Response to the Productivity Commission's Position Paper on Harbour Towage

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Contents

1 Introduction

The purpose of this paper is to respond to the recent position paper on harbour towage by the Productivity Commission (PC)[1]. The paper proceeds as follows:

- Section 2 questions the PC's conclusion that where prices for services fell in tenders for an exclusive licence then less than effective competition might have characterised the previous situation of open entry. We note first that the PC itself observes that such price falls may be due to other innocuous factors. We also question whether the observed falls are appropriately measured. However, the central contribution of this section is to suggest that the observed price falls reflect an expropriation of returns to sunk investment in increased productivity. Far from being an indicator of the efficiency of the tender process, these price falls may well be harmful to efficient investment over the longer term. An explanation is advanced as to why the port authority would engage in such expropriation.

- Section 3 reviews the economic literature on franchise bidding to discuss other likely costs of exclusive licensing. These costs are incurred independently of the expropriation costs discussed in Section 5.

- Section 4 concludes that there is little to fix in this market and exclusive licensing is unlikely to improve upon the existing situation. Indeed, the costs of such an approach could be high both in terms of long run investment and textbook costs of exclusive licensing.

In a range of contexts, the PC has recently argued that where there is a risk of regulation discouraging efficient investment, then that risk needs to be given substantial weight in consideration of appropriate policies. We believe that the analysis we have set out highlights just how serious these risks to efficient investment are when ports, exercising their regulatory powers, enforce a policy of exclusive licensing. We believe that the PC needs to recognise these risks and in line with sound economic analysis, strongly recommend against the use of exclusive licensing in the services being examined in this review.

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[1] PC 2002, Economic regulation of harbour towage and related service, Position paper, Canberra.

2 Exclusive licensing and regulatory expropriation

A sustained price margin above efficient cost can indicate the presence of entry barriers[2]. The PC argues that the experiences of recent competitive tenders which resulted in price reductions ranging from 5% to 15% in some circumstances may indicate the incumbent's original prices maintained margins over efficient costs[3]. However, this is not necessarily the case. The PC provides some good reasons as to why price falls post-tender may not indicate excess earnings and/or costs.[4] In addition, these observed price differences may need to be adjusted to appropriately reflect quality differentials and volume rebates.

Despite this, it may well be the case that exclusive licences do increase competition and hence lower towage prices. Unfortunately, there are good reasons for suspecting that such an outcome may not lower the total price of the bundle of services users purchase, and hence may not benefit end-users, but would lower efficiency. The exclusive licence process could result in a transfer from towage firms to port authorities. This would generate no allocative efficiency gains, and would impose dynamic efficiency losses if as a result socially valuable but sunk investments were not undertaken by towage firms. Further, even where end-users would benefit from the exclusive licence process, the overall outcome may not be efficient because the allocative benefits of lower prices may be outweighed by the dynamic efficiency losses caused when socially valuable but sunk investments are not undertaken.

Section 2.1 outlines how exclusive licensing can distort the competitive process in harbour towage. Section 2.2 considers how port authorities can, and why port authorities would transfer rents from an incumbent like Adsteam without properly accounting for overall efficiency. The net effect is a likely loss of both allocative and dynamic efficiency. Section 2.3 explains how efficient incentives to invest, and hence dynamic efficiency is undermined.

2.1 Exclusive licences

Over the course of the 1990's, significant efforts were made by Adsteam in securing improvements in working practices in Australian ports, among other areas which yielded

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2 P. xxix.

3 P. xxix, pp. 98 ff.

4 For example: an exclusive contract likely reduces risk, and so the efficient return necessary to prevent redeployment of assets; and the incumbent may have cut prices anyway, something that would be supported by a past history of price cuts—p. 99.

reductions in costs and improvements in quality and reliability to users (the extent of investments by Adsteam of this type are described in Appendix E). However, the resulting benefits were not entirely appropriable by Adsteam[5]. Once Adsteam gained an improved labour practice or contract, other suppliers could seek the same conditions at less cost than Adsteam's own efforts. Moreover, since Adsteam faces effective competition for its markets, by lowering not only its own costs, but also those of its rivals, Adsteam's investments force prices down. As a result, its ability to recover its industrial relation investments is limited and must be spread over large volumes and time.

In the open market, Adsteam can reasonably expect to recover such costs given the minor barriers to entry in towage. This is no different from the manner in which investments in efficiency improvement would be recouped in any workably competitive market. Further, in a market characterised by direct negotiation with users, Adsteam's recovery of its costs may also be helped by goodwill gained from customers because of its industrial relation efforts, and its investment in efficiency improvements generally. This might give it an edge when potential customers have to choose between otherwise indistinguishable offers, allowing Adsteam greater volumes over which recovery can be undertaken. It is even possible that some customers, considering Adsteam's reputation for being able to negotiate productivity improving agreements, are willing to pay a small premium to Adsteam. With Adsteam, future labour disruptions might be less likely or any unforeseen requirements of the client involving labour changes might be more likely to be successfully negotiated.

In contrast, exclusive licensing has two important effects:

1. Exclusive licensing increases the degree of competition for the market, which reduces firms' capacity to recover, albeit small, sunk costs[6]. 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. For example, the port workforce may be transferred over to the entrant, who could readily insist on preserving the conditions that Adsteam had obtained. In any case, increased competition reduces any ability on the part of towage operators to price above cost

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5 This paper focuses on Adsteam's investments in the industrial relations aspects of changing working practices only because they are well-documented. Other investments, for example, Adsteam's investments in training generally and commissioned research on how to improve towage practices, are also relevant.

6 Such investments were made on the basis of the existing levels of competition.

and hence lowers firms' capacity to recover sunk investments, including what were clearly efficient investments in industrial relations. This undermines incentives to make such efficient investments and hence dynamic efficiency (as outlined in Section2.3). It also may induce the loss of expertise Adsteam has built up in industrial relations, as it no longer can be effectively leveraged.

2. Exclusive licensing drives a wedge between shipping operators and the harbour towage supplier. Port authorities rather than customers choose towage suppliers. Thus the actual user of the towage services cannot directly indicate its demand. Bids instead are made to the port authority. This leads to some distortion of efficient choice for two reasons. First, the port authority cannot properly know, hence act in, ***each*** shipping operator's individual interest (this problem is discussed in detail in Section 3.1.1 below). Secondly, and perhaps worse, for reasons discussed in the next section (2.2), 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, and their second priority is to be ***perceived*** as delivering efficient prices. Given the opportunity, this may lead them to cut prices of complementary services, even where this leads to long term efficiency losses. Further, as a result of the increased competition outlined in the first point, exclusive licensing increases the port authorities' power to behave in these ways.

2.2 The port authority 'conflict of interest'

Port authorities have an incentive, and indeed a commercial obligation, to engage in behaviour which improves their financial returns without increasing their own prices. All port authorities are essentially commercialised entities (whether they have been corporatised or are privately owned) with obligations to deliver returns to their shareholders, users and other stakeholders. At the same time, all port authorities are effectively price regulated. Privatised ports such as Hastings and Geelong in Victoria are subject to explicit regulation. Publicly owned ports are subject to informal oversight as their pricing is publicly disclosed and their owners are subjected to political pressure to control charges.

Port authorities have extensive regulatory powers that (much like other regulators) they can use to a variety of ends. Especially through the exclusive licensing process, the authorities are well-placed to obtain cost reductions from towage operators, thereby keeping customers and regulators happy. This may involve coercing towage operators into passing on gains on

sunk investments to the port authority itself. By so doing the port authority maintains the good graces of its shareholders and other stakeholders[7]. Such behaviour can take three forms:

- cost-shifting;
- increasing charges to other suppliers of complementary services using port services;
- translating recurrent income to capital payments.

While the utility of the last two strategies for increasing financial returns to the port authority is self-evident, the cost-shifting strategy is perhaps the most easily concealed and deserves more attention.

What matters to shipping operators, in deciding whether to frequent a port, is the total price of port and port-related services and not the port authority's prices for its services. By pressing down prices of complementary services the port authority can engage in a variety of forms of cost shifting which may be concealed from external regulators and other observers because they are not well-informed, but observe that overall prices do not rise or even fall. The port authority can manage this by:

- holding fixed the final price to end-users and increasing its own profits (either by maintaining its own prices above cost or allowing them to become above costs through concealed cost reductions), or
- reducing prices to end-users while not reducing its own prices and hence profits (as in the previous dot point), or
- holding overall prices fixed or reducing these while pursuing a "quiet life" and so avoiding undertaking what would otherwise be efficient cost reductions in its own operations (its own prices cover inefficiently incurred costs), or
- some combination of these.

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[7] The PC itself expresses some reservations about the ability of port authorities to act in the best interests of port users:

> "Though there is a sizeable pool of potential towage providers, as evidenced by the number of bidders for the Bunbury and Fremantle exclusive licences, the ability of, and incentive for, government-owned port authorities to act in the interests of users are less clear."(p. xxxii)

This conflict of interest problem is also discussed in pp. 28-30 of Charles River Associates 2002, 'Exclusive licensing of harbour towage services in Australian ports: An analysis of the potential costs'. An additional problem with non-privatised ports is that they face conflicting and unclear objectives. As a result, port users' interests are even far less likely to receive proper weight.

