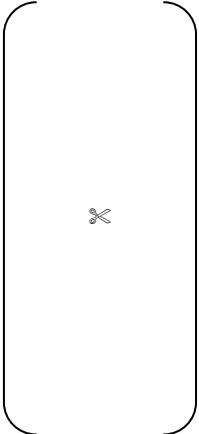


## Further information relating to entry conditions

### Acquiring a fleet of tugs

1. We asked the parties for their estimates of the minimum number of tugs needed for entry into their ports. For most ports, they considered that [X] tugs would be needed, though [X] tugs could be required in the largest ports (see Table 1).

TABLE 1 Parties' estimate of minimum number of tugs required for a new entrant

	Total number of tugs currently in port	Minimum number of tugs required for new entrant	
<b>Svitzer ports</b>			
Avonmouth	6		
Belfast	3		
Forth	2		
Greenock	4		
SE Wales	3		
Tees	6		
Tyne	3		
<b>Adsteam ports</b>			
Southampton	8		
Felixstowe	4		
Thames	7		
Medway	4		
Humber	22		
<b>Ports where Svitzer and Adsteam operate</b>			
Liverpool	11		

Source: CC, based on data provided by parties.

2. Two international operators told us that they would normally only consider entering ports for which four tugs were needed by a new entrant; a third told us that there should be the prospect of work for at least six tugs in order to start up in a new country.
3. We considered whether the cost of tugs required to enter ports would constitute a significant barrier to entry. We found that the smallest-scale entry feasible would require an initial investment in tugs of £2–£3 million. Larger-scale entry—for example, into ports which required tugs of a higher specification—might require a larger initial investment in tugs of £8–£10 million. The existence of an international second-hand market for tugs means that some of this investment could be recovered if entry was unsuccessful. However, some of the initial investment would not be recoverable on exit (eg any costs of shipping the tugs to the port and their reduction in value). We noted that an alternative was to charter tugs. However, there did not appear to be strong benefits to chartering as opposed to buying tugs, and we noted that all the main towage providers in the UK owned their tugs.<sup>1</sup>
4. We concluded that there do not appear to be substantial obstacles to purchasing or chartering tugs, and that there is an active second-hand market. However, the number and specification of tugs required to enter a particular port would give rise to

<sup>1</sup>Svitzer chartered some of its tugs from a sister organization and also chartered tugs on a short-term basis to ensure adequate cover when not all of its own tugs were available.

significant fixed costs, which a new entrant would need to finance to enter the market and recover in order to make a profit.

## Recruiting a tug crew

5. In the UK, tugs need between three and five men to operate them, depending on whether or not the tug leaves port limits. Each tug's crew is headed by a tug-master; other crew members can be watchkeepers, engineers or tug-hands. The requirement on harbour towage operators to provide a service at all times means that each tug requires more than a single crew.
6. The qualifications and experience required of Inshore Tug Personnel are covered by the Merchant Shipping (Training and Certification) Regulations 1997 and is overseen by the MCA and the training scheme is administered by the BTA. Marine Guidance Note 209 (M) sets out the training requirements for inshore tug personnel. Candidates for a Certificate of Competency are required to demonstrate a relevant level of skills and understanding either by Vocational Qualification or by enrolling in the BTA Marine Apprenticeship Training Scheme. In addition to obtaining the relevant qualification, candidates are required to demonstrate a service record of sufficient length in the UK inshore towage industry. Table 2 summarizes our understanding of the qualifications and service requirements needed to obtain a Certificate of Competency.

TABLE 2 **Qualification and service record required to obtain Certificate of Competency**

<i>Level</i>	<i>Length of service required (years)</i>	<i>VQ level required</i>
Tug-hand	None	2
Bridge watchkeeper	3	3
Engine room watchkeeper	3	3
Dual Bridge and Engine room watchkeeper	4.5	3
Engineer	6	3
Master	6	4
Dual Master and Engineer	9	4

Source: CC analysis of MCA certification guidance.

7. Candidates with alternative qualifications and experience (eg from other maritime sectors or from harbour towage in other countries) may be allowed a reduction in the service requirements and their applications are considered on a case-by-case basis on their merits. Masters, Chief Engineers and other Officers holding UK STCW Certificates of Competency may work on tugs up to the limitations of their certificates. Where this happens there may be a company requirement for a period of familiarization of the vessel's operations. We were also told by SMS that different certification requirements are placed on crews of tugs of less than 24 metres length and particularly that there is no requirement for service within the UK inshore towage industry to operate these tugs. We noted that Adsteam, when setting up Humber Tugs, had not experienced any problems recruiting suitably qualified crews.
8. On balance we considered that finding suitable crew did not constitute a significant barrier.

## Obtaining permission to operate in a port

9. Adsteam told us that there was no formal requirement for prior authorization from any regulatory body to operate harbour towage services. However, a firm would find it

very difficult to operate harbour towage services in a port against the wishes of either the MCA or the port authority. Appendix C contains an overview of the regulations and regulatory bodies relevant to harbour towage, including the roles of the MCA and the port authorities.

