas would seem worthwhile.

Nonetheless, the technology of harbour towage and current and foreseeable demand levels at most, if not all, Australian ports, mean that it is unlikely that there will be scope for enduring direct competition *within* a port. Furthermore, given barriers to entry, relying on market contestability alone is unlikely to lead to prices (for desired quality) that are efficient, though as noted above, the degree of inefficiency is not likely to be large. While this suggests a *prima facie* rationale for intervention, the critical question is whether any of the options canvassed in chapters 7 and 8 is likely to do any better than the discipline imposed by the threat of, or occasional, entry.

9.2 Competitive bidding, contracts and licences

Many regional ports are owned by, or service, single users. At most of these ports, harbour towage services are provided by either the port operator-cum-owner, or are contracted out to a specialist provider (chapter 4, table 4.1). At those single-user/commodity ports where the towage market is 'open', many do not have a permanent tug fleet — they use tugs from nearby ports. Several privately-owned

ports servicing multiple users also have entered into contracts (in effect, exclusive) with towage providers.

These arrangements demonstrate that, although economies of scale mean that a single provider of towage is likely to be more efficient than two, users can exploit the availability of a range of potential providers (including themselves) to achieve more efficient towage pricing and quality. As noted already, the number of such potential entrants appears to be increasing, with several overseas towage operators currently showing an interest in providing services at Australian ports. The fact that many regional ports (with a permanent tug fleet) do not rely solely on the threat of entry to regulate towage suggests that they regard the outcomes from self-provision or periodic contracting to be superior — that is, the benefits would seem to outweigh the costs of implementing these options.

This raises the question as to why contractual arrangements or other options (subject to meeting port authority safety requirements) are not being pursued at larger multi-user ports. This option was floated a decade ago by the Prices Surveillance Authority (PSA 1990), but has attracted scant interest to date.

This may reflect high transaction costs of coordinating numerous users (in addition to the cost of conducting tenders and monitoring contracts), relative to the benefits. Another possible hurdle is that coordinated buying may require authorisation under the *Trade Practices Act 1974* (TP Act). Also, users may have relied on the price notification system — the costs of which are borne largely by towage providers and taxpayers — to restrain towage prices.

Nevertheless, if towage users are dissatisfied with towage services and/or the price of those services, the Commission would encourage them to explore the possibility of collective negotiation (for example, through their representative bodies) as one option to address their concerns.

Licensing of towage operators by government-owned port authorities

Where users cannot efficiently contract directly with towage operators (for example, because of problems coordinating many users), port authorities could act on their behalf. While towage companies would still supply services to shipping lines or shippers directly, the port authority, via licence conditions, could influence the terms (including the price and level of service offered to users) under which a towage provider is allowed to operate in the port.

Several State government-owned regional ports servicing multiple users have conducted competitive tenders for exclusive and non-exclusive licences, which have

resulted in price reductions without compromising service quality. In this sense, licensing by port authorities has more in common with commercial contracting than government regulation. Several port authorities have suggested to this inquiry that they would pursue similar arrangements if, as for some ports in Queensland and Western Australia, they were given explicit permission to do so by the relevant jurisdiction.

As discussed in chapter 8, in principle, if a port authority faces the correct incentives to deliver the appropriate quality of port services at the lowest cost to users, and there is an adequate pool of bidders (which could include the port authority itself if arm's length, transparent procedures for assessing bids and so on were adhered to), a competitive tender for an exclusive licence could be used to promote more efficient prices and quality of service. Importantly, such an arrangement does not reduce user choice where the port can sustain only one towage provider. Indeed, tendering potentially can give users a greater role in selecting a provider. Several previous inquiries into harbour towage in Australia and in New Zealand have reached a similar conclusion (box 9.1).

There are several important caveats, however. Some of these apply to any commercial decision to conduct a tender and/or to enter into a long-term contract. Others — with direct policy implications — relate to using the port authority as an agent for towage users. The first category includes weighing the transaction costs of running the tender and monitoring the licence conditions and the risks of 'locking in' one provider for a fixed period, against the price and quality benefits delivered. Tender processes also need to be designed to ensure that the best possible price/quality bundle is offered.

While it can be assumed that towage users will exercise sound commercial judgement to promote their own interests, the ability and incentive of a port authority to act in the interests of users is not necessarily assured. Substantial reforms of port authorities over the 1990s have made it more likely that ports, in pursuing commercial objectives, will promote user interests.

There is evidence that where port authorities have held competitive tenders for towage licences, they have consulted with or involved users in the tender process and the principal objective of the exercise has been to bring about better towage outcomes for users. The Commission has not received any submissions from towage users suggesting that they are unhappy with the conduct and outcomes of competitive tenders at these ports.

Nonetheless, where port authorities do take action on behalf of users to license towage providers, especially on an exclusive basis, some additional safeguards would be appropriate.

Box 9.1 Tendering for exclusive contracts or licences — conclusions of some other inquiries

In summary, tendering has the potential to increase competition between towage suppliers and can produce favourable results for consumers as demonstrated by the Geelong experience. Tendering could be used to apply competitive pressure on towage operators, to force them to pass on to consumers the cost savings flowing from the Government's reforms. (PSA 1990, p. 48)

There is some evidence that the application of exclusive licensing, or the threat of application, may control any tendency towards monopolistic behaviour on the part of towage operators. (Economic Associates 2001, p. iv)

Port authorities [should] be accorded the discretion to require towage operators to be exclusively or non-exclusively licensed and to apply conditions to licences; Port authorities should be required when determining licensing arrangements to consider the impacts on port users and other relevant stakeholders, demonstrate the net benefits of the proposed arrangements (a requirement which is consistent with State Purchasing Policy), including consideration of longer term issues such as continuity of towage service, efficiency of the tug fleet, and operating arrangements consistent with the ongoing safety of towage and port operations; and make publicly available the conditions attached to such licences; Exclusive licences where they are to be issued, [should] be subject to publicly advertised competitive tender; Port authorities [should] be required to consult formally, and in a transparent manner, with their stakeholders prior to changing any current arrangements for the regulation of towage services within their ports. (Economic Associates 2001, p. vi)

Given the 'thinness' of operations at most ports in New Zealand, we consider there to be little scope for inter-firm competition for tug services within a port: utilisation rates would be uneconomically low at all but the busiest ports … where intra-port competition is not viable, competition for the market through competitive tendering can provide competitive tension on a periodic basis. Alternatively, the port company itself may choose to vertically integrate into the provision of tug services. (CRA 2002, p. 36)

Periodic contracting for the right to operate a natural monopoly service has the potential to significantly lower the costs and risks associated with entry, since the new entrant does not face the prospect of having to survive a protracted price war with an incumbent operator … More generally, the Office considers that any periodic contract formalising arrangement should be structured and managed in a manner that promotes the interests of port customers. The process by which such contracts are let should be therefore public, competitive, transparent and supervised by an appropriate body. (ORG 1999, pp. 75–6)

Any mechanism designed to promote efficient prices for harbour towage (including price regulation), provides an opportunity for a port authority with objectives that conflict with user interests to capture some or all of the savings from lower towage charges by imposing higher port charges. In relation to licensing, major policy concerns are to ensure that: port authorities do not primarily use tenders and licences for their own benefit at the expense of towage users; users are consulted so that their preferences are not overridden; and that tendering processes are public, transparent and competitive.

Consequently, the Commission stresses that it does not consider that exclusive licensing by port authorities in practice will always deliver superior outcomes to non-exclusive licences or, indeed, other options including no licences. Costs and benefits of the various options need to be assessed in each case.

There is some evidence that port authorities are evaluating various options and do not regard licensing as the only approach. As noted by the Port of Brisbane:

> … [It's] something we're still debating internally, whether we should have licensing or not, whether the threat of just a new operator coming into the port is sufficient … (trans., p. 8)

However, a full consideration of all available options will not be possible if certain options are not available to port authorities. The Commission is not aware of any State or Territory regulations that explicitly prevent port authorities licensing towage operators. However, the lack of explicit permission in some States and Territories to licence towage operators is regarded by some port authorities as effective prohibition.

The Commission's conclusion is that exclusive licensing by port authorities should not be prescribed, but neither should this option be proscribed — the key is to ensure that the process is used only when better outcomes can be achieved for towage users.

RECOMMENDATION 9.2

Where port authorities currently do not have explicit discretion to license towage operators (on an exclusive or non-exclusive basis), the relevant jurisdiction should grant them that discretion.

The granting of such discretion should be accompanied by safeguards to ensure that a port authority, if and when exercising its discretion to license towage providers:

- ***does not use the tender process to appropriate savings in the provision of harbour towage for itself (over and above the additional administrative costs incurred by the port authority);***
- ***demonstrates the net benefits of proposed licensing arrangements;***
- ***formally consults with towage users in a transparent manner prior to changing existing arrangements and about the conditions attached to any licences; and***
- ***implements 'arm's length', transparent competitive-tendering processes.***

Corporatised port authorities also are subject to the TP Act. The TP Act (Parts IIIA and IV) would not appear to prevent exclusive licensing by port authorities

provided such licensing were not anti-competitive. As the Commission has emphasised, if competitively-awarded exclusive licences are used as a means of selecting a towage provider in a port which efficiently can support only one provider, competition can be enhanced, not diminished. The duration of the licence is crucial in this regard. Given that sunk costs in the provision of harbour towage do not appear high, the contract term should not be too long.

Vertical integration

As noted above, in principle, and subject to certain safeguards including, for example, arm's length assessment of bids, port authorities should be permitted to submit an 'in-house' bid for a licence to provide towage services. However, concerns may arise where a port is providing towage and that service has not been subject to a competitive bidding process.

If the port owner is also a major user of towage, presumably the most efficient option will be chosen. For example, Woodside Energy originally provided its own towage at its Dampier terminal, but sold its tugs to Riverwijs which now provides towage to Woodside under contract.

Where the link between the port owner/operator and users is less direct, the main mechanisms influencing the port's behaviour will be competition and regulation. If a vertically-integrated port faced competition it could be expected to ensure that harbour towage was delivered and priced efficiently.

Where vertically-integrated ports do not face effective competition (or regulation that effectively constrains them to act in a competitive manner), harbour towage delivery and pricing may be inefficient. Moreover, barriers to entry may be raised by denying access to port facilities for use by competing towage providers.

Currently in Australia there is one major container port (Adelaide) at which the towage provider (Adsteam) also is a part owner of the port. (At all other multiple-user ports, towage is provided by a specialist provider.) Unlike most other Australian ports, the Port of Adelaide (along with most regional South Australian ports) has been privatised. Evidence presented to this inquiry suggests that the Port of Adelaide is under competitive pressure from some other ports and the Port of Melbourne in particular. Under these circumstances, setting high towage (or port) charges could be counterproductive. In addition, if another towage company were denied access to the port, there may be grounds for declaration of the facility under the national access provisions (Part IIIA) of the TP Act. In addition, South Australia has introduced a port-specific access regime which could be used by a towage provider seeking access to the port.

9.3 Should price regulation continue?

The current system of price notification for harbour towage provided at seven ports appears to have had little effect in promoting more efficient pricing (chapter 7). At the same time it has imposed costs on towage providers and taxpayers. However, it does not follow that stricter price controls should be imposed. Strict price controls inevitably entail a high level of regulatory intervention and increase the risks of regulatory failure. The potential for misuse of market power by harbour towage operators, who ultimately are constrained by the threat of entry, does not warrant this level of regulation. It is the Commission's assessment that the associated costs would outweigh any potential benefits.

In addition, towage users directly or indirectly through port authorities have scope to exercise choice through competitively-awarded contracts or licences (or a credible threat of using such arrangements). Though the ACCC seems to argue that contracts or licences with different conditions at individual ports would be more costly than uniform price regulation, the Commission finds this difficult to accept. As noted above, contracting and licensing arrangements by port authorities have more in common with normal commercial contractual arrangements than government economic regulation. For these reasons, the Commission considers that continued price control (in any form) at the declared ports is not warranted.

RECOMMENDATION 9.3

Declaration of harbour towage services at the ports of Melbourne, Sydney (Port Botany and Port Jackson), Newcastle, Brisbane, Fremantle and Adelaide under s. 21 of the Prices Surveillance Act 1983 should not be renewed when the current declarations expire on 19 September 2002.

Moreover, in the Commission's view, removal of declaration is likely to act as a catalyst for users and ports to consider actively alternative available ways of exerting more pressure on towage providers where they consider improvements are feasible. Although price regulation should not continue, limited price monitoring by the ACCC of towage services provided at those ports where towage services are currently declared, may facilitate the transition from price regulation to greater exploitation of various options available to users and port authorities to exercise choice in the towage market.