As a result, the port authority can have a direct stake in reducing the prices to end-users of other complementary services even if this results in prices below efficient levels for those services. While it may be difficult for the port authority to press prices of complementary services below on-going costs, it is much easier to lower prices to levels that do not recover sunk costs. This discourages investments in further innovation in towage (as discussed in the next section).

Organising a tender for an exclusive licence dovetails well with the port authorities' interests. This is because exclusive licences:

- reduce the market power of towage providers (as discussed in Section2.1) and so makes them easier to hold-up or in other ways exploit; and
- can be used to secure benefits to the port authorities' bottom line in the form of non-transparent and far from cost reflective charges to towage providers, including but not restricted to tendering fees[8].

Transfers from shipping operators to port authorities by any of these means have obvious implications for shipping operators' profits. They also do not result in any benefits to customers or allocative efficiency to the extent that the bundled price of all services does not fall. This generates (in-period) allocative efficiency losses:

- if total prices exceed costs and,
- even if the bundled price just covers costs, because the proportion of services used in the bundle are likely to be inefficient (too little port authority services are purchased compared with other services).

Moreover, even if there are no allocative efficiency losses—for example, because the total price of the bundle of services purchased by end-users reflects costs and all services are bought in fixed proportions—there are likely to be dynamic efficiency losses. These arise if the sunk costs of some suppliers, such as towage operators, are not covered because the port authority can engage in expropriation through cost-shifting. It is to these we now turn.

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[8] That there may be excessive costs involved in the tendering process adds to the case against exclusive licensing for the reasons discussed in Section 3.

2.3 The loss of previously made efficient investments

As the previous subsection has demonstrated, port authorities may have an interest in cutting towage prices to expropriate the sunk investments made by towage providers. The result is inefficient incentives to invest.

Outlays of the kind made by Adsteam in improving productivity and service quality would never be made unless the firm has a reasonable expectation of recoupment. But as argued in the previous sections, exclusive licences reduce shipping operators' capacity to recover costs. In effect, the impact of the towage price fall, and of the tender process more widely, is to signal to incumbents that outlays made in improving or expanding the market are capable of being expropriated. The dangers of such 'hold-up' of the fruits of investment are clearly documented in the economic literature[9]. Indeed, hold-up costs are so significant a factor that they may account for various patterns of industrial organisation in the economy[10].

Adsteam, like any other firm, undertakes investments when they are expected to turn a profit. Investments in labour relations can be especially tricky to recover for a first mover, since, to a significant degree, the resultant contracts are easier for second movers to achieve, and once achieved competition drives prices down. However, Adsteam was probably better placed than any towage firm in Australia to undertake such investments even as a first mover. Adsteam expected, in the unlicensed environment in which it operated, to be able to recover its costs. With minor barriers to entry it could make small profits on each sale. Having a large footprint and long-term market commitment it has had a broad enough base over which these small profits would eventually allow cost recoupment, both for the investments made to date and for future investments in securing productivity improvement.

This does not imply any substantial market power on Adsteam's part. Just as in any effectively competitive market, cost reduction or product improvement is facilitated by the potential of short term profits. Until rivals manage to catch up, the innovator gains short run rents. It is exactly the prospect of these "rents" that spurs innovation. Similarly, sunk costs are made recoverable by frictions in the market that prevent every jot of profit from being

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9 The problem of hold-up occurs when one party supplies an asset for another party which may only be used by that other party. Once the asset is supplied, the using party can hold-up the supplying party, forcing very poor contractual terms on it, since the supplying party has little choice but to either accept the terms or abandon its investment.

10 See for instance Ramseyer, J.M. and Y. Miwa 2000, 'Rethinking Relationship-Specific Investments: Subcontracting in the Japanese Automobile Industry', Harvard Law and Economics Discussion Paper No. 282; Klein, B. 1996, 'Why Hold-Ups Occur: The Self-Enforcing Range of Contractual Relationships', *Economic Inquiry* 34(3) 444-63.

instantly competed away. It is precisely these frictions which ensure that workably competitive markets – unlike markets that are perfectly competitive – can induce and reward investment in innovation, and hence are generally desirable.

Take a hypothetical example. Assume the marginal cost of providing a service is $5, which also happens to be the price of the service to the consumer. A firm that provides the service realises that by engaging in a costly innovation it can reduce the marginal cost to $3. It estimates that in so doing it will be profit-maximising to drop price to $4 for as long as it takes for its competition to catch up to it and its short run return from the $4 price will allow it to recover its investment costs. As a consequence it reduces its price to $4. Thus it pockets $1 of the cost reduction while the consumer enjoys the remaining $1 of the cost reduction. Obviously consumers would appear to be even better off price fell by the entire $2 of the cost reduction, but if the firm saw no prospect of being able to claim the $1 it would not have engaged in the innovation in the first place. The price and marginal cost would subsequently have remained the same and no one would have been better off. In other words, it is socially desirable for a firm that invests in innovation to enjoy innovation rents (which, by the willingness of consumers to pay for these, are justified by demand) to the extent necessary to motivate its original investment. It would be socially undesirable if these innovation rents were expropriated by another party, whether the final consumer, a port authority or another competitor.

The example above highlights the great danger of exclusive licensing—namely, the long term effect is to discourage investments of the sort that Adsteam has engaged in previously (see Appendix E). This would be to the ultimate detriment of consumers. For firms to efficiently recover such investments the lower prices that come from their investments in reducing costs should be allowed to 'sink in' over time rather than passed on at once since the margin between the two is what gives them the return from such investment.

Additionally, it is important to note that the social gain from securing a productivity improvement will, under almost any condition, greatly outweigh the cost associated with any allocative inefficiency due to its pricing. The increase in social surplus that arises from shifting down the entire cost curve must, as a matter of economics, be large relative to the purely marginal loss due to prices that are temporarily above cost. As a result, the risk that port authorities will use their regulatory powers to secure short term gains for themselves, but with adverse consequences for efficiency going forward, needs to be given great weight in any public policy assessment.

2.4 Summary and conclusions

The PC points to price reductions that were achieved after bidding for exclusive licences as an argument in favour of exclusive licensing. 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.

First, towage providers such as Adsteam frequently make costly investments in quality and innovation (such as reform of work practices) which produce benefits for the industry that are not fully appropriable.

Secondly, port authorities have extensive regulatory powers that – as is the case for other regulators – they can use to ends that may be very poorly aligned with economic efficiency. More specifically, port authorities have an interest in reducing the competitive and other pressures they face. In administering exclusive licences they can achieve this by:

- extracting revenues from complementary service providers through hidden fees and charges (such as licensing fees that are not cost reflective), something made more easy by the frequently non-transparent nature of such licences; and
- forcing reductions in the prices of services complementary to their own because this deflects regulatory attention and market pressures away from their own cost-effectiveness.

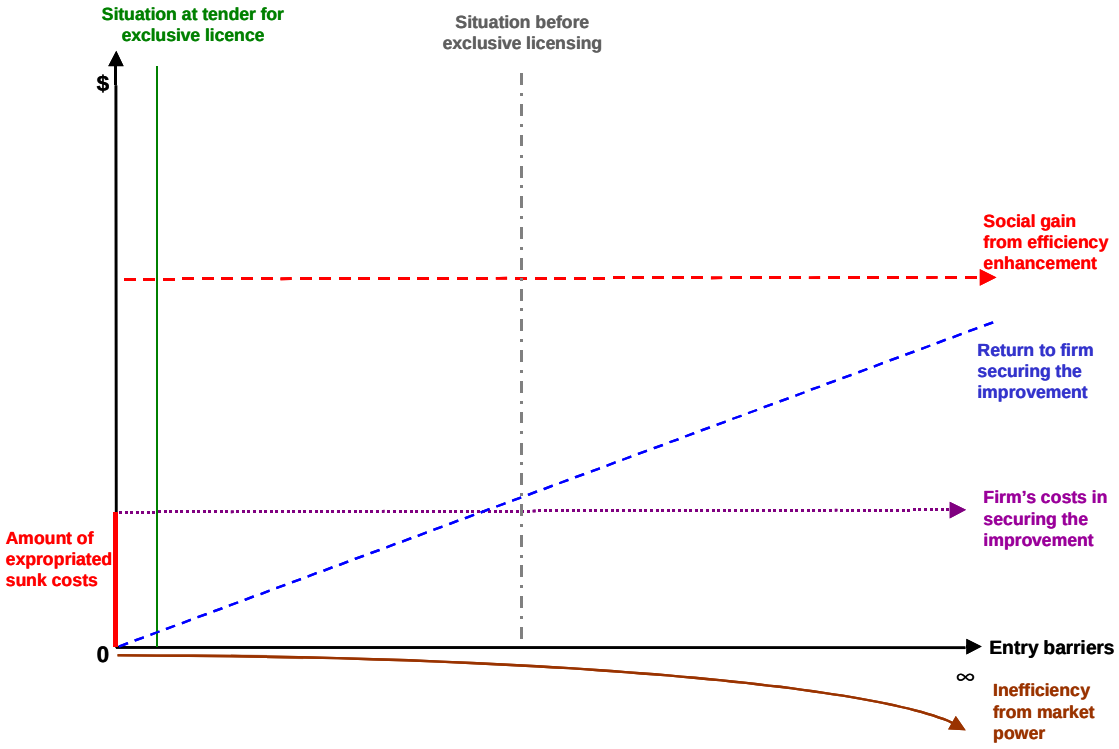
The combined effects of these are to substantially reduce the incentives for towage providers to make investments in service improvement of the sort that Adsteam has made in the past. This will result in a detriment to users in the long run as further opportunities for cost reduction, service improvement and general innovation are no longer pursued.

The overall analysis is illustrated in Figure 1. Under the open market process the firm invests in labour process improvements delivering substantial benefits to society and sufficient returns to itself that its investment is recovered. There are also some dead weight losses due

to in-period prices being above marginal cost, but these must be incurred so the firm can recoup its investment. The net effect is beneficial[11].

[11] The welfare gain can be seen by looking along the vertical line marked "Situation before exclusive licensing" and is equal to the distance between the horizontal red line and horizontal purple line. The firm gains the distance between the rising blue and the horizontal purple line and the consumer the distance between the horizontal red and the rising blue line. As compared with a theoretical, but likely unachievable ideal, welfare could be further improved by the distance between the horizontal axis and the curved brown line.

Figure 1


Situation at tender for exclusive licence
Situation before exclusive licensing
$
Social gain from efficiency enhancement
Return to firm securing the improvement
Firm's costs in securing the improvement
Amount of expropriated sunk costs
0
Entry barriers
∞
Inefficiency from market power

3 The costs and benefits of exclusive licensing: lessons from the economic literature

The PC has contended that competitive tendering may provide scope for promoting more efficient outcomes. The relevant comparison then is between open market entry with or without non-exclusive licensing and periodic competitive bidding through exclusive licensing[12]. The PC's argument seems to be that:

- because there appears to be little scope for generating lasting competition within a port, competitive pressures have to come from competition for the market and competitive tendering may increase such competition; and
- open entry has costs due to instabilities that make the competitive process less than optimal (though the extent of these costs is not at all obvious).

In essence, it's the PC's evaluation seems to be that **if** periodic competitive bidding could be implemented properly, one would get the benefits of competition for the market, but without the (unquantified) transaction costs associated with open entry.

This section, which reinforces the arguments against exclusive licensing made in Section 5, argues that the PC has over-estimated the costs of open entry while underestimating the practical difficulties of exclusive licensing. Moreover, the costs discussed here are applicable to any exclusive licensing process even if, contrary to the discussion in Section 5, port authorities face incentives to seek long-term economic efficiency.

3.1 General arguments for and against exclusive licensing

In the case of harbour towage, the main justification for granting exclusive licenses by auction (also known as 'franchise bidding') is that it may increase "competition **for** the market" relative to the status quo[13]. The terms competition "for" and "in" the market have a long history in economics. The distinction was first drawn by the Victorian social reformer,

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12 pp. xxx-xxxiv.

13 Increased competition under exclusive licensing perhaps occurs because it raises the value of successful entry. The franchise creates certainty about the winner's market position, as compared with the status quo, thereby increasing the value of the prize. This will attract more rigorous competition for the market.

Edwin Chadwick (1800-1890) in an article published in 1859, who argued that in a wide range of activities, the failure of markets to work effectively could be cured through centrally administered competitions "for the field".[14] Rival firms, in bidding to secure the market as a whole, would set prices at cost, while regulation could be used to ensure adequate service quality. Chadwick's views were largely forgotten until an influential article by Demsetz,[15] which argued that franchise bidding for natural monopolies, as originally proposed by Chadwick, could make direct regulation unnecessary, while being more effective than known means of regulation in protecting the consumer interest.

Williamson and Goldberg subsequently argued that such an approach was problematic, most particularly because of the difficulty:

- in writing the franchise contract in a way that adequately accounts for all possible future circumstances; and
- of monitoring contract performance.

Williamson illustrated this by the difficult experience of franchise bidding for CATV in Oakland, California. While subsequent empirical work by Zupan suggests that the Oakland experience was not typical of franchising bidding for cable TV, and that the system has worked quite well, Williamson's basic point remains[16].

Demsetz himself recognised the complications involved in franchise bidding which requires the determination of a contract between the licensing agency and the franchisee. "Because of

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14 E. Chadwick, 1859, 'Results of Different Principles of Legislation in Europe: Of Competition for the Field as Compared with Competition within the Field of Service' *Journal of the Royal Statistical Society*, 22, 381.

15 H. Demsetz, 1968, 'Why Regulate Utilities?' 11 *Journal of Law & Economics* 55.

16 Per Schmalensee R, 1979, *The Control of Natural Monopolies*, Lexington Books:
"Franchise bidding is hardly a breakthrough in natural monopoly technology.... A number of experiments with franchise bidding have been conducted, and virtually no promising results have been obtained. Williamson's study of the failure of franchise bidding in cable television is particularly to the point here."
Vickers J and Yarrow G, 1985, *Privatization and the Natural Monopolies*, London: Public Policy Centre, 1985, at p. 30 argue that:
"The Chadwick-Demsetz proposal is an ingenious scheme if the contract in question is simple (as with taxi licence plates). There are no doubt some economic activities where franchising would be an attractive scheme. But we are concerned with industries [i.e. natural monopolies] in which the difficulties of contract specification and administration would be immense."
and later that:
"In practice, franchising has been successful in a number of fields.... However, there are many industries where franchising cannot work, at any rate in this simple form, and the industries described later in this book (energy, telecommunications, water, etc.) provide leading examples." Vickers J and Yarrow G, 1988, *Privatization: An Economic Analysis*, MIT Press, at p. 111.

the difficulty of devising suitable contracts"[17], the process can yield outcomes that fall short of the competitive ideal. Particular problems attach to the monitoring and enforcement of efficient behaviour during the period of the exclusivity, as market forces cannot act as a corrective mechanism in this period[18]. Also, if an incumbent operator gained advantages from incumbency in seeking contract renewal, then the strong competition that might have surrounded the initial grant would progressively weaken. As it did, the outcome under franchise bidding would approach that yielded by an unregulated monopoly[19].

The lessons from the literature summarised here must be drawn carefully because most of the literature involves an evaluation of the merits of franchise bidding as an alternative to regulating the terms and conditions offered by a natural monopoly provider that faces little or no competitive pressures. In contrast, harbour towage is exposed to competition. The choice, it needs to be emphasized, is not natural monopoly regulation (which is itself costly because of the informational and administrative demands on the regulator) versus franchise bidding. Rather it is open competitive entry—which implies a continuous competitive tender from moment to moment—versus franchise bidding. Open competition has little or no regulatory cost (with the exception of price monitoring in some declared ports) though it may incur costs of competition (to the extent they exist)[20].

With this caveat in mind, the costs and complications associated with the franchise bidding option as discussed in the literature are summarised and discussed in greater detail below.

3.1.1 Contractual design and enforcement

Two of the three main potential problems with franchise bidding or exclusive licensing identified by Williamson (1976) are essentially complications and problems relating to design of the optimal licensing contract because:

1) The initial award criteria are apt to be artificial or obscure;

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17 H. Demsetz, 'On the Regulation of Industry: A Reply' (1971) 79 *Journal of Political Economy* 356, 357.

18 For example, where right to operate an essential facility – that is, a facility which provides services essential to competition in a dependent market – is being auctioned the winning firm may be able to claim monopoly rents in that dependent market, regardless of the price constraint: for example, if by discriminating among firms in that dependent market in terms of the quality of service it provides, it can favour one such firm over others, and share in the rents from the resulting distortion of downstream competition. Preventing these rent-sharing arrangements from occurring requires effective monitoring of the comparative service quality provided to a range of entities – which may be difficult.

19 See generally O. Williamson, *The Economic Institutions of Capitalism*, Free Press, New York, 1985.

20 Though these are not costs incurred by a regulator, they are costs to society in the form of wasted resources.

2) Execution problems can develop in the price-cost relationship, in other performance aspects, and in political respects.

The problem of the 'award criterion' arises where awarding the contract depends on non-price as well as price-based criteria. In other words, where there are quality dimensions that may be difficult to capture or measure[21] and over which end-users may have differences in preferences[22]. Further specification difficulties arise where price itself is not a single parameter but can vary over different parameters (for example, volume rebates).

Williamson also discusses execution problems which arise with uncertainty, for example, about technology, demand, supply and inflation. If the exclusive licensing conditions lock the bidder into a specific set of arrangements that retrospectively are found not to be appropriate for the buyer's purposes then there is a corresponding loss of efficiency. Similarly, bidders may be unable to optimise their own responses to a changing environment[23].