Several port authorities and towage users argued that any price monitoring regime should include analysis of costs and profits, similar to the monitoring regime currently applying to stevedoring. Monitoring of stevedoring was introduced in 1999 primarily to ensure that a levy to recoup the costs of government-funded redundancy payments in the industry was not being passed onto shipping lines and

shippers via higher charges. In the Commission's view, application of such a data-intensive and intrusive regime to harbour towage is not warranted, essentially for the same reasons that the Commission considers that declaration should not be renewed — that is, the limited degree of market power held by towage operators and the scope for users and ports to exert buying power.

In the Commission's view, the objective of the transitional price monitoring should be to impose some degree of public accountability on incumbent towage providers as to their charging and should not be so onerous as to itself become a barrier to entry, discouraging potential entrants or bidders for a licence. For this reason, only list price data should be monitored and reported. The regime should remain in place for three years.

Some towage users also sought wider application of monitoring to ports not currently declared. The Commission has received little evidence that charging at non-declared ports (many of which have contractual or licensing arrangements in place) is excessive or that the benefits of a wider information-gathering exercise would outweigh the costs imposed on towage providers and taxpayers. Given the absence of a compelling case to expand the scope of regulation, the Commission is of the view that such monitoring should be limited to those ports where towage services are currently declared.

RECOMMENDATION 9.4

Harbour towage charges at ports where declarations currently apply should, as a transitional measure, be subject to limited monitoring by the ACCC for a three-year period. Price data should be published annually.

9.4 Economic regulation of related services

The terms of reference also require the Commission to consider services related to towage, including mooring lines.

Unlike towage, the provision of mooring lines and lines launches do not have natural monopoly characteristics — economic barriers to entry are negligible. High charges for mooring lines in some ports appear to reflect State award requirements. There is no case for economic regulation of either activity. Subject to maintaining required safety levels, improvements in labour arrangements should be pursued through negotiation.

Though there are clear cost efficiencies in harbour towage providers also providing fire-fighting services, there is no evidence that towage companies are charging

excessively for these services. Indeed, at some ports, towage providers are not paid for providing fire-fighting equipment. Overall, the link between harbour towage and fire-fighting services appears to be working to the satisfaction of all interested parties.

There are clear synergies between the provision of harbour towage and salvage services. However, salvage tugs can be drawn from a wide range of sources (including from overseas), and the provision of salvage is not a natural monopoly in Australia. The important point in relation to this inquiry is that the efficient provision and pricing of harbour towage (whether these are promoted though direct competition, competitive tenders or price regulation) need not affect the efficient provision of salvage. If there are concerns about the provision of emergency salvage capability in particular locations on the Australian coastline, these requirements should be independently assessed, and consideration given to the need, if any, for special arrangements to ensure provision of that capacity. This question is beyond the scope of this inquiry and, the Commission understands, is being addressed in other forums.

9.5 Concluding remarks

Australia has many commercial ports facilitating diverse trade flows. Ports range from those servicing single users or single commodities to capital city container ports which service a wide variety of shipping lines, users and goods. Yet it would seem that virtually all Australian ports can efficiently support only one towage operator.

At some ports with one or a few users, implementing contractual or other arrangements to promote efficient towage delivery and pricing is relatively straightforward. At ports with multiple users and a history of government ownership and inefficient practices, such arrangements have not been pursued. After a decade or more of significant reforms on the waterfront, in port governance arrangements and in harbour towage itself, there seems to be much greater opportunity and incentive for port authorities and towage users to explore competitive contractual or licensing arrangements.

The Commission is not saying that such arrangements in all circumstances will generate improved outcomes. It is a matter of port authorities and towage users weighing up the potential costs and benefits in each case. Importantly, however, even if their assessment is that the costs would outweigh the benefits, this does not mean there is a case for price regulation. If users or port authorities cannot see net benefits in attempting to bring about lower towage prices by exploiting the

availability of alternative providers of towage, it is even less likely that there will be any scope for the benefits of price regulation to outweigh the costs.

APPENDIXES

A Public consultation

A.1 List of submissions

Participant	*Submission no.*
Adsteam Marine Limited	15, 20, 23, 27, DR29, DR43
Association of Australian Ports and Marine Authorities	4, 25, DR44
Australian Competition and Consumer Commission	21, 26, DR38
Australian Institute of Marine and Power Engineers	14, DR32
Boxall, T.C.	2
Bunbury Port Authority	DR31
CSR Shipping	5
Cumming, Ronald	24
Dale Cole & Associates Pty Ltd	9, DR33
Department of Infrastructure (Vic)	16
Fremantle Port Authority	1, DR35, DR46
Gladstone Port Services Pty Ltd & Brisbane Port Launches	DR39
Islamic Republic of Iran Shipping Lines	13
Melbourne Port Corporation	7, DR41
Merbis, Henk	3
National Bulk Commodities Group	11, DR45
National Farmers' Federation	10, DR40
Newcastle Port Corporation	18
Port of Brisbane Corporation	DR42
Ports Corporation Queensland	17, DR28
PricewaterhouseCoopers	DR30
Queensland Sugar Limited	DR36
Sea Freight Council of Western Australia	8, DR37
Shipping Australia Limited	6, 12, 22, DR34
Sydney Ports Corporation	19

A.2 Visits

Adsteam Marine Limited
APL Lines (Australia)
Association of Australian Ports and Marine Authorities
Australian Chamber of Commerce and Industry
Australian Competition and Consumer Commission
Australian Institute of Marine and Power Engineers
Australian Maritime Officers Union
Australian Maritime Services
Beaufort Shipping Agency Company
Brisbane Marine Pilots Pty Ltd
Bunbury Port Authority
Business SA
Dale Cole & Associates Pty Ltd
Department of Infrastructure (Vic)
Department of Infrastructure, Energy and Resources (Tas)
Department for Planning and Infrastructure (WA)
Department of Transport and Regional Services (Cwlth)
Department of the Treasury (Cwlth)
Essential Services Commission (Vic)
Flinders Ports Pty Ltd
Fremantle Pilots
Fremantle Port Authority
Inchcape Shipping Services
Maersk Australia Pty Ltd
Marine Safety Victoria
Maritime Union of Australia (National Office)
Melbourne Port Corporation
Mitsubishi Motors Australia Ltd
National Bulk Commodities Group
National Farmers' Federation
North Western Shipping & Towage Pty Ltd
Oxfam – Community Aid Abroad
P&O Nedlloyd
Port Kembla Port Corporation
Port of Brisbane Corporation

Ports Corporation Queensland
Queensland Competition Authority
Queensland Transport
REX-LOK Pty Ltd
RIB LOC Australia Pty Ltd
Riverside Marine
Sea Freight Council of Western Australia
Shipping Australia Limited
South Australian Farmers Federation
South Australian Freight Council for Sea Cargo
Teekay Shipping (Australia) Pty Ltd
Transport SA
Tull, Dr Malcolm (Murdoch University)
Victorian Channels Authority
Wallenius Wilhelmsen

A.3 Public hearing participants

Brisbane, 10 July 2002

Gladstone Port Services Pty Ltd & Brisbane Port Launches
Port of Brisbane Corporation
Queensland Sugar Limited

Sydney, 11 July 2002

Adsteam Marine Limited
Australian Association of Australian Ports and Marine Authorities
PricewaterhouseCoopers
Shipping Australia Limited

Melbourne, 15 July 2002

Adsteam Marine Limited
Bunbury Port Authority
Dale Cole & Associates Pty Ltd
Fremantle Port Authority
Melbourne Port Corporation
Sea Freight Council of Western Australia
Shipping Australia Limited

B Efficient pricing of harbour towage

Efficient pricing of harbour towage and the effects of such pricing are discussed in this appendix.

B.1 Harbour towage and efficient pricing

This section briefly outlines some issues relating to efficient pricing, particularly where supply is characterised by decreasing costs. This issue is addressed in more detail in PC (2002a).

Allocative efficiency, in the sense of the best use of *existing* resources, generally requires prices equal to (short-run) marginal cost. Where marginal costs are equal to or above average costs, pricing at short-run marginal cost also will ensure, in the long-run, that average total costs are covered — that is, efficient producers will receive a 'normal' rate of return on their investments, including an appropriate margin for risk.

However, where marginal costs lie *below* average costs for relevant ranges of output — which appears may be the case for the provision of towage services at individual Australian ports — marginal-cost pricing (for all units sold) will not provide an adequate return on capital. Unless the towage provider at least covers total costs (including an adequate return on investment and compensation for risk), the supply of towage services will be less than optimal; indeed, such services may not be provided at all. In the absence of a subsidy, this requires prices that equal, on average, unit or average costs. Average-cost pricing, in this sense, is considered 'second-best' because it will involve a higher price and lower level of sales than the marginal cost ideal.[1] If prices (on average) are set above average cost, reflecting a firm's market power, then sales will be curtailed further and economic losses incurred.

Though average costs must be covered, this does not mean that all customers should pay the same price, or that all units should be charged out at the same rate. If different units incur different costs, efficiency is served by differentiated prices

[1] Of course, even if a subsidy were provided and marginal-cost pricing were feasible, the raising of taxes to pay for the subsidy also would involve economic losses.

reflecting these cost differences. For example, in some ports, some but not all users may drive the need for an extra tug. In this case, higher charges reflecting higher unit costs of the extra tug may be appropriate.

As well as price differentiation reflecting different costs, price discrimination, which essentially involves allocating fixed costs according to the willingness to pay of users, also can promote efficiency. Typically, this will require some form of multi-part pricing, such as different prices for different units sold to a customer (for example, an up-front access fee plus a user charge) or different prices for different customers of the same or different goods and services (according to capacity to pay), or some combination of the two approaches. In this way, fixed costs can be allocated fully to customers, but with marginal consumers and/or marginal sales making little, if any, contribution.

In principle, by discriminating in price, a towage operator with market power in a particular port could extract excess profits while supplying the efficient quantity and quality of towage services. Moreover, a profit-maximising monopolist has a strong incentive to discriminate in price in order to maximise profits. The natural limits to efficient price differentiation or discrimination are set by a lack of information about consumers' preferences, and the transaction costs of devising and enforcing highly complex pricing schedules. Such pricing may also be proscribed or constrained by regulation.

Overall, pricing of towage services does not appear to be highly complex (chapters 2 and 6). Typically, towage services tend to be priced on a 'per tug' basis, so that ships requiring more tugs pay more for a visit to a port. There is some evidence of volume rebates and, at some ports, peak-period charging (usually related to peak seasonal demands) and, in some cases, differentiated pricing of additional tugs reflecting a lower level of use of the services of that tug. For example, at some ports, the charge for using a third tug is higher than the charge for each of the first two tugs. On the other hand, some ports charge a set amount per ship visit regardless of the number of tugs used. These differentiated charges seem to reflect cost variations rather than discrimination *per se*.

That there is little evidence of price discrimination in harbour towage may reflect the fact that there is little variation in demand responsiveness amongst towage users. It also could indicate that towage users have limited market power.

The Prices Surveillance Authority (PSA 1990) suggested that the flat pricing structure for harbour towage indicated inefficient cross-subsidisation across users and a lack of competition in harbour towage. It advocated adoption of 'user-cost' pricing to better reflect the costs of providing services to particular users. As noted above, there is some price differentiation reflecting cost variations. Whether there

should be more is a difficult question to answer. For example, though an extra tug may be required to berth any ship in a particular port in poor weather conditions, it may not be efficient to charge out this extra tug only to those ships compelled to use it. This is because the 'back-up' provides an 'insurance' service for all port users in the case of bad weather. It would be a different matter, however, if an extra tug were stationed in a port solely for the benefit of one user.

B.2 Towage prices and the national interest

The ultimate objective of any regulatory intervention or policy reform should be to promote the national interest. This section briefly explores where the national interest lies in relation to harbour towage services.

As an essential element of a port's services, harbour towage is a cost imposed on cargoes transported by sea. A significant proportion of this seaborne trade — around 90 per cent — comprises international trade, that is, exports and imports. The remaining ten per cent comprises domestically-traded goods.

In general, (and all else given) any reduction in the price of harbour towage at Australian ports will reduce the transport costs and, therefore, the selling price of the good being transported. This, in turn, will generate higher sales, bringing benefits to consumers and producers. The distribution of the gains from trade will be apportioned according to the relative elasticities of supply and demand.

Where goods are traded internationally, non-resident consumers and producers may benefit as well as Australian residents, though the more elastic the foreign demand for Australia's exports, and the more elastic the supply of imports to Australia, the greater will be the share of the benefits accruing to Australian producers and consumers.

Nonetheless, though there will be net economy-wide gains in all but a few unlikely, extreme circumstances, not everyone necessarily will be better off. For instance, local producers of importable goods may face tougher competition from imports (unless they also benefit from lower towage charges) and increased exports will tend to increase prices of these goods on the domestic market. In addition, to the extent that lower towage charges encourage use of shipping as a domestic transport mode, land transport modes may face increased competition. The conclusion that national economic well-being will improve also rests on assumptions that:

- any reduction in towage charges is passed down the supply chain (that is, that there is competition at all levels of the chain so that cost savings in towage ultimately are reflected in selling prices of final goods). This is discussed below;

- lower towage prices and costs are not achieved by reducing the quality and/or safety of towage below their optimal levels (in which case, the *effective* price of harbour towage may increase not decrease); and
- lower towage prices are not pushed below their efficient costs of provision, in which case investment and quality of service are likely to suffer.[2]

Will reductions in towage charges be passed down the supply chain?

Adsteam has suggested that any reductions in towage charges may be appropriated by other suppliers in the transport chain including port authorities or shipping lines. If other suppliers in the chain have market power, it is feasible that any monopoly rent ceded by harbour towage providers would be transferred to these other suppliers to some degree.

This inquiry is not in a position to assess the degree of market power at every level of the supply chain. This report does, however, consider the incentive structures facing and regulation of port authorities and measures of their performance (chapter 5). The conclusion is that reforms in port governance have improved port efficiency and performance, and that most are required to pursue objectives that should broadly promote the interests of users. In many ports, charges have been restructured and reduced. Ports also face some degree of competition and most are subject to State regulation. Even privatised ports (for example, Geelong, Portland) appear to seek efficient towage provision and pricing for the benefit of users, not the port owners.

In 1999, the Commission conducted an inquiry into the liner shipping industry (PC 1999). It concluded that there was effective competition in most liner shipping trades. Liner shipping conferences were facing strong competition from non-conference providers, especially from the newly-emerging lines providing trans-shipment through Singapore.

Nonetheless, there appears to be some concern that any reduction in towage charges may be swamped by movements in shipping rates caused by short-term supply and demand imbalances in liner trades. However, such price movements do not mean that shipping is uncompetitive. Indeed, that shipping lines appear to respond reasonably quickly to these price signals by re-deploying ships across trades to rectify imbalances suggests the market is competitive and that lower towage charges will be passed on to shippers.

[2] It also is assumed that there are no other distortions in the economy that might be exacerbated by lower towage charges.

C International regulatory arrangements

This appendix provides a brief overview of harbour towage arrangements and regulation in selected ports in North America, Europe and the Asia–Pacific. There is a variety of harbour towage arrangements across and within these regions.

This appendix draws heavily on information provided by Thompson Clarke Shipping Pty Ltd and Charles River Associates (Asia Pacific) Pty Ltd, presented as reports 2 and 3 respectively in Adsteam Marine Limited's (Adsteam's) submission to this inquiry (sub. 15).[1] For the purposes of this appendix only, the reports are referred to as TCS (2002) and CRA (2002) respectively.

C.1 Harbour towage arrangements

CRA categorised ports into three types, depending on the extent of their vertical integration: landlord ports, mixed ports and service ports. Landlord ports own the port infrastructure, while marine services (such as towage) and cargo handling are provided by private operators — essentially the Australian port model. In mixed ports, the port company provides some port services, often in competition with private service providers. In service ports, the port company operates the full spectrum of port activities (CRA 2002, pp. 5–6).

Differences in port organisation give rise to a range of approaches to harbour towage provision. At the landlord ports surveyed, towage is generally provided by multiple private operators. At many of the service and mixed ports surveyed, the public port company was generally the sole provider of towage services as well as other port services (table C.1) (CRA 2002, p. 27).

[1] CRA analysis covers: in North America, the ports of Houston, New Orleans, Portland and Boston (US) and Vancouver (Canada); in Europe, the ports of Rotterdam, Hamburg, Antwerp, Amsterdam and Marseilles; and in the Asia–Pacific, Port Klang (Malaysia), Port of Singapore, Port of Colombo (Sri Lanka), and the ports of Auckland and Nelson (New Zealand). TCS analysis covers: in North America, Los Angeles/Longbeach, Philadelphia/Camden and Seattle/Tacoma; in Europe, Hamburg, Rotterdam, Tilbury and Zeebrugge; and in the Asia–Pacific, the ports of Singapore, Hong Kong, Port Klang, Auckland and Yokohama (Japan).

Table C.1 **Harbour towage arrangements, selected ports**

Port	*Port type*	*No. of operators*	*Total no. of tugs in use*	*Ship visits per year (no.)*
Europe				
Rotterdam	Landlord	4	35[a]	30 202
Hamburg	Landlord	3[b]	23	11 900
Antwerp	Service	1[c]	18	15 885
Amsterdam	Landlord	1	9[a]	9 133
Marseilles	Landlord	1	16	9 539
North America				
Vancouver	Landlord	2	15[a]	2 820
Houston	Landlord	2	14[a]	6 801
Portland	Landlord	2	10–20[a]	864
Boston	Landlord	2	15	1 238
Asia–Pacific				
Auckland	Mixed	1[c]	3	1 805
Nelson	Mixed	1[c]	2	1 369
Singapore[d]	Mixed	6	85–100[a]	146 265
Port Klang	Service	2[e]	13	14 207
Port Colombo	Mixed	1[c]	9	3 590

[a] Approximate. [b] One of the three towage operators, Hamburg Tugs, is a joint venture of five companies. [c] Port Authority. [d] Numbers differ from Thompson Clarke Shipping report (TCS 2002). [e] Port Klang is composed of two terminals, each of which operates as a separate port with its own towage service.

Source: CRA (2002).

C.2 Harbour towage regulation

There is a range of regulations affecting harbour towage industries in the countries surveyed. These are presented in table C.2 and summarised briefly here.

- *Price monitoring or regulation* is uncommon.
- *General competition laws* apply to the harbour towage industry in the United States, Canada, the European Union (EU) and New Zealand. In some jurisdictions this is overlaid with other economic regulation, such as the Shipping Act and regulation by the Federal Maritime Commission (FMC) in the United States (CRA 2002, p. 27). Malaysia, which imposes a price ceiling on harbour towage services, has no general anti-competition laws.
- *Industry-specific regulation* exists in all jurisdictions surveyed by CRA, usually with regard to ensuring minimum safety, training and environmental standards. Sometimes these are enforced through licensing. CRA observed that the trend in the United States, the EU and New Zealand seems to be toward a more transparent and flexible approach to meeting entry requirements (CRA 2002, p. 27).

- *Entry restrictions* imposed by government exist in most jurisdictions to some degree, such as the Jones Act in the United States. In addition, contracts and/or performance requirements at the individual port level can restrict entry in some jurisdictions. For example, French ports award exclusive licences for towage provision.

European Union

There is a range of ownership, organisation and administration of ports within and between member states of the EU. General competition rules and competition laws at the member state level apply to port services, including harbour towage. There is no price regulation of harbour towage at either the EU or member-state level (CRA 2002, p. 19).

TCS found that the towage markets in Tilbury, the United Kingdom in general, Hamburg and Rotterdam were generally highly competitive, with no regulatory barriers to entry (TCS 2002, p. 24). In northern Europe, new entrants into a number of ports in the 1990s have sparked 'tug wars' of price-cutting competition (Atkin and Rowlinson 2000).

Industry-specific regulation of the ports industry, including harbour towage, is undertaken at the member-state level and hence is considerably diverse. Such regulation includes standards for training and qualifications of crews, safety and environmental rules. The diversity of industry-specific regulation between member states and its attendant legal uncertainty regarding market access resulted in a recent proposal for an EU Directive on market access to the ports sector. The 2001 EU Directive proposes a pro-competitive framework for industry-specific legislation and seeks to open up access to the provision of port services across the EU. The proposal does not contain rules on forms of port ownership or institutional structure, or harmonised minimum standards for safety, qualifications or the environment. Rather, it contains a set of principles to achieve a more competitive ports industry (CRA 2002, pp. 19–22).

There is a range of entry restrictions into the towage industry in European ports, from no restrictions on entry and no limits to the number of firms that may operate (ports of Rotterdam and Tilbury), to complete restriction (Port of Antwerp, where competing providers are not allowed within the locks) (CRA 2002, p. 10; TCS 2002, p. 23).

In other ports, licences are issued or entrants approved. CRA noted that at the Port of Hamburg, a towage operator must hold a licence issued by the City of Hamburg, which requires that technical, safety and quality standards are met (CRA 2002,

p. 10).[2] At the Port of Amsterdam, the port authority approves new entrants and regulates prices for towage services and vessel requirements (CRA 2002, p. 11).

Competitive tendering for harbour towage services is commonplace in French ports. At the Port of Marseilles, the port company issues an exclusive contract to a single harbour towage provider. Competitive bids are solicited on an annual basis and the contract awarded to the lowest bidder who also satisfies a service standard. Fees for towage services are charged to the shipping companies directly by the port company, which then pays the towage provider the contracted amount. The Marine Marchande regulates vessel requirements, minimum crew size, crew training, and safety standards (CRA 2002, p. 11).

North America

United States

In each of the US ports surveyed by CRA, multiple privately-owned towage companies compete to provide towage services in publicly-owned landlord ports. At each port in the survey, there were found to be no restrictions on entry at the individual port level (CRA 2002, p. 8). At the federal level, the Jones Act (Merchant Marine Act 1920) restricts entry by foreign providers (TCS 2002, pp. 29–30).[3] There is no price regulation or disclosure regime applying to harbour towage in the United States (CRA 2002, p. 14).

The main regulators of harbour towage in the United States are the United States Coast Guard and the FMC. The Coast Guard certifies all commercial vessels, including tugboats, to meet minimum safety and environmental requirements. The FMC is responsible for economic regulation of towage operators under the Shipping Act 1984. The FMC investigates cases of anti-competitive practices in the maritime industry, including unfair practices and unreasonably high tariffs. This role complements general competition laws and the roles of the US Department of Justice and the Federal Trade Commission. Recently, the FMC investigated exclusive tug franchises in the Port of Canaveral and Port Everglades (CRA 2002, pp. 14–17).

2 TCS stated that no licence is required to enter the towage industry in the Port of Hamburg but the government regulates safety and environmental standards and the language ability of operators (TCS 2002, p. 23).

3 The Jones Act requires vessels engaged in trade between US ports, including tugs, to be US Flag, US built, owned by US citizens and crewed by US citizens. TCS noted that the impact of this regulation 'adds significantly to the cost of new tonnage due to the high cost of building a tug in the US' (TCS 2002, p. 29).

Canada

As in the United States, private companies provide harbour towage services in landlord ports. However, in contrast to the United States, all ports in Canada except the Port of Vancouver have only a single provider of harbour towage. Given there are no regulatory or legal barriers to entry, CRA suggested the most likely explanation is that port traffic in other Canadian ports is too low to support more than one operator. In some parts of the Port of Vancouver, towage is provided under an exclusive contract through a competitive tendering process (CRA 2002, p. 9).

Transport Canada is responsible for regulating commercial vessels for safety and environmental standards. The Canadian Transportation Agency, under the Canada Transportation Act 1996, is responsible for economic regulation of towage and other maritime industries. General competition laws under the Competition Act 1986 apply to harbour towage in Canada. The Competition Bureau regulates competition and hears antitrust cases (CRA 2002, p. 18).

Towage rates are determined solely by negotiation between towage providers and shipping lines. CRA observed:

> While all ports other than Vancouver have only one towage provider, there is at least anecdotal evidence that the de facto monopoly towage providers do not attempt to exercise market power and extract monopoly profits from shipping companies. A likely explanation for such conduct is that the incumbent providers are to some degree constrained by the threat of potential entry. (CRA 2002, p. 19)

Asia–Pacific

New Zealand

In New Zealand ports, as for Australia, the small number of towage jobs essentially means that harbour towage is provided by one operator in each port. While there are no explicit regulatory barriers to entry into the provision of towage services, in most cases towage is provided by the port operator. Contracting out provision of harbour towage services occurs in some New Zealand ports, such as at Port Gisbourne, which awarded a long-term contract to Adsteam in 1999. At Marsden Point, the largest customer in the port, Silver Fern Shipping, displaced the local port company as the provider of towage by awarding a contract by tender to North Tugz, owned by Ports of Auckland Ltd (CRA 2002, p. 13).