How significant are these problems when compared with what would happen under open entry?

Under open entry, users have the ability to write contracts specific to their own situation. Some users' contracts may be "one-offs", others may cover relatively short periods, while others may be for long periods. Users have different tastes for timeliness, flexibility, insurance, safety, security and a range of other parameters. It is highly unlikely that bids for a service accounting for all possible bundles of parameters desired by different users could properly be formulated, let alone compared.

Quality as well as price is important in harbour towage, for example, because of the need for reliability and salvage capability. As a result, the bidding process necessarily is multidimensional in price/quality combinations. Thus another part of the award criterion problem that is associated with franchise bidding is that it may foreclose the ability of some users to choose a higher price/higher quality option over a lower price/lower quality one[24].

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21 See also pp. 20-21 of Charles River Associates 2002, 'Exclusive licensing of harbour towage services in Australian ports: An analysis of the potential costs' which emphasises the administrative cost burden of contract specification.

22 Users may, in other words, have preferences that in an open market would be expressed in a menu of horizontally and vertically differentiated choices.

23 Discussed at p.26 of Charles River Associates 2002, 'Exclusive licensing of harbour towage services in Australian ports: An analysis of the potential costs'.

24 See Viscusi, W., J Vernon and J Harrington 1998, *Economics of regulation and antitrust*, 2nd edition, MIT Press at pp. 421-422.

It is not clear quite what incentives port authorities face in determining the price/quality combination they contract for in exclusive license situations. It may well be that the authorities operate to some kind of median voter model, where 'votes' are perhaps weighted by parameters such as frequency and scale of use. Analytically, under quite general conditions, such a median voter model will yield outcomes that are inefficient when compared to an outcome in which end-users can 'vote with their dollars.' Mere reliance on consultative mechanisms, no matter how well developed, will not and cannot efficiently resolve the quality selection problem that open markets deal with through decentralised choice.

Moving from contract specification, the 'execution problem' arises because during the period of the exclusivity, market forces can no longer act as a corrective mechanism. The exclusive license thus creates a barrier to potential entry that otherwise would exert competitive pressure on incumbents. This creates a very strong requirement on the regulator to carefully monitor the winning tenderer's conduct and ensure that the terms of the contract are properly enforced. Otherwise, outcomes are likely to be worse than they would have been under open entry. This requires specifying and monitoring quality—to the degree this is even possible. Monitoring costs and the cost of quality slippage hidden from the port authority are unlikely to be negligible and are ongoing[25]. It is estimated that the port authority may need to conduct formal operational audits every 6 to 12 months, as well as set up a formal complaints and a dispute resolution process. The total resource cost of a single harbour towage bid was estimated to be around $1 million[26]. In contrast, under open entry market pressures play a substantial role in policing contract execution including the delivery of quality.

3.1.2 Effects on dynamic efficiency

Account must also be taken of the likely reduction in incentives to implement innovations over the life of the exclusive contract. Under exclusive licences, firms have little incentive to implement costly innovations within the franchise period in so far as the value of those innovations spans successive franchise periods and cannot be fully recouped in the event of

[25] Charles River Associates, 2002, 'Exclusive licensing of harbour towage services in Australian ports: An analysis of the potential costs' pp. 22-23.

[26] The estimate includes the costs to the port authority, five bidders and their advisers in bidding and quality assurance and contract management costs see ACIL 2002, 'Exclusive licensing of port towage services'.

exit[27]. Even if the level of innovation under exclusive licensing reaches that of open entry, and this seems unlikely, the timing of the innovation may be 'bunched up' reducing social welfare. In contrast, the incentives to innovate under open entry are continuous. As a result, the 'locking out' effect of an exclusive licence distorts in a suboptimal manner incentives to reduce costs, improve quality and introduce service innovations at least in the period over which the franchise is granted. This is quite different from possible reductions in quality created by an inability to fully specify and monitor the franchisee's performance ***under existing technology,*** which was the subject of the previous section. Instead, the problem is the difficulty in specifying how the constant threat of entry, blocked by the exclusive license, would force the incumbent to constantly seek and implement new technologies.

These dynamic efficiency considerations may be even more significant in the case of investments in labour productivity leading to more efficient work practices, such as those that Adsteam has previously engaged in (see Appendix E), and which clearly need to renewed and extended in future. This is because an exclusive licence grants trade unions additional power in contract negotiations. Consider the incentives facing a towage provider tendering for and winning a five year licence (the typical length of an exclusive licence is from five to seven years). On the one hand, the tenderer faces a maximum length of an enterprise bargaining agreement (EBA) set at 3 years and on the other hand, a need to demonstrate its reliability throughout the life of the tendering process to win future bids. This raises the prospect of union hold-up when the EBA in place expires midway through the exclusive licence. Since port authorities have commonly been able to impose liquidated damages provisions for towage operators' service breaches, in embarking on labour reform, the towage provider must take two substantial expected costs into account:

- The costs of a strike including liquidated damages for breaching some reliable service term in the tender and
- The costs of possibly losing the next tender round because of the unreliability of service exhibited during the strike.

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[27] This argument is also made at p. 31 of Charles River Associates 2002, "Exclusive licensing of harbour towage services in Australian ports: An analysis of the potential costs':

> 'The standard of service required, the conditions under which the services will be performed and the specific KPIs [key performance indicators] that must be complied with under the exclusive licence contract impose a great degree of rigidity into an otherwise flexible market. This may have the effect of reducing the level of innovation as the incumbent's sole incentive is to achieve the designated KPIs at least cost to maximise its profit under the contract.'

Since new entrants also face similar difficulties, and hence must take these into account in bidding for any exclusive licence, the effect is to make it more likely that firms will accede to union demands, hence raising the price of bids in any tender round.

Certainly, the prospect of negotiating productivity enhancing contract changes would seem considerably less likely than in the open entry environment. There Adsteam undertook substantial reform (see Appendix E) despite reservations from its own customers who, though agreeing with the need for such reforms, were reluctant to bear any short-term transition costs involved. Adsteam was confident that if any of its clients turned away from it because of short term disruption, they could be won back immediately once the long lasting benefits were forthcoming. It also was credibly threatened by rivals and could credibly threaten its workforce with the prospect of job loss due to more efficient entry in the near future. In contrast, under an exclusive licence the trade union's power is greatly strengthened. Adsteam's work force is ***not threatened*** in the short term ***by entry of another towage firm***. If Adsteam is to continue operations it must either acquiesce or replace its striking workers. Further, Adsteam cannot effectively threaten its workers with the loss of the licence at the next tender, for at least two reasons:

- First, entrants would likely feel unable to impose tough conditions in labour contracts fearing reprisals when their own EBA expires; and

- secondly, even if they do, Adsteam's employees have plenty of time to arrange for their futures, perhaps even by switching from Adsteam to a new entrant (even if under Adsteam's preferred terms, though for reasons just given, the entrant may be interested in being more generous than that).

With the bargaining position of the trade unions strengthened by the exclusive licence, any fight Adsteam takes on mid-way through an exclusive licence is likely to be particularly painful. As a result, cost recovery over the course of the exclusive licence, and hence ever, becomes implausible. If that is so, Adsteam would be better off acquiescing to its union's demands. Even if it imposes its terms on the trade union, or replaces its labour force, the remaining period of the exclusive licence may not be sufficient to recover the costs incurred and Adsteam will not be able to recover them under the new contract, should it win it. All bids for the new exclusive licence will be based on labour arrangements no worse than those faced by Adsteam, whether Adsteam won or lost its fight. This will lead bidders to press prices down to operating costs regardless of the costs Adsteam previously incurred.

Similarly, under open entry, an entrant might be able to arrange a more efficient set of conditions with workers keen to get new jobs. This not only puts pressure on the incumbent

to produce similar improvements, but means a successful entrant (and its employees) must maintain their edge to prevent themselves from being similarly displaced. However, under the exclusive licence arrangement, the entrant and its potential employees know that any EBA will be up for renewal ***two or more years prior to the expiry of the exclusive licence***. For exactly the reasons already outlined, this greatly weakens the entrant's hand to the benefit of its employees. As a result, pressure for labour reform is not going to come from new entrants.

These effects can seriously compromise reforms that, from the point of view of securing an efficient, internationally competitive waterfront, need to be achieved. The social costs of threatening this reform process must, on any careful assessment, loom large relative to any gains exclusive licensing could bring.

In summary, aside from the 'bunching' effects on innovation which constitutes the least-worst outcome of distortions in incentives to pursue innovation arising from exclusive licensing, the worst case scenario is little or no investment in further work practices reform and possibly other efficiency enhancing activities, arising from disparities between the legally allowed duration of labour market contracts and exclusive licences.