Towage operators must comply with relevant Maritime Safety Authority regulation and other towage guidelines set by the port or government. Such regulations specify

safety and training guidelines. There is no form of price control — towage operators negotiate towage charges with their customers directly (CRA 2002, p. 25).

Harbour towage services are subject to general competition law under the Commerce Act 1986, administered by the Commerce Commission. This Act prohibits companies taking advantage of market power for certain anti-competitive purposes and prohibits contracts or arrangements which substantially lessen competition. In 1995, the Commerce Commission successfully challenged Port Nelson in the High Court for restricting competition in the provision of pilotage and harbour towage services (CRA 2002, pp. 25–7). A government-commissioned study into the market power of New Zealand's ports was released on 8 May 2002 and may form the basis of policy action (Swain and Gosche 2002).

Singapore

Prior to the privatisation of the Maritime and Port Authority (MPA) of Singapore in 1997, the public port authority was the sole provider of harbour towage. New entrants into the towage industry were prohibited and regulation was prescriptive. In 1997, the MPA began phasing in competition in towage services by issuing 30-year licences to new operators. The decision to license was driven by increasing volumes at the port and the desire to improve service levels and achieve more competitive towage rates. The MPA reported in 1998 that the introduction of competition had improved the quality of towage services in the port (CRA 2002, pp. 12, 24–5).

The MPA now licenses six competing private providers of harbour towage services. Licensing covers minimum training and safety standards and assesses the company's operational capabilities. Licences are issued periodically at the discretion of the MPA. The most recent licence issue was in 1998 (CRA 2002, p. 24).

Towage charges are determined by negotiation between towage providers and shipping lines (CRA 2002, p. 25), although TCS noted that towage pricing is controlled by a published MPA tariff that defines the maximum that can be charged based on ship size per tug (TCS 2002, p. 18). The MPA requires monthly reporting of towage performance with regard to timeliness of arrival (TCS 2002, p. 18).

Malaysia

Port Klang comprises two main competing port terminals, each operated by a publicly-listed port company. Each port company operates its terminal as a service port, providing harbour towage without competition from independent providers (CRA 2002, p. 11).

The Malaysian Government imposes a system of price control on harbour towage services in the form of a maximum tariff. Harbour towage is also governed by industry-specific regulations relating to safety and training. Unlike other countries in the survey, Malaysia has no general competition law framework (CRA 2002, p. 23).

Sri Lanka

The public port authority in the Port of Colombo provides harbour towage services exclusively in the port. Private operators are not permitted by law to provide towage services in competition with the Sri Lanka Ports Authority. Prices are also determined by the Ports Authority. Industry-specific regulation includes safety and training standards (CRA 2002, p. 24).

China (Hong Kong)

There are no licence requirements or regulatory impediments to entering the harbour towage industry in Hong Kong. There are also no price controls, as 'competitive market conditions have effectively frozen prices since 1990' (TCS 2002, p. 18).

Japan (Port of Yokohama)

There are no licensing restrictions or any government controls over pricing of harbour towage in the Port of Yokohama (TCS 2002, p. 18).

Conclusion

There is a diverse range of regulations in the countries surveyed, reflecting a range of different circumstances. As CRA observed:

> … forces acting on harbour towage providers are manifold and multi-layered. Consequently, before forming a view on the adequacy of one level or type of regulation, consideration of all elements of competition, port company organisation and control, and government regulation (including both general competition laws and industry-specific regulation) impacting on harbour towage providers needs to be taken into account. (CRA 2002, p. 28)

In the overseas ports in this study where towage is provided privately, there is generally sufficient competition to ensure efficient pricing through open market competition. This is indicated by the size of the harbour towage market, with large numbers of ship visits, and hence sufficient volume of towage work to support more

than one operator in a port. Numbers of tugs in use at the overseas ports surveyed are also generally higher than in Australian ports. (In the ports with fewer tug numbers such as Auckland and Nelson in New Zealand, the port authority is the sole provider.)

If harbour towage markets are sufficiently contestable, as they are in northern Europe, prices can be expected to reflect efficient costs. This implies that price monitoring or controls are unlikely to improve on market outcomes. It also implies that competitive tendering for licences is less likely to provide a superior outcome to open competition. This may explain the low number of overseas ports that have chosen to tender for harbour towage services.

Industry-specific regulations such as minimum safety, environmental and training standards can, and do, restrict entry into towage operations overseas. The trend in the United States, the EU and New Zealand is towards a more transparent and flexible approach to industry-specific regulation. Harmonising regulations between jurisdictions in Australia reflects the same goal, that is, to reduce the costs of regulation.

In some overseas ports, users have exerted countervailing power and contracted with towage providers themselves (such as at Marsden Point in New Zealand). This is consistent with the Australian experience, which suggests that such arrangements will be most effective in ports where coordination of users is less costly — either where there are a small number of users with similar requirements or there is a dominant user.

Table C.2 **Overview of international regulatory arrangements of harbour towage**

Jurisdiction	*Does government price monitoring or regulation apply?*	*Do general competition laws apply?*	*Does industry-specific regulation apply? If so, in what form?*	*Are there entry restrictions imposed by government?*
European Union	No, not at the EU level. At the member state level, price regulation of port services is not common.	Yes	Yes – largely at the member state level. 2001 EU Directive seeks to make the regulation of access to the provision of port services: transparent; non-discriminatory; objective; relevant; and proportional.	Yes – these can exist at the member state or individual port level. 2001 EU Directive seeks to lower these and to impose requirements that any constraints on entry must be: transparent; objective; and non-discriminatory.
United States	No	Yes	Yes – Coast Guard approval relating to crew training and vessel specifications. FMC plays a key role in both industry and economic regulation.	No – although the Jones Act restricts entry of foreign towage providers.
Canada	No	Yes	Yes – Transport Canada is the key maritime regulator with responsibility for regulating safety and environmental requirements. Economic regulation is the responsibility of the Canadian Transportation Agency.	No – although each Canadian port has considerable discretion in choosing terms under which towage services will be provided.
New Zealand	No	Yes	Yes – Maritime Safety Authority regulations apply to ships operating in NZ waters (that is, requirements for shipping vessels, minimum training for crews, and other safety guidelines).	No

(Continued on next page)

Table C.2 **(continued)**

Jurisdiction	*Does government price monitoring or regulation apply?*	*Do general competition laws apply?*	*Does industry-specific regulation apply? If so, in what form?*	*Are there entry restrictions imposed by government?*
Singapore	No[a]	Not in place – presently no general legislation or regulation which governs anti-competitive activities.	Yes – MPA issues regulations for safety.	Yes – granting of public licences is at the discretion of the MPA depending on market conditions.
Malaysia	Yes – the government sets a ceiling price for harbour towage services.	Not in place – presently no general anti-competitive laws.	Yes – Klang Port Authority administers legislation and by-laws for safety and training.	No
Sri Lanka	No	Unclear – competition law has been in place since 1987 but applies only to private sector enterprises.	Yes – applies to crew training levels.	Yes – government prohibits entry by private operators.

a TCS (2002) noted that towage pricing is controlled by a published MPA tariff that defines the maximum that can be charged.

Source: CRA (2002).

D Port ownership and governance

This appendix is an elaboration of the existing port governance, regulatory and incentive structures in each State and Territory outlined in chapter 5.

New South Wales

In 1995 the largest of New South Wales' ports were corporatised as statutory, State-owned corporations. Sydney, Port Kembla, and Newcastle port corporations were established by Division 1 of the *Ports Corporatisation and Waterways Management Act 1995* (PCWM Act), and under the *State Owned Corporations Act 1989* (SOC Act) and *State Owned Corporations Amendment Act 1995*. Division 3 of the PCWM Act, amongst other things, gives the corporations responsibility for maintaining shipping channels and navigation aids. The NSW Waterways Authority, also created in 1995 under the PCWM Act, manages the ports at Yamba and Eden. The NSW ports corporatisation process was intended to:

> … give a greater focus to commercial port operations and enhance competition in the provision of services to the shipping and cargo industries. (SPC 2001a, p. 31)

The legislated goals of the NSW ports corporations are set out in s. 9 of the PCWM Act (chapter 5, table 5.4). The goals are principally commercial, but there is some potential conflict between the overriding commercial goals and s. 9(a)(iii) which requires the port corporations to:

> … exhibit a sense of social responsibility by having regard to the interests of the community in which it operates and by endeavouring to accommodate these when able to do so.

As State-owned corporations, NSW port corporations are monitored by the NSW Treasury, and are subject to tax equivalence, performance monitoring, borrowing fees, and commercially-based targets and dividends. Section 11 of the SOC Act establishes that the Minister may direct the board of State-owned corporations, such as the port corporations, to carry out any action, but that the corporation is then entitled to be reimbursed — this goes some way towards ensuring community service obligations (CSOs) are transparent and separately funded.

The Sydney Ports Corporation (SPC) administers both Port Botany (Botany Bay) and Port Jackson (Sydney Harbour). The SPC's goal is stated in its 2000-01 annual report:

> Sydney Ports aims … to serve the needs of its customers, while providing an appropriate return to our shareholders, the New South Wales Government.
>
> Sydney Ports' vision is to be an internationally respected commercial port manager in all operational and environmental aspects, and to provide facilities to promote and support trade growth for the benefit of the New South Wales economy. (SPC 2001a, p. 31)

Sydney Harbour Control directs water traffic within the two ports, and the Communications Superintendent (also referred to as the Harbour Master) manages Harbour Control at all times.

The Newcastle Port Corporation has an identical corporate and regulatory structure to the SPC. The Newcastle Port Corporation's vision/mission statement is:

> To increase shipping and other profitable port activity which benefits our shareholders and the Australian economy ... To promote business growth by being the preferred export/import gateway for our customers whilst preserving the environment, maintaining safety and earning a commercial return for our shareholders. (Newcastle Port Corporation 2001, p. 15)

Victoria

Since 1995, Victoria has undergone a comprehensive port structural reform process. Victoria's port regulatory activities have been separated from commercial activities. The administration of land-based assets had been separated from that of water-based assets, but Victoria's Minister for Ports has recently announced that this will no longer be the case. The ports of Portland and Geelong have been privatised and the Port of Hastings is privately managed; the Port of Melbourne is corporatised under the *Port Services Act 1995* (Port Services Act), with management separated from the provision of ancillary services; a channels authority has been created; and ministerial responsibilities have been separated and allocated amongst several ministers. A review of Victoria's port reform process by Victoria's Treasury noted that:

> … the key aim of the reform program was to introduce a competitive environment, so that private business would improve port performance for the benefit of the port's end users. (DoTF 1998, p. 1)

The new owners of Portland and Geelong hold the land assets freehold, rather than on long term leases.[1] The Port of Hastings has been separated administratively from the Port of Melbourne and its management has been tendered to TNT Australia, which therefore manages both Geelong and Hastings ports.[2]

Prior to the establishment of a separate Port of Hastings administrative body, the Port of Melbourne Authority administered both the Port of Melbourne in Port Phillip Bay, and the Port of Hastings, in nearby Westernport Bay. Following the reforms, the publicly-owned Melbourne Port Corporation (MPC) now performs the landlord function at the Port of Melbourne. Ancillary services such as cleaning and maintenance are performed by Melbourne Port Services, now privately-owned by Skilled Engineering Ltd.

MPC's objective as set out in s. 12 of the Port Services Act is unambiguous in its focus on the achievement of efficiency, but there is no mention of profit maximisation. In its 2000-01 annual report, the MPC describes its purpose as:

> To contribute to the sustainable economic and social development of Victoria by providing the best connected and most successful port in Australia. (MPC 2001, p. 6)

Section 30 of the Port Services Act makes port corporations subject to written ministerial directions from the Victorian Treasurer, but such directions must be gazetted as soon as possible after they have been given. Section 38 establishes that port corporations may be directed to perform non-commercial functions that the Treasurer deems in the public interest:

> If the port corporation satisfies the Treasurer that it has suffered financial detriment as a result of complying with a direction … the port corporation may be reimbursed by the State an amount determined by the Treasurer. (Port Services Act, s. 38)

The requirement for gazettal achieves transparency and s. 38 establishes a mechanism for separate funding of CSOs, but any actions within that mechanism are at the discretion of the Treasurer. This seems to leave scope for the MPC to be forced to undertake unfunded CSOs.