3.1.3 Bidding parity?

A third problem discussed in Williamson's critique of franchise bidding is the possible lack of bidding parity fostered between the incumbent and the entrant at the end of the licensing period. Williamson argues that if there is to be meaningful competition at the contract renewal stage, winners of the original competition should not be placed at a substantial advantage over non-winners. In particular, sunk costs cannot be important. This is especially problematic if there are serious regulatory difficulties in monitoring contract execution.

However, the absence of sunk costs, required for exclusive licensing to work over the long term, would also allow effective competition in harbour towage in the first place. Thus if the proponents of exclusive licensing justify their case in part by allegedly high sunk costs involved in entry, these very same high sunk costs would also weigh against the satisfaction of this condition for exclusive licensing to work well. Finally, if sunk costs are low and the costs of bidding for a monopoly franchise are high, entrants that would have entered under open competition may not even bid at the auction.

3.2 Summary and conclusions

This section considers the practical difficulties associated with the proper design and implementation of an exclusive licensing contract. As harbour towage is exposed to competitive disciplines, the relevant alternative to exclusive licensing is not some costly form of natural monopoly regulation (which is the context in which the option of exclusive licensing is usually considered). Rather, it is open competition which involves little regulatory cost, except price monitoring at some ports and possibly some costs of competition (though again it is unlikely that these are significant).

Against this, there are substantial costs inherent in exclusive licensing that cannot be avoided **even if** the port authority 'conflict of interest' problem could be resolved in some way. These are[28]:

- Costs associated with contractual design and enforcement;
- Adverse effects on dynamic efficiency which at best would lead to delays in the timing of investments in innovation, meaning delayed benefits to users;
- Bidding parity problems due to advantages gained by incumbents; and
- Disparities between the duration of labour market contracts and exclusive licences.

[28] Even ignoring the costs to allocative and dynamic efficiency which have been the focus of discussion in this section, the administrative costs to the regulator are not insubstantial. ACIL 2002, 'Excusive licensing of port towage services' estimates the total resource costs to a port authority, bidders and their advisers in a harbour towage bid involving five bidders as around $1 million (this figures includes quality assurance and contract management costs).

4 Summary and conclusions

There is little disagreement that at least some ports may only be able to support one operator, though one which faces strong exposure to competitive disciplines because of low barriers to entry. Nor is there any disagreement that, at least in the short term, exclusive licensing can encourage more entry and so increase the intensity of competition for the market. What is at issue is whether the expanded entry facilitated by exclusive licensing necessarily promotes efficiency and consumer welfare. There are good reasons to doubt that it will.

First, it is not clear that the existing situation is problematic. The only substantive complaint raised about current market outcomes is the observation that some bid prices under exclusive licensing have been below existing prices. But there are a range of good reasons why this might be the case. The PC acknowledges several of these, and this report highlights another: that the port authorities charged with administering such licences have an interest in increasing hidden fees and charges to towage providers and forcing reductions in the prices of towage services below levels that would recover sunk costs investments in innovation. Exclusive licensing, which expands entry and increases competition, increases the means available to achieve these objectives. This reduces incentives for towage providers to make future investments in innovation and is likely to reduce long run efficiency.

Secondly, even if the port authority conflict of interest could be eliminated, there are other costs inherent to exclusive licensing which cannot be easily avoided—for example, costs associated with contractual design and enforcement, bidding parity problems and distortions in the timing of investments and labour and exclusive licence timing issues.

Taking these costs into account, it is doubtful that there are any real and sustainable benefits to consumers that can come from exclusive licensing. Indeed, any short term price reductions, to the extent that they arise, would likely jeopardise long term cost and ultimately price reductions in harbour towage. The current system of open entry has brought long-term investments (such as reforming work relations) which significantly lowered industry costs, all to the benefit of consumers.

It is important to note that in adopting exclusive licensing, port authorities are generally using powers they have to regulate access. They are, in other words, acting as regulators. Policy analysis cannot start from the premise that the exercise of regulatory powers – be it by port authorities or by any other entity – will reflect incentives consistent with efficiency and

the public interest. Rather, it should start from the premise that regulations, especially when they seek to 'social engineer' the competitive process, need to be justified.

Economic regulation of entry by port authorities, especially when it involves exclusivity, must raise important concerns in this respect. There is simply no reason to assume that it will result in efficiency gains, even when it secures immediate reductions in prices. Rather, the weight of economic analysis would suggest that regulators have strong incentives to expropriate sunk costs, and hence reduce output over the longer term. Additionally, economists have long realised that exclusive licensing is far from being simple or costless, and will often be ineffective in securing durable improvements in outcomes.

As the PC itself has emphasized in recent months, access restrictions and regulations that compromise investment and productivity growth have costs that far exceed any short term gains in allocative efficiency that may flow from immediate price falls. Indeed, the PC's own work on airports, as well as on access issues more generally, has stressed that the costs of reduced investment are not worth bearing for the sake of addressing even clear situations of low-level market power.

In towage, as in the Australian waterfront generally, it is plain that more remains to be done to secure international best practice. It would be costly, from the point of view of the efficiency of Australia's economy as a whole, if the incentives individual ports may have to expropriate the gains from the work done to date were allowed to compromise the reform process going forward.

Given this, the PC should not encourage State Governments to give port authorities the scope to engage in behaviour of this kind. Rather, consistently with the international trend, a clear presumption in favour of open competition needs to be established as the standard for harbour towage. This is not to say that open competition is perfect – it obviously is not. However, it has yielded substantial gains in productivity for ports, shippers and all those who depend on the maritime transport chain. The case for moving away from it has been asserted but, from an economic point of view, remains implausible and unproven.

Appendix A: Volume discounts as a barrier to entry?

The PC concludes in its Position Paper that towage markets in most ports are likely to be able to sustain only one operator and that there may even be cost advantages for a single common operator across some regional groupings[29]. Some ports may be able to sustain more than one operator, most obviously Melbourne where currently there are two operators, but perhaps also others.[30] Nonetheless, we accept for the purpose of argument, that production costs ***in any given harbour*** may be minimised by a single harbour towage operation. The implication for public policy is that active competition for towage ***within*** any harbour may not exist even though any particular harbour, and harbour towage and shipping in general, may be subject to competition from other harbours or modes of transport. Despite this, where there is no competition within a port, competitive pressures are likely continuously faced by harbour towage operators because of competition ***for*** the chance to supply the port. As the PC argues[31]:

> ... 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.

The PC has found that competition for the market in harbour towage is important because entry barriers in general 'while not insignificant, are not large'[32].

The main candidates for entry barriers into the harbour towage are high sunk costs and volume rebates that 'lock in' customers. We agree with the PC's assessment that sunk costs are not large and do not think any additional evidence on this matter needs to be evinced given the material already discussed in the PCs Position Paper. However we wish to devote the rest of this appendix to refuting any possible objections to the PC's conclusion that there are already effective competitive pressures on the basis that the current system of volume discounts serve as a barrier to entry.

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29 p. 74.

30 For example, AMS plans to enter the ports of Sydney, Brisbane and Fremantle over the next 12 to 18 months – see p. 30 of Adsteam's April 2002 submission to the PC.

31 p. 74-75.

32 p. 84.

Volume discounts

Volume rebates are typically a form of third degree price discrimination: all users face the same price schedules, but pay different unit prices because of the choices they make (whether it be volumes purchased or service package purchased). Volume rebates may be necessary for efficient cost recovery in the presence of economies of scale. Loosely, economies of scale imply marginal cost lies below average cost at the firm's level of output[33]. In these circumstances, volume rebates are generally a more efficient way for firms to recover costs than uniform prices. They allow inframarginal costs to be captured through higher inframarginal prices, while marginal prices are set closer to marginal costs, encouraging users to extend their purchases where this is efficient. In contrast, setting the same price regardless of the volume consumed means that, at the margin, price must be more above marginal cost than where volume rebates come into play, as the marginal price, which equals the average price if all prices are the same, must recover all inframarginal costs. Given that marginal costs are likely to be below average costs in towage, volume rebates can be an efficient response to the need for overall cost recovery.

It is sometimes argued that volume rebates, offered by incumbent towage providers, constitute an entry barrier. There are two possibilities here. The first is that volume rebates are due to economies of scale. In that event, the claim amounts to saying that economies of scale constitute a barrier to entry. The second possibility is that volume rebates push prices below cost, that is, they are predatory

Economies of scale are not a barrier to entry

Economies of scale as such are not a barrier to entry. Any firm that enters at sufficient scale can claim such economies and its prices, through volume rebates, could profitably reflect this. Indeed, in an effectively competitive market they necessarily would. Any firm that does not enter at a sufficient scale suffers from being inefficient rather than being disadvantaged by an entry barrier.

While the presence of economies of scale is not in of itself an entry barrier, this does not mean there are no entry barriers. For example, capital market imperfections may create a

[33] Strictly this is only true for the single output case, but the basic idea – that inframarginal costs exceed marginal costs – applies wherever volume allows the sharing of costs.

barrier to entry, making it difficult for small operators to fund entry ***at the efficient scale***. However, in the case at hand some potential entrants are sufficiently large on their own that the ability to enter on a large scale is not likely to be a problem—see the discussion below in the next sub-section. Further, markets have means of overcoming those barriers, such as capital market imperfections, that might prevent small firms from successfully engaging in entry, including:

- the funding of small local companies by outside towage companies (for example, the entry of AMS in Melbourne and of SAAM in Latin America—see Appendix D); and
- support from large local shipping operators (see the examples in Appendix C).