Recognising the potential conflicts of interest that can result from having the same shareholder and industry regulator, the Victorian Government assigned different roles to separate ministers. The Victorian Treasurer is the 'shareholder', the

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1 The Port of Portland is owned and operated by the Port of Portland Pty Ltd, which is owned in turn by Port of Portland Holdings Pty Ltd. The Port is ultimately owned by Utilities Trust of Australia (a private infrastructure fund) and Australia Infrastructure Fund (a publicly-listed infrastructure fund) both of which are managed by Hastings Funds Management.

2 The Port of Geelong is owned by Ports Pty Ltd, a joint venture between Primera, a wholly-owned subsidiary of TNT Ltd and Infrastructure Investment Corporation Ltd. Management at Geelong is performed by TNT Ltd, as Geelong Port Pty Ltd.

Minister for Finance administers the independent State regulator — the Essential Services Commission (previously the Office of the Regulator-General), and the Minister for Roads and Ports has responsibility for Marine Safety Victoria.

Established by the Port Services Act, the Victorian Channels Authority (VCA) has been maintaining commercial channels and navigation aids, managing the movement of commercial shipping in Victorian Ports, and dredging shipping channels. However, the Victorian Government announced on 13 July 2002 that the VCA and MPC will be merged within twelve months. At Portland and Hastings, under an agreement with the VCA, the port operators have provided channel operator services themselves. The VCA has also been a one-stop-shop coordination point for lines and shippers to order pilot services, tugs, lines boats, quarantine services and customs (VCA 2002b).

The licensed Harbour Master for Melbourne and Geelong currently works under the VCA as the VCA's Manager of Marine Operations. The general powers of a Harbour Master are provided under ss. 86 and 87 of the Port Services Act (VCA 2002a, p. 4).

Queensland

The ports at Brisbane and Gladstone were corporatised in 1994, and Bundaberg, Rockhampton, Mackay, Townsville and Cairns were corporatised in 1995, under the *Government Owned Corporations Act 1993* (GOC Act), the *Transport Infrastructure Act 1994*, and the *Financial Administration and Audit Act 1977*. The Minister for Transport and Main Roads, and the Treasurer are the shareholding Ministers. The Ports Corporation of Queensland, corporatised in 1994, administers the State's remaining ports.

Under s. 17 of the GOC Act, the corporatised ports have the goals of improving Queensland's overall economic performance and the efficiency and effectiveness of government-owned corporations. There is a potential conflict with the goal of improving the Government's ability to achieve social objectives.

Similar reporting and shareholding arrangements apply to Queensland's government-owned corporations as in New South Wales and Victoria. In addition, s. 121 and s. 122 of the GOC Act require any CSOs to be set out explicitly in the corporation's Statement of Corporate Intent, along with costings and funding. In relation to government directions to ports corporation boards, the shareholding Ministers may give written directions to the corporations where it is considered in the public interest.

Section 124 of the Act states:

(1) The shareholding ministers of a GOC may give the GOC's board a written direction in relation to the GOC and its subsidiaries if the shareholding Ministers are satisfied that, because of exceptional circumstances, it is necessary to give the direction in the public interest.

(2) The board must ensure that the direction is complied with in relation to the GOC and must, as far as practicable, ensure that it is complied with in relation to its subsidiaries.

(3) Before giving the direction, the shareholding Ministers must –

    (a) consult with the board; and

    (b) request the board to advise them whether, in its opinion, complying with the direction would not be in the commercial interests of the GOC or any of its subsidiaries.

(4) The shareholding Ministers must cause a copy of the direction to be published in the gazette within 21-days after it is given. (GOC Act, s. 124)

Transparency is therefore achieved through the requirement for directions to be tabled and through the provisions of ss. 121 and 122.

Queensland's regulatory structure allows some of its port authorities to enter into contracts with towage providers and to insert contract conditions (box D.1).

Box D.1 **Regulation 44 — licensing of towage services**

Regulation 44 of Queensland's *Transport Infrastructure (Ports) Regulation 1994* gives Bundaberg, Cairns, Gladstone, Mackay and Townsville port authorities the ability to authorise towage services under any conditions they see fit — including exclusivity. Townsville and Gladstone have exercised this ability to license single towage providers exclusively, preventing access to their ports by potential competitor towage providers for the term of the licence.

Queensland's Department of Transport has conducted a review of regulation 44 under the National Competition Policy framework. The draft final report's recommendation is that the regulation be extended to all of the State's ports and that port authorities be free to use the regulation at their discretion, including the application of exclusive licences, so long as they are subject to publicly advertised competitive tendering.

Source: Economic Associates (2001).

Western Australia

Western Australia's eight port authorities — Broome, Port Hedland, Dampier, Geraldton, Fremantle, Bunbury, Albany and Esperance — are commercialised State

government authorities under the *Port Authorities Act 1999* (PA Act). Part 11 of the PA Act allows port authorities to make regulations. Although the port authorities are under the regulatory responsibility of the Minister for Transport, they pay dividends to the Treasurer.

Section 33 of the PA Act requires port authorities to act in accordance with their strategic development plan and statement of corporate intent, and that these documents then override s. 34, which requires that port authorities act in accordance with prudent commercial principles and endeavour to make a profit. It is unclear what constitutes prudent commercial principles, and the requirement that port operators make a profit would seem to provide a weak incentive for management to minimise total port costs, relative to the commercial objectives of corporatised port authorities in New South Wales, Victoria and Queensland — merely making a profit need not require efficiency-maximising policies.

Section 72 of the PA Act allows the Minister for Transport to give port authorities written directions, which must be tabled in Parliament within 14 days. Section 43 of the PA Act requires port authorities to consult the Minister for Transport regarding major initiatives. With regard to harbour towage, this means port authorities must gain approval from the Minister before issuing an exclusive licence. The Minister then applies a 'public interest test' to determine whether such an exclusive licence is in the public benefit.

South Australia

In South Australia, all the State's mainland port facilities have been privatised. Flinders Ports consortium — comprising Adsteam Marine Limited (Adsteam) (14.3 per cent), the French company Groupe Egis (7.15 per cent) and the balance held by three institutional investors — have taken up a 99-year lease (from 1 November 2001) on land owned by the SA Ports Corporation and purchased the wharves, buildings, plant and equipment and the ongoing business. The privatisation covers the ports of Adelaide, Port Lincoln, Port Giles, Klein Point, Thevenard, Wallaroo, and Port Pirie. The port at Ardrossan is privately operated by AusBulk Ltd. Whyalla is owned and operated by BHP. Port Stanvac is owned and operated by Mobil Oil. Several ports associated with Kangaroo Island have been transferred from SA Ports Corporation to the Department for Transport, Urban Planning and the Arts.

The Government Enterprises Minister noted that the privatisation deal was worth $186 million to South Australia. This includes $130 million in cash (plus $3 million in interest) and provision of $52.8 million for dredging and construction of a new berth for large grain ships (Armitage 2001).

Flinders Ports has contracted port management to AdEgis, a joint venture between Adsteam and Groupe Egis. Adsteam also provides towage services to all ports operated by the consortium, as well as to other ports when towage services are required.

The 2000-01 Annual Report of the Department for Administrative and Information Services noted that the objectives of the divestment process were to maximise the returns to SA taxpayers, remove the risks associated with continued State ownership and lost opportunities, and encourage economic development. Also discussed publicly by the South Australian Government at the time, was a desire to retire state debt with proceeds from the divestment of SA Ports Corporation.

The South Australian Independent Industry Regulator regulates port services and charges but not towage.

Tasmania

Tasmania's four commercial ports were corporatised in 1997 and are now administered by the Hobart, Launceston, Devonport and Burnie port corporations under the *Port Companies Act 1997* (Port Companies Act), the *Government Business Enterprises Act 1995*, and the *Marine and Safety Authority Act 1997*. Shares in the corporations are jointly held by the Minister for Infrastructure, Energy and Resources and the Treasurer. The assets of the former marine boards were divided between the port corporations and the newly created statutory authority, Marine and Safety Tasmania.

The statutory goals of the port corporations, established by s. 7 of the Port Companies Act, do not seem to conflict — they require port operation in accordance with sound commercial practice and the facilitation of trade for the benefit of Tasmania — but nor do they establish an unambiguous requirement for efficiency maximisation.

Section 13 of the Port Companies Act makes ports subject to all rates, taxes and duties as a private sector corporation and to pay tax equivalents where necessary to reflect actual taxes. As with other States, Tasmania's port corporations face an ambiguous mechanism for the refunding of CSOs. Section 27 of the Port Companies Act stated:

> (1) The Minister, with the approval of the Treasurer and the Board of a company, may enter into an agreement under which the company or its subsidiary agrees to perform, or to cease to perform, activities.

(2) The terms of the agreement may provide for reimbursement to the company or its subsidiary out of money provided by Parliament for the purpose. (Port Companies Act, s. 27)

Transparency for CSOs is therefore provided to the extent that the State parliament is required to approve funding, providing a public forum for CSOs to be discussed.

Northern Territory

The Northern Territory Government has corporatised the port of Darwin under the *Darwin Port Corporation Act* (DPC Act). The other major Northern Territory ports of Milner Bay and Gove are privately operated by the Groote Eylandt Mining Company and Nobalco respectively.

Section 17A of the DPC Act stipulates that the Darwin Port Corporation (DPC) must act in a commercial manner, though s. 15 establishes that the DPC is subject to the written directions of the Minister. The DPC's mission statement is:

> To facilitate the efficient movement of trade through the Port of Darwin in a commercial manner and to continue the development of the Port of Darwin as a strategic element of a multi-modal transport hub for the benefit of the Northern Territory community. To deliver specific Community Service Obligations as required by Government. (Darwin Port Corporation 2001, p. 24)

E Competitive tenders, contracts and licences

One issue that has elicited a range of views in this and other inquiries (for example, PSA (1990), IC (1993), ORG (1999), Economic Associates (2001), CRA (2002)) is whether competitive tendering for a contract or an exclusive licence can deliver more efficient outcomes than other arrangements for allocating the market to a provider. In the Commission's view, the short answer in relation to towage services at a port is that it depends on a range of factors (chapter 8). These are explored further in this appendix.

E.1 Natural monopoly and exclusivity

If the efficient provision of harbour towage requires only one operator in a port, then the choice is not between ongoing competition within the market and an exclusive licence or contract. The choice is between various forms of competition, or contest, *for* the market — a price war or war of attrition, takeover of the incumbent, or competitive tender for the right to service the market.

On the other hand, if two or more operators could efficiently service the market, or because consumers place a high value on variety, allocating an exclusive right to operate clearly would restrict competition and choice *in* the market.

The evidence presented to this inquiry supports the view that in most, if not all, ports in Australia, efficiency will be served by having one towage provider. It also seems reasonable to conclude that towage is a reasonably homogeneous service and that port users do not place a high value on variety. Hence, competition *within* a port is unlikely to generate the lowest costs of provision, and therefore unlikely to be sustainable, within most if not all Australian ports.

In these circumstances, the question becomes one of determining the best process for selecting the sole provider that will deliver the desired service quality at the most efficient prices.

E.2 Mechanisms for allocating the market to a supplier

War of attrition

If there are some barriers to entry (and evidence before the Commission suggests that barriers to entry, though not high, are not insignificant), there is scope for an incumbent provider to earn prices that exceed average costs. Actual prices (and the price margin) will be limited by the size of barriers to entry relative to the costs of the most efficient alternative provider. If this price margin persistently exceeded the barriers to entry, another provider would have an incentive to enter the market.

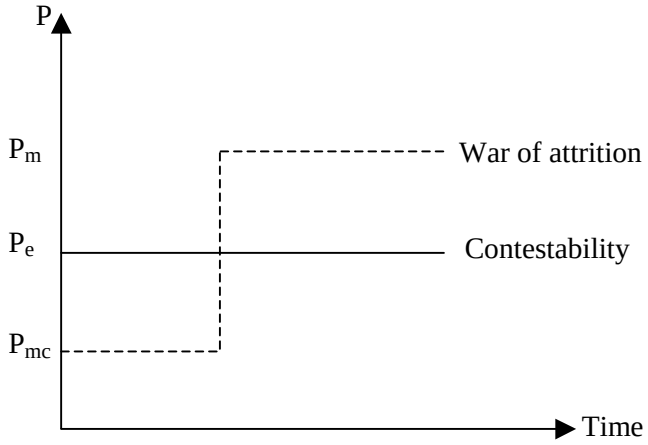
When entry occurs, it is possible that a price (or quality) 'war' ensues. The length of the war will be a function of the rents to be gained by an entrant (or lost by the incumbent). For the duration of a price or quality war, towage customers will benefit from low prices or high quality.

At the same time, however, there is a resource cost because too many tugs will be operating (inefficiently) in the port. Eventually, the less efficient operator will be forced to leave, or the more efficient operator may attempt to staunch its losses by buying out the competitor. The remaining operator then will be able to charge a price that reflects efficient costs *plus* a margin equal to barriers to entry.

Thus, as shown in figure E.1, the war of attrition involves a period of low prices during the contest (possibly as low as marginal cost) followed by a period of higher prices which incorporate monopoly profits (Tirole 1988). (If there were perfect contestability, the price would be constrained to P_e — that is, the efficient price which, with decreasing costs (see appendix B), means price equal to average cost.)

The price war also will tend to dissipate any expected monopoly profits in higher costs during the period of the battle. Nonetheless, a more efficient operator can win the market or, even if they do not win, the incumbent will be forced to adopt efficient practices to deter entry.

Figure E.1 **War of attrition: price path over time**



P_m: price incorporating excess profits. P_e: efficient price (= average cost). P_{mc}: price = marginal cost.
Source: Tirole (1988, p. 312).

Takeover

A takeover avoids the price war (and the resources used up in this process) because the firm acquiring the incumbent buys out the expected monopoly profits of the incumbent. Because the incoming firm pays for the right to operate, the price to consumers will continue to incorporate a margin above efficient costs, though it might be expected that more efficient firms will buy out less efficient ones and thus price could fall to reflect lower costs. Capital market pressures and the threat of takeover also could place pressure on incumbents to improve efficiency. However, the takeover process itself will use up real resources, including legal and accounting costs.

Competitive tenders for exclusive contracts or licences

A competitive tender for an exclusive licence or contract is an alternative mechanism for determining which *single* operator will provide towage services at the port. If towage users deal directly with towage operators, they can regulate the operators via contracts. Because port authorities do not pay for towage directly, but control the port and access to wharves and so on, they can control towage prices and service levels via licence conditions applied to towage providers.

A competitive tender could be awarded on the basis of the highest bidder (in monetary terms) for the contract or licence. In this case, the most efficient operator would tend to win but towage prices would incorporate monopoly rents for the

period of exclusivity. These unconstrained monopoly prices will be higher than those that would apply in the same port if harbour towage operators were subject to a threat of entry. Yet the towage operator will not earn monopoly profits — who benefits will depend on how the proceeds of the tender are used by port personnel and shareholders. The Commission is *not* supporting this as the preferred way of bringing contestability to harbour towage in Australian ports.

Alternatively, the competitive tender could be awarded on the basis of the *lowest* price for a specified level of service (see section E.5). Once again, the winner would tend to be the most efficient provider but the competitive bidding process also would tend to constrain prices to equal efficient costs.[1] Thus the major potential advantage of competitive bidding is that rents are not dissipated and, moreover, can be captured by users in the form of lower prices.

Even in highly-competitive markets (with many providers), consumers frequently select suppliers on the basis of competitive tenders and enter into contracts for fixed periods. Competitive tendering provides a search mechanism as well as a means of promoting competition between bidders. Contracting can bring benefits by ensuring quality needs are met and by reducing transaction costs compared with frequent spot purchases. As observed by Menez and Pitchford:

> Supply contracts and access could be allocated in an ad-hoc fashion, but this would simply be equivalent to allocating these scarce resources through particularly badly designed auctions! (2001, p. 3)

However, though competitive bidding can achieve more efficient pricing, the process is not costless. The costs of competitive tendering include the transaction costs of tender process administration, research and preparation costs incurred by prospective service providers, and renegotiation/re-tender costs incurred by all parties at the end of the licensing period.

An exclusive licence (or contract) associated with a competitive tender also generates costs and benefits. In addition to contract management costs, there is a risk that by locking out competing service providers for the duration of the contract, the adoption of efficiency-enhancing technologies or other innovations (not foreseen at the time of the tender), which would reduce prices or enhance service quality, will be delayed. On the other hand, a major benefit of a contract or licence for a set period is that it provides a period of certainty during which a firm can recoup specific investments.

[1] How close will depend largely on the extent of competition among bidders and the rigour of the tender process.

E.3 Adsteam's arguments against tenders and exclusive licensing

Any individual or firm making a decision whether or not to hold a competitive tender and to enter a contract will have to make an assessment of the net benefits compared with alternative forms of search and selection. It has been suggested to this inquiry by Adsteam Marine Limited (Adsteam) (subs DR29 and DR43) that it is unlikely that competitive tendering for contracts or licences will yield net benefits in the case of harbour towage. The main reasons given are that:

- competitive tenders will allow expropriation of an incumbent's sunk investments (especially in labour-saving changes), which currently are being undertaken because of the existence of (small) barriers to entry. Thus competitive tendering removes incentives for providers to undertake such socially-useful, cost-reducing investments in future;
- the transaction costs of competitive tenders are very high, while contracts inevitably reduce dynamic efficiency. These costs almost certainly will outweigh any (very small) static efficiency gains from lower prices achieved through a competitive tender;
- contestability in the towage market ensures efficient outcomes anyway;
- if port authorities are given the power to license towage providers on behalf of towage users, ports may override the interests and preferences of users and appropriate cost savings themselves via excessive licence fees or other port charges (section E.4); and
- competitive tenders for exclusive licences will undermine Australia's salvage capability. (The link between competitive tenders and salvage is examined in appendix F.)

Expropriation of sunk investments

Network Economics Consulting Group (NECG), in a report prepared for Adsteam, argued that:

> It is likely that exclusive licensing does expand entry into the harbour towage market increasing competitive pressures and lowering prices. However, what is at issue is precisely whether the expansion of entry facilitated by exclusive licensing is **efficient** in the sense that it durably lowers the total price of the bundle of services users purchase. There are good reasons to doubt that it is in fact efficient. (Adsteam, sub. DR43, report 3, p. 12)

Specifically, NECG argued that barriers to entry, while low, give Adsteam sufficient market security to undertake socially-useful cost-saving investments

(essentially, it would appear, redundancy payments needed to secure reduced labour costs), which generate a one-off increase in its costs relative to new entrants. In other words, it is suggested that the price margin afforded Adsteam by barriers to entry is used to undertake socially-useful investments, which in more competitive conditions would not be undertaken because Adsteam's competitor would benefit more from the investment than Adsteam (for example, because of negotiated reductions in labour conditions). NECG claimed that competitive tendering, by increasing competition, would allow rivals to benefit from previous Adsteam investments and effectively remove the incentive for such investments to be undertaken by an incumbent in future.

Where an incumbent, in effect, has been given a monopoly or guarantee and consequently invests in projects with long-term pay-offs, any subsequent opening of the market to competition will mean that a new entrant can offer lower prices (or offer more for the right to operate) to the extent that they can free-ride on the previous incumbent's sunk investment. The fundamental issue is the change in rules and the effect of this on the risk assessment of future investments.

Though changing rules can have significant effects on future behaviour by increasing the risks of commitment, this argument does not seem to apply to the introduction of competitive tendering in the case of harbour towage.

- As noted by Adsteam, it, or any other incumbent operator, can earn a margin above costs at certain ports which reflects barriers to entry. This means that were the incumbent to undertake an investment that benefited its rivals more than itself, this would reduce the price margin and profits it could earn. A profit-maximising incumbent without a guaranteed market (and as far as the Commission is aware Adsteam has no such guarantee in ports where it operates without a contract or exclusive licence) would not undertake such 'public good' investments because they would reduce its profits.
- Where sunk investments will benefit users (either by reducing prices and/or improving quality), contracts can allow investment costs to be recouped. Moreover, contract terms can stipulate the investments to be undertaken. This may be a more direct and efficient method of ensuring efficient investment than allowing an incumbent an undefined price margin which they can earn without undertaking desirable sunk investments.
- To the extent that Adsteam has undertaken sunk investments to reduce its labour costs, presumably it has done so to improve or maintain its competitive advantage relative to potential entrants (who also are likely to be exploring lower-cost modes of operating). In particular, scope under current industrial relations arrangements for enterprise-based agreements makes it more likely that new entrants will negotiate their own labour arrangements (subject to the no

detriment test), which in turn puts Adsteam under increased pressure to reform. That Adsteam, as a long-time incumbent operator, may have accrued large redundancy liabilities[2] may place it at a disadvantage relative to new entrants. In other words, this disadvantage will increase (and presumably has increased) competitive pressure on Adsteam to reform labour arrangements under current 'open entry' arrangements.

- If individual firms have the flexibility to negotiate enterprise-based arrangements, the competitive-tender process should elicit a range of productivity-enhancing labour arrangements, which do not rely on reforms being undertaken by an incumbent. And as noted above, to the extent that such arrangements require some sunk investments, a contract or licence for a fixed term is likely to provide some certainty of a pay-off over time and thus promote, rather than discourage, such investments.

Hence, there seems to be no reason to expect that the introduction of competitive tenders for exclusive licences would deter an incumbent or potential entrant from aiming for improvements in efficiency and indeed, it may increase the incentive for firms to do so.

The costs and benefits of tenders and contracts

Analysis undertaken on behalf of Adsteam by ACIL Consulting and Charles River and Associates (Adsteam, sub. DR43, reports 1 and 2) suggests that the costs of a competitive tender process for towage, plus the dynamic efficiency losses from a contract or exclusive licence, almost certainly will outweigh the small efficiency costs of prices somewhat above costs.

While tendering and contracting clearly incur costs, the analysis prepared for Adsteam provides an incomplete basis for assessing the net benefits (or net costs) of this option relative to other forms of competitive selection.

- The costs incurred by participants in 'open entry' markets — particularly in markets where some rents can be earned because of barriers to entry — seem to be underestimated. As noted above, head-to-head competition for a market (a 'war of attrition') is likely to involve some dissipation of expected future rents because of inefficient resource use during the war. Even if actual entry does not occur, an incumbent is likely to engage in activities designed to deter entry. Moreover, if Adsteam is subject to constant competitive pressure as it claims,

2 When Adsteam bought out Howard Smith's towage operations in 2001, presumably it had an opportunity to discount the purchase price by the amount of any expected costs of reforming inefficient work practices, including contingent redundancy liabilities.

then potential entrants must be considering entry, making an assessment of the market and so on, all of which uses up resources. A takeover bid also will use up resources including assessment of the market and due diligence of the target firm. These costs — essentially forms of rent dissipation driven by the 'prize' of prices above costs when only one firm remains in the port — must be added to the deadweight losses (incurred in each period) associated with prices remaining above costs. Even if there is no rent as such, market competition involves costs of search and so on, which must be weighed against the costs of alternative competitive selection mechanisms such as competitive tendering.

- Though contracts or licences may risk a loss of competitive pressure for the duration of the contract/licence (and possibly after completion of the contract), this must be balanced against the potential benefits (to both buyers and sellers) provided by the certainty the contract provides. The contract length is critical in this regard.

If the analysis presented by Adsteam were correct, then it would seem that there could be virtually no benefits from competitive tendering and contracting in any activity. In the Commission's view, such an *a priori* assessment is not supported by the abundant evidence that firms and consumers use competitive tendering and contracting in a wide variety of circumstances. Moreover, many towage users and ports use competitive tendering, contracts and/or licensing to select providers and to specify quality and so on, which suggests that the benefits can outweigh the costs. The key additional issue to be addressed in the case of multi-user ports is whether port authorities can act as effective agents for users.

Contestability

Adsteam has also argued that competitive outcomes are being achieved now in harbour towage markets, making competitive tendering redundant and counter-productive:[3]

> Ultimately, Adsteam does not believe that exclusive licences will increase the efficiency of any aspect of towage services in Australian ports over and above what can already be achieved, at less cost, through open-market competition. Indeed, it believes that the detriment of this form of regulation could be very significant, especially when the economic costs of licensing are fully assessed. (sub. DR43, p. 3)

If an incumbent were very efficient in its operations and pricing, it is correct that a competitive tender may bring about little improvement and, moreover, the costs of

[3] This statement apparently contradicts NECG's conclusion that 'it is likely that exclusive licensing does expand entry into the harbour towage market increasing competitive pressures and lowering prices' (Adsteam, sub. DR43, report 3, p. 11).

the tendering process would be borne by users. Nonetheless, if users are unsure that they are obtaining the best service at the best-possible price, a tender may be an efficient way of searching and 'testing' the market. Users may also prefer the opportunity that contracts/licences provide for specification of service levels, including the conditions under which tugs can leave a port to undertake other work such as salvage.