Predation and limit pricing are not plausible in harbour towage

If volume rebates do not recover costs and so are not based on economies of scale, it ***may*** be that they are predatory. While predatory pricing does not seem feasible in the supply of towage (discussed immediately below), predation may be redressed under the Trade Practices Act. To justify additional regulation it must be shown that the TPA is so completely inadequate to this task that the benefits of additional regulation are likely to exceed the costs. As it is, there is no evidence that an ***efficient*** competitor could not match the prices offered by an incumbent.

Putting aside the appropriate regulatory arena in which to deal with predation, predatory pricing strategy cannot be credible in a market without sufficiently large sunk costs for three reasons:

- first, because the entrant can more or less promptly redeploy the assets at issue, the damage the incumbent can cause is limited;
- second, because the incumbent could otherwise be using those assets elsewhere, the opportunity cost of slashing its prices is high;
- third, again because the assets are fungible, any attempt by the incumbent to eventually recoup losses incurred during the predatory phase will be prevented by new entry.

As all of these facts characterise harbour towage and are known to all of the relevant parties, predation here seems unlikely.

For similar reasons, limit pricing is unlikely to inhibit entry. Whether entry occurs depends on the entrant's expectation of prices post-entry, not on prices prior to entry. Pre-entry prices are only relevant to the extent to which they can shape expectations of market behaviour once entry has occurred.

One possible exception where predation or limit pricing might succeed is the case where information is incomplete, in the sense that the entrant is uncertain as to demand or cost conditions that are known to the incumbent. Then the incumbent may be able to set pre-entry prices in such a way as to signal that it can operate in the market more successfully than the entrant—for example, because of uniquely lower costs—even when this is not true.[34] It has been argued that sunk costs cannot be known until exit[35]. However, companies like Wotech, Marcon and Marman can also provide similar expertise. Moreover, Adsteam notes that:

- Adsteam's enterprise bargaining agreements are public documents and could be used to forecast labour costs;
- Training costs can be readily forecast as the training period is no more than one month;
- Tug values and mobilisation and demobilisation costs can of course be easily investigated using companies like Wotech;
- Berth leases are known in advance and are typically annual; and
- Infrastructure costs can be found out with the help of shipping agents, of which there are dozens.

In short, where sunk costs are low and information readily available, as is the case for harbour towage, an incumbent is in no position to pretend its costs are lower than they are[36].

Predatory behaviour remains unlikely even allowing that the incumbent operates in more than one market. In the absence of significant sunk assets and of incomplete information, multi-market operations are unlikely to have any important effect on behaviour. No firm can credibly claim to be willing to lose money in one market because it is protecting more than

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34 See D. Kreps, 1990, *A Course in Microeconomic Theory*, Princeton University Press, Princeton pp. 468 ff.

35 p. 77.

36 For a simple illustration of this difficulty, see pp. 404-405 of Carlton, D. and J. Perloff, 1990, *Modern Industrial Organisation*, Harper Collins.

one market, if all are independent and subject to entry. For each market, entry will be attractive if prices exceed total costs, and otherwise not so:

- If price is above cost in several markets, this will independently generate entry in each. If the incumbent cuts price below cost in any one market, as a signal that it might do so wherever entry is occurring, this is hardly going to deter entry in another market where price has not been cut and profits are to be made. Meanwhile, the incumbent only loses money that cannot be recouped in the first market making it even more unlikely that such an action will be sustained.

- If price is above cost in only one market, then there can be no profits to protect elsewhere and the single market analysis applies[37].

Further, alternative explanations for volume rebates are considerably more plausible than anti-competitive ones. For example, the PC notes:

> "The fact that Adsteam currently provides rebates (albeit apparently modest) to major users in the declared containerised ports, may reflect cost savings from having a single operator at these various ports."[38]

Elsewhere it opines that the two likely causes of the rebates offered by Adsteam are (i) the countervailing power of its users, particularly the larger shipping lines; and (ii) lower unit costs of servicing large volume customers[39].

In any case, the rebates reduce list prices in some ports by only between 1.5 and 5 per cent. The PC is probably right that these are not likely to be large enough to hinder entry[40]. As the PC notes, many potential entrants, some of which have an international presence (see Appendix B), would have the ability to offer similar rebates.

Finally, it is also rather ironic that volume rebates are alleged to be anti-competitive in two respects:

- Until about five years ago, towage prices were the same for all shipping companies, irrespective of their usage of towage services. This pricing structure was criticised by

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37 An extended version of this analysis is found in R. Selten, 'The Chain Store Paradox' (1978) 9 *Theory and Decision* 127.

38 p. 73.

39 p. 91.

40 p. xxvi.

major users of towage services, who claimed that they were paying an unfair share of the fixed cost of towage to the benefit of casual callers at Australian ports. As a result, rebates were introduced by Adsteam. The net effect of these rebates was a reduction in Australia-wide group revenue in the vicinity of $6.0 million annually.

- It seems somewhat unreasonable that Adsteam must both defend itself against the claim that its prices may be too high[41] ***and*** the claim that its rebates result in prices that are too low.

Overall, we think it is unlikely that volume rebates could constitute a significant entry barrier into this activity. Other explanations are more compelling, and the scale of the rebates themselves suggests their impacts on entry decisions could only be modest.

[41] See the PC, p. xxix and pp. 98 ff, and discussion in this note at the start of Section2.

Appendix B

Overview of competitors—Prospective and current

The purpose of this appendix is to provide an overview of some of the biggest and most well-resourced current and potential competitors to Adsteam.

We begin with a table that documents recent examples of licences being offered and competitors who have indicated a willingness to enter the market[42]. The table demonstrates the "transportability" of competitive action, particularly by international operators. An overview is then provided of some of the more well-resourced companies that have either been recent bidders for towage licences or according to Adsteam's market intelligence, have been evaluating entry into the Australian towage market. All these operators are vertically integrated into other port related services and/or shipping.

[42] Port Authorities typically do not publish respondents. These are Adsteam's best estimates, based on market intelligence, of competitors making a substantive response to invitations.

Port	NEWCASTLE	ALBANY	GERALDTON	GLADSTONE	BUNBURY	FREMANTLE KWINANA
Year	1994	1996	1997	1999	2000	2001
Licence	non-exclusive	non-exclusive	non-exclusive	Exclusive	exclusive	optional
Competitors	Waratah[43] Brambles BHP NYK Line[44] Navix Line[45] Daiichi CK[46] K-Line[47]	FTO[48] MacKenzie FLT[49] Sunlap[50] HK Shipping[51] Westug[52]	SHS[53] Brambles Westug[54] GTO[55]	GTS[56] Brambles Sembawang[57] THS[58] POAL[59]	SHS[60] Brambles MacKenzie Riverwijs[61] THS[62]	SHS[63] Brambles THS[64] POAL[65] Southern[66] Westug[67] Smit[68] Riverwijs[69] Kotug[70] PSA[71] HKST[72] Sabre[73]

43 Adsteam and Howard Smith joint venture.
44 A major Japanese shipping line in consortium with BHP.
45 A major Japanese shipping line in consortium with BHP.
46 A major Japanese shipping line in consortium with BHP.
47 A major Japanese shipping line in consortium with BHP.
48 Adsteam and Howard Smith joint venture.
49 Fremantle Launch and Tug Company - a Fremantle based tug company.
50 New Plymouth, New Zealand.
51 Hetherington Kingsbury, a major Australian representative of international shipping companies.
52 Non-union operator providing towage services to Robe River.
53 Adsteam and Howard Smith joint venture.
54 Non-union operator providing towage services to Robe River.
55 Geraldton Tug Operators, a local consortium.
56 Adsteam and Howard Smith joint venture.
57 Sembawang, a large Singaporean maritime conglomerate owned by the Singapore government.
58 Total Harbour Services, a WA based group with strong overseas backing.
59 Port of Auckland Limited, a towage service provider with a protected domestic market.
60 Adsteam and Howard Smith joint venture.
61 Riverwijs, a joint venture between Riverside (a non-union Qld group) and Wijsmuller, second only to Smit in size and capability
62 Total Harbour Services, a WA based group with strong overseas backing.
63 Adsteam and Howard Smith joint venture.
64 Total Harbour Services, a WA based group with strong overseas backing.
65 Port of Auckland Limited, a towage service provider with a protected domestic market.
66 Australian group with widespread towage interests.
67 Non-union operator providing towage services to Robe River.
68 The largest Dutch towage operator.
69 Riverwijs, a joint venture between Riverside (a non-union Qld group) and Wijsmuller, second only to Smit in size and capability
70 Major Dutch towage operator from Rotterdam, Hamburg, and Bremen.
71 Port of Singapore Authority, one of the largest single towage operators in the world, owned by the Singapore government.
72 Port of Singapore Authority, one of the largest single towage operators in the world, owned by the Singapore government.
73 Hong Kong Salvage and Towage, a joint venture between Hutchison Whampoa and the Swire Group.

Hong Kong Salvage and Towage

In 1972, Hongkong Salvage & Towage became part of the Hongkong & Whampoa Dock group. Shortly afterwards, Hongkong & Whampoa joined forces with Taikoo Dockyard to form Hongkong United Dockyards (HUD), Hong Kong's largest marine engineering company, which is engaged in ship building, among other things, though not in shipping. The "small boat" fleets of the two yards were combined under the umbrella of The Hongkong Salvage & Towage Company Limited and the joint shareholders in HUD, Hutchison Whampoa and Swire Pacific, each took a 50% shareholding in the Company. Finally, in a corporate restructuring in 2000, Hongkong Salvage & Towage became a division of HUD.

With an average age of just six years, Hongkong Salvage & Towage's Japan-built tug fleet of 19 vessels, totalling 66,000 BHP, is Hong Kong's largest. It has seven ocean-going multi-purpose tugs which actively seek employment overseas, and which have worked throughout the Asia-Pacific region and in the Middle East and Caribbean, on both short and long term contract.

Ports of Auckland

Ports of Auckland was formed in 1988. It is the only New Zealand port company to own and operate ports on both the east and west coast of the North Island. It also operates towage services in Auckland and Whangarei.

Ports of Auckland is a public company with shares are listed on the New Zealand Stock Exchange. Eighty percent of its shares are owned by Infrastructure Auckland, which has been set up especially to manage a fund of regional investments. The remaining 20% of shares are owned by a mix of large and small shareholders, and are freely traded on the New Zealand Stock Exchange.

Ports of Auckland has four operating divisions through which it provides a comprehensive import and export operation for the New Zealand economy:

- Axis intermodal – A specialised container handling division;
- Port services - Responsible for Marine Services at the Port of Auckland and at its North Tugz operation at Marsden Point Oil Refinery; and General Wharves in both the Port of Auckland and the Port of Onehunga;

- Plant services - Responsible for the maintenance and repair of the port's cranes, mobile plant and electrical reticulation;
- Business development and finance - Operates the Company's marinas and administers its property holdings.

Port of Singapore Authority Corporation (PSA)

PSA is the world's largest container terminal operator and a leading provider of integrated port and logistics services. Adsteam reckons it to also be the world's largest towage operator.

In year 2001, it handled 19.13 million Twenty-foot Equivalent Units (TEUs) of containers worldwide, including 15.52 million TEUs in Singapore.

Building on its success at home, PSA is actively venturing overseas. PSA participates in 13 port projects in eight countries around the world: Antwerp and Zeebrugge ports in Belgium; Muara Container Terminal in Brunei; Dalian, Fuzhou and Guangzhou Container Terminals in China; Tuticorin Container Terminal and Pipavav Port in India, Voltri Terminal Europa and Venice Container Terminal in Italy, Incheon Container Terminal in Korea, Sines Container Terminal in Portugal and Aden Container Terminal in Yemen.

PSA has a logistics business which evolved from its core container terminals business and its experience in providing port and hub-related logistics solutions. Its activities include airport ground handling services through its subsidiary, Changi International Airport Services (CIAS) Pte Ltd, and the operations of two multi-purpose terminals in Singapore, cruise and passenger ferry terminals, exhibition activities and IT-based supply chain management integrated with its container terminals

Its wholly-owned subsidiary, PSA Marine, a leading marine service provider, offers a comprehensive range of marine services in Singapore, Hong Kong, Southeast Asia, Middle East and Africa. These include pilotage, ocean and harbour towage, international salvage and emergency response, heavy lift services, marine transportation, and marine advisory. Its tugs are available for specific towage assignment or long term charter, both locally and overseas. For enhanced safety when in operation, these tugs are designed with sophisticated propulsion systems and efficient tow-winches and are manned by professional tug masters and crew with many years' experience.

Smit International

Smit International is a major international towage operator. Its services are divided into four divisions:

- Harbour towage;
- Terminals (terminal management, terminal operations and the provision of associated services);
- Salvage (marine emergency response, wreck removal, fire fighting, etc); and
- Transport and heavy lift.

Smit Harbour Towage has a versatile fleet of over 150 vessels which assist thousands of ships in the world's most prominent and busiest ports.

SMIT Harbour Towage currently operates in the Netherlands; Canada; Panama; Mexico; Venezuela; Argentina; Belgium; Malaysia; Singapore and Indonesia.

Svitzer Wijsmuller

Svitzer Wijsmuller is one of the largest marine companies of the world, formed out of the merger of two marine services operators in August 2001. It has operations in harbour towage, offshore and terminal towage, salvage and ocean towage, safety standby vessels, hydrography surveys, barge transportation and maritime services (such as ship delivery, pilotage and tug design).

However, towage has been the basic line of business in the Wijsmuller Group history. Its towage operations are based in more than 20 ports around the world and operates more than 60 tugs. Its operations are centred around the UK, Canada, South America, the Middle East, Africa and Lithuania.

Appendix C

Examples of user support for harbour towage operators[74]

Towage with port operations:

- In Singapore, Keppel Smit, which is partly owned by Smit International, is the second major licensed harbour towage operator, originally entered the towage business in support of its extensive shipyard and ship repair activities.

- In Malaysia's Port Klang, both container terminal operators (Northport and Klang Multi Terminal) are licensed and operate harbour towage services with 8 and 5 harbour tugs respectively as a support service to their terminal operating business.

Towage, port operation and/or shipping:

- See Harbour Towage Services in Appendix D.

- In Hong Kong, the Hong Kong Towage and Salvage is the dominant harbour towage operator and is 50% owned by each of the Swire Groups and Hutchison Whampoa, which have other stakes in the marine business. See Hong Kong Salvage and Towage, in Appendix B.

- In Japan, all three major Japanese shipping groups – NYK, K Line and MOL - participate in harbour towage. For instance NYK manages two key towage operators in the ports of Tokyo and Yokohama. In all three cases, these operations are part of a wide range of semi integrated associated activities provided by these 3 leading Japanese shipping groups that offer a complete range of shipping services (container, bulk, ferry, car carrier etc).

- In the Scandinavian countries, Holland and the UK, AP Moller, which has container, bulk, tanker and gas shipping operations, also participates in towage through its ownership of Svitzer Wijsmuller, which is one of the world's largest towage groups.

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[74] Examples are drawn from Adsteam's internal research.

- In Chile, CSAV is the leading shipping operator. It also has a harbour towage subsidiary called SAAM. On SAAM's entry strategy in new markets, see SAAM's entry into the South American market in Appendix D.

Appendix D

Examples of recent entry into towage

Harbour Towage Services

In Newcastle, Australia in 1994, BHP, in a joint venture with a number of Japanese shipping lines, entered the Newcastle towage market in competition with the incumbent Waratah Towage. The entrant, Hunter Towage Services, was able to establish a customer base quickly and remain in the market for almost five years until they were bought out by Adsteam.

Australian Maritime Services' entry into the Port of Melbourne

Adsteam's dominance of the Melbourne port market was challenged in May 2002 when Australian Maritime Services entered the market with two Z-peller tugs sourced from Hong Kong. These tugs, were chartered with an option to buy.

AMS claims that it already has several clients in Melbourne, which will give it at least 40 per cent of the local towage market.

AMS also plans to expand its operations in the next 12 to 18 months to the major ports of Sydney, Brisbane and Fremantle. It looks like AMS intends to offer a package service in all the major ports to its customers. AMS envisages that it will eventually employ about 200 staff nationwide in a range of disciplines.

SAAM's entry into the South American market

In 1995, the Chilean-based towage company SAAM dramatically extended its operations the Latin American market when it won major harbour towage contracts in Mexico, Peru, Ecuador and Uruguay[75]. Its strategy was based on allying itself with local companies in each

[75] Discussions with Adsteam.

new country. SAAM would provide the tugs to fulfil the contracts. SAAM sourced its tugs from Wotech on a worldwide basis. Wotech had initially sourced second hand tugs from Japan, Korea and Hong Kong for SAAM.

Appendix E

Adsteam's investments in labour productivity

Adsteam has a history of investing in reforms to increase the productivity of its workforce. This appendix outlines some of these and also illustrates the degree to which such benefits spill over to rivals.

In June 1992, in cooperation with the help of the Federal government funded Towage Industry Reform Committee, it was able to achieve crew reduction on tugs from 8 to 4 man crews. In 1995, Adsteam broke away from the award payment structure and initiated direct negotiation with the maritime union. Before this, the towage operators had bargained on an industry-wide basis with the industry union via the Tug Owners' Committee. According to Adsteam, this practice, far from achieving mutually satisfactory outcomes, frequently involved the towage industry as a whole 'caving in' to whatever conditions were agreed to by the 'weakest link in the chain', entrenching a 'cost plus' environment.