E.4 Alignment of interests of port authorities and towage users

If users themselves were to make a decision to conduct a tender for towage services, there would (and should) be no policy concern (unless, of course, they were to form a buying group that required authorisation under the *Trade Practices Act 1974*). If port authorities act as the agents of users, then the Commission agrees with concerns expressed by Adsteam and the ACCC that it cannot be assumed that efficiency and user interests will be pursued fully (subject to legitimate port concerns regarding the efficiency of port operations and safety). As noted by Menezes and Pitchford in discussing efficient tenders and auctions, 'the crucial aspect [is] that the firm's objectives [are] correctly aligned with the goal of keeping customer prices low' (2001, p. 6). Hence the Commission's recommendation for a range of safeguards were this option to be pursued (chapter 9). Nonetheless, it should be noted that any mechanism that promotes efficient pricing of harbour towage (including head-to-head competition and price regulation), provides an opportunity for a port authority with objectives that conflict with user interests to capture some or all of the savings from lower towage charges by imposing higher port charges.

In allocating licences to towage providers, port authorities are fulfilling the role of agent in a principal-agent scenario. The principals in this case are the users of towage services, who pay for services. The agent, the port authority, simply ensures the service is provided. The principal-agent problem occurs where the agent does not have incentives aligned with the principal.

Thus, pivotal to the effectiveness of a towage licensing system in achieving efficiency in towage pricing for port users, is the incentive structure of the port authority. In the case of harbour towage services, it is a question of whether port authorities have incentives to reduce overall costs for port users, or whether they face incentives which mean they do not necessarily wish to minimise the cost to port users of visiting their port.

If port authorities' incentives are not aligned with port users', then savings achieved in towage pricing may be expropriated by the port in the form of higher port charges levied on users, or by excessive licence fees levied on towage providers.

However, where port authorities are subject to commercial or regulatory incentives to attract and retain port users as clients of the port, port authorities' incentives are more likely to align with users' interests. That is, in striving to increase client numbers and therefore the amount of business going through the port, port authorities will attempt to minimise total costs for port users. In addition to inter-port competition, port reforms have created legislative and regulatory frameworks more conducive to efficient pricing than perhaps was the case in the past. Prices oversight of port charges and other port costs is in many instances undertaken by State regulatory agencies. For greater detail, see appendix D.

It also has been suggested that user choice will be reduced by a port authority acting as an agent. Certainly there would not appear to be any case for a port authority acting on behalf of users if users efficiently can choose and contract directly with a towage operator. But in ports with multiple users, most users may have had little influence on the 'choice' of the sole incumbent. That will be a function of history and, in the event of entry by a new operator, perhaps the result of buying preferences exercised by the larger users in the port. The level of service also presumably will reflect some 'average' preference of users. In other words, given that there will be only one provider, user choice as to the provider and level of service is also limited under a system of open entry.

E.5 Implementation of competitive tenders

Some implementation issues associated with competitive tenders and contracts are discussed in this section.

Competitive tenders are a particular form of auction. Auctions are used in many circumstances where the market value of the items for sale is not known by the seller. Port authorities use a particular form of auction to allocate licences — a negative auction, or competitive tender. Effective auctions achieve two objectives — they allocate items to their highest value use via an 'allocation rule' (see below), and set prices through a 'pricing rule' (a variety of pricing rules is possible, not necessarily the price bid by the winning bidder). Box E.1 sets out the four basic auction types.

Box E.1 **Types of auction**

All auctions are some variant or mix of four basic auction types. Each auction type incorporates an allocation rule and a pricing rule.

English auctions are open and ascending — bids are known to all bidders (open) and prices rise in subsequent rounds (ascending) until only one bidder remains and the item goes to that bidder at the price they bid in the final round.

Dutch auctions are open and descending — the auctioneer commences with very high prices and all bidders observe (open) as the auctioneer calls gradually lower prices (descending), until a bidder indicates they are willing to pay at that price. (Dutch auctions are named thus because of the auction system used in the Netherlands to sell flowers for export.)

First-price sealed-bid auctions are closed, single-round, auctions — bidders submit single (single-round) confidential bids (closed) and the highest bidder wins and pays their bid (first-price).

Vickrey auctions are closed, single-round, second-price auctions — bidders submit single (single-round) confidential bids (closed) and the highest bidder wins, but pays the second-highest bidder's bid price (second-price). There are theoretical advantages to this design in eliciting bidders' true valuations because the bidder knows that, if successful, he/she will pay a lower price than bid. Vickrey auctions are named after the Nobel-prize-winning economist and auction theorist, William Vickrey.

Sources: McAfee and McMillan (1987); Menezes and Pitchford (2001).

Auction designs become more complicated when designers try to attract additional bidders or dissuade some types of bidders from participating, attempt to incorporate multiple items instead of single units, attempt to counter the possibility of collusion between bidders, try to favour some classes of bidders over others, or try to transfer risk from the seller to bidders. In some fields, such as the allocation of radio-frequency spectrum, the development of auctions is ongoing — more complex auctions are being designed as auction theory and technology develop in pursuit of greater allocative efficiency.

By comparison, the tendering of harbour towage licences would seem to require a relatively simple type of tender. It involves allocation of single units (licences) rather than multiple units with strong synergies between units; there do not seem to be grounds for favouring a class of service provider over others; specification of service requirements can ensure services are appropriate to individual ports with specific needs; and tendering may reduce the risk of collusion when compared with multiple providers competing in a port for limited business.

Because the effective allocation of licences for towage does not seem to warrant complex tender designs, the more complex extensions of the basic auction types are not discussed further in this report.[4]

Competitive tenders are a variant of the first-price sealed-bid auction, with the variant that bidding is 'negative' (lowest-price) instead of 'positive'. The licensing agency, in this case the port authority, follows a process of informing interested parties of the service requirements and provides any background information necessary for interested parties to put together their 'bids'. The port authority assesses offers and enters into a contract with the successful bidder. As in other auction forms, tender processes include an allocation rule and a pricing rule.

Allocation and pricing rules

The allocation rule in a tender process may be straightforward, such that the lowest-cost bid wins, or the allocation rule may be a more complex mix of price and service characteristics. The concept is the same whether services are rigidly specified or not — the seller is looking for the best mix of service and price. It is appropriate that the assessment criteria are well-specified and their relative importance be made clear to tenderers prior to the seller accepting tenders.

The pricing rule usually requires the winning tenderer to charge the price or price schedule included in its winning tender. It is unusual for tender processes to include anything but a straightforward pricing rule. However, funding formulae, including financial penalties linked to performance indicators, are common when incorporating incentive mechanisms into contract conditions.

Objective assessment criteria

Objective tender assessment requires clear specification of the tender assessment criteria and the weightings attached to each criterion. It is common for documentation provided to prospective tenderers to include a listing of selection criteria and the weightings attached to each.

In principle, the more directly comparable are submitted tenders, the more objective and transparent the assessment will be. Specifying in the tender documentation a required level of service allows tenders to be assessed on objective grounds — that is, price. Assessments made using other measures become more difficult to

4 Interested readers are directed to the Productivity Commission's report on radiocommunications (PC 2002c, appendix E), for a more detailed discussion of auction types and the complexities associated with multiple-round auctions of multiple items with synergies between items.

quantify, and can lead to subjective judgements, potentially undermining the transparency of the process. However, a balance must be found between price and other criteria. When non-price criteria are to be used, they should be judged as objectively as possible.

Tender processes which use a combination of price and service characteristics to determine the winning tenderer are colloquially known as 'beauty contests'. Such processes are generally considered to be less transparent and may be more open to criticism. To avoid, as much as possible, beauty contests, port authorities could specify clearly the level of service required and the importance of port ancillary services such as fire-fighting and other emergency response capacity.

As far as is practicable, port authorities should specify that potential service providers must meet certain service standards and bids will then differ mainly in the price they charge for those services. Nevertheless, different bidders may offer a range of ways of meeting specified service standards.

Importantly, it could be counter-productive for port authorities to attempt to specify how service standards are to be met. To allow flexibility in service provision and to encourage innovation in technology, asset use or management, it is highly desirable that tenderers are able to meet minimum service requirements in any way they see fit, subject to health and safety and any other mandatory requirements. Therefore, a port's requirements should be specified in terms of outcomes rather than methods of service. This also would allow providers of harbour towage to exploit more easily economies of scale in the provision of related services such as salvage.

Bidder numbers

Without sufficient competition within the tender process, the prospective benefits from tendering may not eventuate. Menezes and Pitchford (2001, p. 31) note that 'an auction with few bidders will tend to reduce the expected revenue of the seller, as well as being potentially inefficient'. In the case of a tender for services, increasing the number of competing prospective providers increases the likelihood of a greater variance in proposed prices and increases the pressure on competitors to price as close as possible to unit cost, and so improves the expected result for towage users. Chapter 6 notes a range of domestic and international firms that have been involved in takeovers, tenders for licences and contracts and direct entry into the Australian towage market in recent years.

Testing the strength of interest in the market for towage services may be achieved by direct consultation with prospective providers, or by advertising for expressions of interest. The appropriate practice prior to going to tender will depend upon the

port authority's understanding of market conditions generated by such methods and by their existing relationship with industry participants.

Enticing potential providers to participate in the competitive-tendering process may be achieved by a combination of several initiatives: alerting potential providers through industry consultation prior to calling for tenders; levying the lowest possible application fees; using a straightforward pricing rule; establishing contract lengths which enable capital cost recovery; and specifying minimum service standards without specifying methods of service provision.

Collusion

Collusion between bidders, or competitors in a competitive tender, can lead to distorted tender outcomes. Licences may be inefficiently allocated or the price schedule charged by the winning bidder may still be well above efficient prices.

Collusion generally is considered more likely when there are barriers to entry to an industry (so that the number of suppliers is small and fixed) and tenders occur frequently and for near-substitutes. (There is limited advantage to a bidder to coordinate its bid or join a cartel when there is a single contest — losers have no opportunity to win a contest in future.)

Collusion amongst bidders for harbour towage licences or contracts is unlikely for the principal reason that barriers to entry to the *industry* are low. Thus, there is always the potential for new competitors to enter upcoming tenders and undermine any existing collusive arrangement.

E.6 Principles for tendering

Box E.2 sets out principles developed by the Industry Commission (IC 1996) for application by public sector agencies when conducting tenders for services. Most, if not all, of these principles are equally applicable to port authorities conducting tenders for towage licences.

Box E.2 **Principles for tendering**

In their approach to tendering, agencies should:

a. specify the service in clear, accurate and easy-to-follow terms;

b. consult both the intended clients (or their representatives) and potential providers in preparing the specifications and other aspects of the tender documentation (such as draft Requests For Proposal, Requests For Tender and contracts);

c. adopt performance specifications wherever possible;

d. use industry-wide standard forms of tender documentation (including contracts) and standardised tender processes where possible;

e. select a type of contract appropriate to the characteristics of the service and nature of the market;

f. include an appropriate mix of incentives and penalties when specifying the service contract;

g. consider incorporating non-court dispute resolution procedures into service contracts;

h. identify the risks involved in any contractual arrangement and allocate these risks to the party best able to manage them;

i. use multi-stage tendering whenever feasible and shortlist as quickly as possible;

j. allow adequate time for bid preparation and between tender stages, taking into account the scope and difficulty of information requested from tenderers;

k. seek no more than the information required at each tendering stage;

l. publish tender evaluation schedules as early as possible, and adhere to them;

m. identify transition costs (including redundancy costs) and indicate in the tender documentation how they will be assessed at the tender evaluation phase;

n. specify the selection criteria to be used in the tender evaluation and rank them in order of importance in the tender documentation;

o. keep tenderers informed about the general progress of the tender process;

p. advise unsuccessful bidders in writing as soon as they are eliminated from the evaluation process and debrief them on request; and

q. consider employing, for major projects, an external audit of the costing of any in-house bid, an independent auditor on the evaluation panel and a probity audit of the tendering process overall.

Source: IC (1996, p. 349).

F Links between harbour towage and salvage capability

This appendix further explores the connection between efficient pricing of harbour towage services (whether brought about by direct competition, competitive tendering or price regulation) and the provision of salvage capacity at Australian ports.

F.1 What is salvage?

Salvage is 'the act of attending a ship at risk at sea, in a voluntary capacity, and providing appropriate assistance to preserve the environment and the economic value of the vessel and its cargo' (Adsteam, sub. DR29, p. 3). Salvage may involve a variety of resources including management and technical expertise, skilled labour, tugs and possibly other vessels and specialist equipment.