The table below demonstrates the effectiveness of Adsteam in holding wage costs down. It provides an overview of wage agreements implemented under successive Enterprise Based Agreements (EBAs) with each of the three maritime unions – the Maritime Union of Australia, Australian Institute of Marine and Power Engineers and Australian Maritime Officers Union.

Year	MUA	AIMPE	AMOU
1994	Tugboat Industry Award	Tugboat Industry Award	Tugboat Industry Award
1995	Tugboat Industry Award	Tugboat Industry Award	Tugboat Industry Award
1996	5.5 % see note 1	5.5 % see note 1	5.5 % see note 1
1997	6.5 %	6.5 %	6.5 %

1998	nil see note 2	nil see note 2	nil see note 2
1999	2.0 % see note 3	2.0 % see note 3	2.0 % see note 3
2000	4. 0 % see note 4	2.5 % see note 3	2.5 % see note 3
2001	2. 5 % see note 3	nil see note 5	3.0 % see note 3

Note 1 The increase agreed for 1996 and 1997 followed approximately 18 months of a wage freeze between the expiry of the Award agreement and the commencement of the EBA.

Note 2 1998 marked the first year of the "recalculation of the aggregate wage". This resulted in a wage freeze for all employees during 1998. Subsequently, approximately 50% of crew experienced a continuing wage freeze in 1999, 2000, and 2001.

Note 3 Following the recalculation of the aggregate wage in 1998, this is the increase that applied to approximately 50% of the workforce. The other 50% received no increase. The net increase across the entire workforce was therefore half of this indicated figure.

Note 4 This was a "one-off" increase that applied only in those ports where deckhands were reduced from 2 to 1, and then only to the remaining deckhand. The net result, across the entire deckhand workforce, was an increase of only 1%.

Note 5 No increase has yet been agreed with the AIMPE, under the current EBA negotiations.

Adsteam's initiative to bargain directly with unions was initially greeted with scepticism by other towage operators and with some concern by users who feared service disruptions that might be incurred through strikes and other industrial tactics. Nonetheless Adsteam's strategy eventually paid off. Its EBA helped dampen wage expectations and gained:

- Guaranteed labour availability, flexible rosters and use of company-supplied mobile phones now mean a less than 2-hour service availability 24 hours a day, 7 days a week, 365 days a year.
- Elimination of workforce restrictions on transferring from one tug to another which previously reduced tug availability.

- Elimination of the taxi rank system of tug availability whereby previously the tug at the head of the rank had to be used even if it was not the tug required by the harbour pilot.

- Introduction of the practice of using the most economical way of relocating a tug from one port to another where the previous practice was for tug sent for dry docking to be accompanied by its home port crew even if this left the port short of staff.

Changes to work practices do not always reduce costs. They may improve service to customers, and could result in increased costs, even if also a lower quality-adjusted price than previously offered.

Examples of ***service improvement / cost increasing*** work practices developments include:

- The introduction of 24-hour operations centres in Brisbane, Sydney, and Melbourne. The purpose of these centres is to provide an around-the-clock ordering service to customers. In complex ports this means that trained tug controllers must be available around the clock, able to coordinate tugs and crews with the requirements of shipping. In Port Jackson and Port Botany, the port authority introduced a computerised harbour control system which requires ship movements and service requirements to be communicated only via the centralised computer system. For Adsteam to be linked to this system 24 hours a day, it has become mandatory for a fully manned office to be maintained at all times.

- Because of increasingly stringent occupational health and safety concerns, extended "on duty" (not necessarily working) hours must be carefully monitored. In a number of ports (Brisbane, Newcastle, Port Kembla, Melbourne, Adelaide and Fremantle) additional crews have been employed even though they are not justified by business activity levels.

- Introduction of a shift system for crews in Brisbane and Melbourne. This was seen as being necessary to keep individual "on duty" hours within reasonable limits while improving the availability of crews and tugs. The system actually reduces the utilisation of the workforce, particularly when ship call and tug job numbers are falling.

- A Personal Appraisal System has been introduced for crews. This reflects a policy of identifying (and rewarding) individual performance and is designed to improve the

motivation and professional pride in doing a job well and efficiently. This policy was designed to change the work culture of "not being seen to show a workmate up" by an individual working harder or better. It is a culture supported by the maritime unions who have strongly resisted the idea of paying people according to performance standards.

In 1998, Adsteam sought a reduction in tug crews from the previous 4 to 3 (consisting of a master, an engineer and a deckhand). It paid redundancy to one of the two deckhands on each tug (at a total cost of $5,870,010), with the tug engineer assuming additional responsibilities during actual towage operation and successfully negotiated with the Maritime Union of Australia (MUA) to reduce the deckhands from 2 to 1.

Finally, during 2000-01, Adsteam achieved its objective of reducing tug crews from 4 to 3 for fleets of harbour tugs fitted with towage winches, after extensive consultation with the MUA.

None of these results were achieved without a significant investment of managerial time and effort, including convincing the board of directors to proceed with the strategies, bargaining with the unions, and incurring losses due to industrial action. The 4 to 3 man crew reduction also involved expenditures on the following:

- an Independent Expert Risk Assessment study;
- investment in the identified equipment, and development of a comprehensive deck work training course for tug engineers;
- appointment of an independent chairman of an evaluation team, which eventually the MUA (after failed strike action) was induced to join;
- an international evaluation tour which examined towage operations in Singapore, Europe, and the USA for the benefit of the MUA contingent;
- an Australia-wide evaluation programme in which the operational environment of each tug and port was taken into account;
- preparation of supporting argument and submissions in those states where government-appointed Manning Committees were in existence (i.e., New South Wales and South Australia); and
- a redundancy package that was entirely funded by Adsteam.

Adsteam continues to incur what could be best described as 'legacy costs' arising from its work practices reforms and past negotiations with the union. These include training obligations for engineers and deckhands as a quid pro quo for its crew reduction reforms, which new entrants, coming into the market sometimes with non-unionised workforces need not incur even though these entrants use Adsteam's trend setting practice as a bargaining chip with their own labour force.

A more vivid example which illustrates the 'non excludability' of the benefit conferred by Adsteam's trend setting in work practices reform is that the enterprise bargaining agreement used by AMS, the new entrant into the port of Melbourne, is almost entirely based on Adsteam's. The savings to new entrants in such cases come not only from the fact that a precedent in particular industrial provisions established by Adsteam and can therefore be used as a 'bargaining chip', but also from the saving in transaction costs and managerial time of having to draft their own agreements.

A more generic form of non-excludability noted by Adsteam itself is the change in 'work culture' that has taken place since the sorts of reforms introduced from 1995 onwards. For instance, Adsteam's costly efforts via the Personal Appraisal System (as discussed above) likely spilled over to its competitors.

Appendix F: Credentials of NECG and Henry Ergas

NECG

The Network Economics Consulting Group (NECG) is an Australian consultancy with extensive international affiliations that undertakes work on a range of economic, regulatory, competition, trade practices and related issues for private sector and government clients in both regulated and unregulated industries.

NECG consists of more than 30 consultants and research and support staff based at our head office in Canberra and in Sydney, Brisbane and Melbourne. Augmenting our core team is an international network of other experienced people, including academics and industry and government experts, who share the same commitment to achieving the highest possible standard of work for our clients.

NECG's client base comprises participants in every major industry, most notably, telecommunications, new media, energy, water, transport and logistics, health, insurance, and financial services, and in the field of intellectual property. Among the clients who seek NECG's assistance are private and public companies, national and state regulators, international agencies, financial institutions, law firms, government entities, industry and professional service associations, key decision makers and those who advise them, and other industry participants.

NECG undertakes assignments for domestic and international clients on the economic aspects of regulation, competition policy, trade practices, intellectual property rights and related issues. Much of this work requires developing and applying new ways to accurately model market behaviour and the effects of regulation and trade practices legislation on business transactions and growth strategies.

Henry Egas

Henry Ergas is the managing director of NECG. Henry has extensive international experience advising government bodies and major corporations in Australia, New Zealand and the European Union.

Known especially for his work in telecommunications, Henry is also substantially involved in other network industries including electricity, aviation, surface transport and financial services. In addition to being heavily involved in regulatory costing and pricing issues, he has carried out work on market power and conduct issues in a range of industries, and provided statements and appeared as a witness in access arbitrations and competition law cases.

Henry's expert evidence has proved significant in numerous proceedings, including a landmark decision by the Australian Competition Tribunal to allow a multinational gas pipeline owner to operate uncovered by the national gas code. Henry recently chaired the Australian Intellectual Property and Competition Review Committee set up by the Federal Government in 1999 to review Australia's intellectual property laws as they relate to competition policy.

In July 2001, Henry was appointed by the Attorney General of New Zealand as a lay member assisting the High Court in cases involving appeals from decisions of the Commerce Commission and in other matters under the Commerce Act. Henry has published extensively and regularly addresses international conferences and seminars on issues in utility regulation, competition policy and intellectual property.