Salvage may occur in emergency conditions where a ship is in immediate danger at sea, which may include danger to lives or the environment. In such cases, salvage is paid for by the owners of salvaged vessels under one of a number of widely-recognised contracts such as Lloyds Open Form, the Baltic & International Maritime Council (BIMCO) Towhire or BIMCO Towcon, or through the courts under common law.[1] For a salvage provider to qualify for a salvage award: the service must be provided to maritime property; the service must be voluntary; the maritime property must be in real danger; and the operation must be successful (Lopez 1992, p. 519).

Salvage under non-emergency conditions, such as towing a damaged ship to a port for repairs, is often conducted under contract and would not qualify for a salvage award under Lloyds Open Form. In such cases, ship-owners contract with salvors in advance, often through a competitive tender. For example, the Royal Navy

[1] The principal contract used for salvage is Lloyds Open Form. Under this contract, returns to the salvor are determined by an independent arbiter and are dependent on successful salvage outcomes. Factors taken into account in determining remuneration include liability and other risks taken by the salvor, the availability and use of vessels or other equipment intended for salvage, and the state of readiness and efficiency of the salvor's equipment.

contracted for three salvage tugs (from different owners and three different countries) to tow the grounded vessel *HMS Nottingham* from Lord Howe Island in August 2002 (LLDCN 2002).

In Australia, the principal provider of salvage services is United Salvage, wholly-owned by Adsteam Marine Limited (Adsteam). United Salvage has access to 14 front-line salvage-capable tugs in the Adsteam fleet, stationed at strategic locations around Australia and the South Pacific.[2] In addition, some other operators, including overseas operators, participate from time to time.

F.2 Provision of salvage and harbour towage

There appear to be economies of scope in the provision of harbour towage services and salvage services. Tugs designed and equipped for salvage are also fully functional as harbour towage tugs, and 'earn their keep' by supplying harbour towage services (Adsteam, sub. DR29, p. 8). Therefore, costs of salvage — and harbour towage — can be reduced by providing both harbour towage and salvage services with the same vessels. Any harbour towage operator with a large enough fleet should be able to take advantage of these economies of scope to provide salvage.

Given the small number of salvage jobs compared to harbour towage jobs in most ports, tugs are predominantly used for harbour towage. For example, the tug Wambiri in the Port of Fremantle 'carried out thousands of harbour towage jobs in the port area. Its primary purpose is clearly as a harbour tug, and it is used only on rare occasions for salvage jobs' (Fremantle Port Authority, sub. DR35, p. 2). In other words, the size of the salvage market suggests that towage will be the core business.

The costs of providing salvage are the incremental costs of providing salvage capability (more powerful tugs and any increased operating costs of using them as harbour tugs, specialist salvage equipment and any extra costs of training tug crews to undertake salvage work) and the costs of withdrawing a tug from its harbour towage duties. This latter cost may be borne by the towage operator in the form of revenue forgone from towage jobs (though this is unlikely given that usually there is only one towage provider in a port) or in costs incurred in providing adequate 'back-up' capacity in a port.

[2] United Salvage's salvage tugs are currently located in Townsville, Gladstone, Brisbane, Sydney/Port Botany, Eden, Melbourne, Adelaide, Whyalla, Fremantle and Papua New Guinea. An extra vessel is to be located in Fiji (Adsteam, sub. DR29, appendix 2; Adsteam, trans., p. 164).

Alternatively, in those ports where towage providers are not required to meet a specified level of service, it is possible that towage users bear the costs of the salvage tug being unavailable for harbour towage work in the form of delays or inconvenience.

Market power in salvage services is discussed in chapter 6. There appears to be little opportunity for misuse of market power in salvage, as competition for salvage contracts can be intense (AAPMA, sub. DR44, p. 9) and often includes overseas competitors (as recently demonstrated in the *HMS Nottingham* contract). Furthermore, remuneration for emergency salvage work, for which competition may be more limited, is determined independently by Lloyds Open Form or other such contract or through the courts.

There seems to be no Australia-wide natural monopoly in salvage. Although land-based salvage-equipment stores and operational and technical support systems may be most efficiently provided by a single provider, these costs are a small proportion of total salvage costs. Moreover, salvage tugs can be provided separately from salvage expertise, which often is supplied by specialist consultants. This again has been demonstrated in the case of the *HMS Nottingham*, where salvage experts were flown from the United Kingdom to direct the towing operation.

F.3 Do harbour towage users subsidise salvage?

Adsteam submitted that 'Commonwealth and State Regulators, Port Authorities and harbour users enjoy an emergency/salvage response capability at no cost' — that is, salvage is paid for by the owner of the salvaged vessel (sub. DR29, p. 8). This implies that salvage is either a profitable activity for United Salvage or that the service is provided at a loss.

Dale Cole & Associates observed that Howard Smith's towage business (the forerunner to United Salvage) was established with the 'recognition that marine salvage and emergency response were legitimate commercial growth opportunities' (sub. DR33, p. 4). However, Adsteam noted 'it is the shareholder base of Adsteam and previously Howard Smith that subsidised these vessels when required' (sub. DR43, p. 9).

Some participants claim that Adsteam has bought or built large tugs with ocean-going salvage capabilities that exceed harbour towage needs. They suggest that these high capital costs result in higher towage rates; that is, harbour towage users cross-subsidise salvage operations. AAPMA, for example, raised concerns about 'the manner in which harbour towage customers are essentially charged for features

that are not demanded and not required for the 'normal' provision of harbour towage services' (sub. 4, p. 4).

It would be an unusual approach for a profit-maximising firm to provide services that reduced its profit. In other words, a company is unlikely to provide salvage if it expected to make losses from doing so. In the same way, a firm would not be expected to cross-subsidise salvage from harbour towage activities — even if returns from towage were high because of barriers to entry in towage, it would not be commercially sensible to dissipate these returns by engaging in a loss-making activity.[3]

Moreover, a firm, even with some degree of market power in harbour towage, would not be expected to invest in salvage capacity that increased the cost base of its harbour towage operations unless the salvage investment was expected to make positive returns, as the higher harbour towage costs would make the firm vulnerable to competition for its harbour towage market.

However, salvage may be indirectly subsidised by towage users if the salvage operator does not bear the full cost of diverting tugs from port duties. This could occur if the operator is able to shift onto towage users the cost of delays in the provision of harbour towage services caused by unavailable salvage tugs. Such concerns have been raised by participants (for example, Fremantle Port Authority, sub. DR35, p. 2). Nevertheless, a firm that caused delays and inconvenience to towage users by continually withdrawing tugs from a port to undertake salvage may be expected to be more vulnerable to competition from new entrants.

F.4 Competitive tendering for harbour towage and the provision of salvage

Adsteam and several other participants argued that giving ports discretion to issue exclusive towage licences could undermine the coverage and effectiveness of national salvage arrangements. They suggested that ports may adopt licensing regimes without regard to wider economic and community needs, leading to less than optimal provision of salvage or to pressure being placed on government to provide funds for adequate capacity (Adsteam, sub. DR29; AIMPE, sub. DR32; ACCC, sub. 21).

3 It is possible, however, that under a system of price notification a firm would have an incentive (notionally) to allocate costs incurred in an unregulated activity to the regulated activity in an effort to secure approval for price increases in the regulated activity.

Adsteam argued that the provision of an effective salvage capability is dependent on maintaining the ability to justify the construction and positioning of salvage-capable tugs in key strategic 'chock point' locations (sub. DR29, p. 14). Adsteam expressed concern that an operator with an exclusive towage licence in a salvage-strategic port could not be relied upon to provide appropriate salvage capacity.

The critical issue is whether salvage is a profitable activity. If so, any operator with an exclusive towage licence could be expected to face similar incentives to supply salvage services as currently faced by Adsteam. That is, if it is currently profitable to provide salvage by utilising idle tug capacity in a port, a new operator would also find it profitable to provide salvage. Recent experience suggests that new operators would be willing to provide salvage in some ports where it is currently provided. For example, in tenders for exclusive harbour towage licences at Gladstone and Fremantle, some (unsuccessful) submissions offered strategies for attending to both maritime emergencies and salvage (Dale Cole & Associates, sub. DR33, p. 3).

F.5 Licensing of harbour towage by port authorities

Licensing of harbour towage by port authorities has the potential to affect the provision of salvage in two ways. *First*, setting minimum service standards for harbour towage (which may include penalties for under-performance) would reduce the ability of salvage operators to cross-subsidise salvage by shifting onto towage users the cost of delays caused by unavailable tugs. Minimum service requirements allow tugs to be used for salvage, provided harbour towage users do not 'pay' through reduced quality of service.

It is in ports' interests to specify minimum requirements for harbour towage services. For example:

> The existing licensing regime at Fremantle/Kwinana is designed to ensure that service standards are maintained to appropriate levels within the port area. Fremantle Ports requires service providers to ensure that there is a back-up tug at times when one of the main tugs may not be available (such as those times when the tugs are operated outside the port area). If this requirement did not exist, then the service provider would be free to compromise harbour towage service standards whenever it becomes profitable to do so (as would be the case with salvage opportunities). It is not unreasonable, therefore, to regulate towage service provision within the port area to ensure that minimum standards are complied with. This can be done effectively with either exclusive or non-exclusive licences. (Fremantle Port Authority, sub. DR35, p. 2)

As noted by the Fremantle Port Authority, however, minimum service standards may be imposed via non-exclusive licence conditions and are not restricted to competitive tendering for an exclusive licence.

If cross-subsidisation of salvage is currently occurring through towage users bearing the costs of compromised service standards, then setting minimum service standards (whether through exclusive or non-exclusive licences) is likely to affect the level of salvage provision. While the Commission is not in a position to make any assessment on this matter, it may be the case that the resulting privately-profitable level of (emergency) salvage capacity is less than the socially-optimal level. (Given the demonstrated availability of tugs from various sources for non-emergency work, it would seem much less likely that there is under-provision of this type of salvage work.) Importantly, however, this does not mean that it would be efficient to persist with any implicit cross-subsidy. The efficient solution would be to identify and assess the extent of any under-provision and then, if necessary, explicitly and transparently fund this, either through industry levies or general funds. Clearly this issue is beyond the scope of this inquiry (the Commission notes that it is being considered in other forums). Nevertheless, it is highly unlikely that the best-available solution is to bury an unquantified cross-subsidy in inefficient harbour towage provision.

Secondly, a licence could restrict salvage provision if the port authority explicitly prohibited tugs leaving the port to attend to salvage jobs and emergencies, despite minimum service levels being met within the port. This could be done either outright, by imposing a prohibitively high fine, or by specifying maximum numbers and/or attributes of tugs allowed to operate in the port.

In practice, it is difficult to see that there would be any advantage for the port (or towage users) in proscribing salvage activities by harbour towage providers under any conditions. (Indeed, to the extent that economies of scope were forfeited, the costs of providing harbour towage services would increase.) According to AAPMA:

> Ports are highly responsive to wider economic and community needs and it is most unlikely than any port would specifically exclude salvage and emergency response requirements from any towage licensing arrangements as this is an essential part of meeting the needs of our stakeholders. (sub. DR44, p. 9)

Shipping Australia Limited also suggested users would take salvage capability and coastal protection into account as an important criterion in a tender for harbour towage (SAL, trans., p. 45).

F.6 Price notification of harbour towage and the provision of salvage

The ACCC also argued that exclusive licensing may result in under-provision of salvage (sub. 21, p. iii). For the reasons outlined above, the Commission does not

consider that there is a conflict between the efficient provision of salvage and harbour towage services. Moreover, the current system of price notification for declared harbour towage services does not appear to make provision for salvage capacity. In response to a proposed increase in towage charges of 17.5 per cent by Howard Smith in the Port of Melbourne in 1999, the ACCC did not object to a weighted average price rise of 10 per cent. In making its decision, the ACCC adjusted the market value of a new ocean-going and salvage tug slightly downwards, because the ACCC believed that it was more expensive than that required to provide harbour towage in the port (ACCC 1999a; ACCC, sub. 21, p. 13).

F.7 Summary

Efficient provision and pricing of harbour towage (whether this is promoted through direct competition, competitive tenders or price regulation) need not affect provision of salvage.

Competitive tendering (for exclusive or non-exclusive licences) need not alter the market incentives for provision of salvage, provided that ports do not explicitly proscribe salvage by, for example, prescribing maximum tug requirements in the port. If ports were to introduce licences specifying a minimum standard of harbour towage capacity, additional salvage capacity would continue to be provided in individual ports if it were profitable to do so.

If the optimal level of emergency salvage capacity (and its location) is not privately profitable (under current or alternative arrangements for towage), then intervention may be warranted. But this is an issue beyond the scope of this inquiry and one which warrants investigation regardless of arrangements in place for harbour towage.

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