10. Whilst port authorities have the power to create port-specific regulations, Adsteam told us that port authorities would generally be supportive of competent entrants. We have been told that harbour masters may also make specific requirements of harbour towage operators as a condition for using a port. For example, Svitzer told us that a port authority may request a minimum number of tugs in a port, though ABP, which runs 21 UK ports, told us that it did not specify the number of tugs that should be based in a port. A representative of the Tees Port Authority told us that, along with the pilots, he might interview tug skippers of a potential entrant to ensure that they met at least a minimum standard. ABP told us that whilst a new entrant would have to comply with MCA standards, it would also satisfy itself about the competence of tug crews, and operating standards.
11. In addition to the harbour master's powers, we were told that pilots may exert a degree of influence. We were told by one commentator that safety concerns by pilots had played a role in the failure of BI Tugs to reach critical mass in the Medway in the 1990s. [§] We were also told of an instance when a potential new entrant failed to gain an owner terminal contract, in part because of its proposals not meeting with the approval of pilots on the Mersey.
12. Port Users' Groups also have some influence. We were told by the parties that such bodies could help sponsor entry. However, we found that they may also discourage entry if they consider it would have a negative outcome on service equality. We were told in a hearing with THPUA that there was not enough business on the Tees for more than one operator, that the Tees did not need a second operator and that service quality might reduce if a second operator entered the market. We inferred from this that a second operator would not necessarily be welcomed into the Tees by the Port Users' Group there.
13. On balance, we concluded that, while a new entrant would find it very difficult to operate in a port against the wishes of the MCA, the port authority, pilots or the port users' group, we have no general reason to consider that this would represent a substantial obstacle for a new entrant, provided the new entrant meets the normal requirements of these bodies (for example, relating to safety).

### **Volume of business transacted with largest customers**

14. Tables 3 and 4 provide summary information about the number of tug jobs used by the largest customers of Svitzer and Adsteam in each of the ports in which they operate.

TABLE 3 Summary of volume of business with Svitzer large customers

Port	Top Svitzer customer	Number of tug jobs in 2005				% of all tug jobs	
		Largest customer	Five largest customers	All Svitzer	All operators	Largest customer	Top 5 customers
Avonmouth	( )						
Belfast							
Forth							
Greenock							
Liverpool							
SE Wales							
Tees							
Tyne							

Source: CC analysis of data provided by Svitzer.

Note: Liverpool market size estimated using Svitzer and Adsteam estimates of harbour towage services for latest financial year.

TABLE 4 Summary of volume of business with Adsteam large customers

Port	Top Adsteam customer	Number of tug jobs in FY 2005/06				% of all tug jobs	
		Largest customer	Five largest customers	All Adsteam	All operators	Largest customer	Top 5 customers
Felixstowe	( )						
Humber							
Liverpool							
London							
Medway							
Southampton							

Source: CC analysis of data provided by Adsteam.

Note: Liverpool market size estimated using Svitzer and Adsteam estimates of harbour towage for latest financial year. Humber market size estimated on assumption that Adsteam has 90 per cent market share.

## Economic models of potential entry

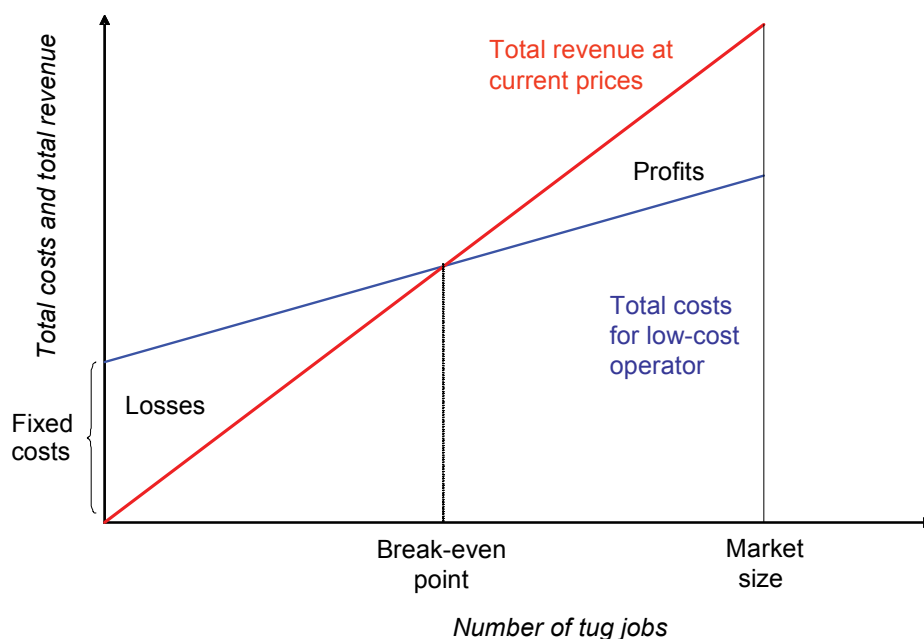
### Initial entry models submitted by Svitzer

15. Svitzer submitted economic models (produced by the economic consultants RBB) that calculated the minimum number of tug jobs—at current average price per tug job—that would be required by a low-cost entrant,<sup>2</sup> in order to operate profitably in each port in which Svitzer was present. This approach is illustrated in Figure 1.

<sup>2</sup>Assumed to have lower labour costs (65 per cent lower in the case of Avonmouth), but otherwise the same cost profile as Svitzer.

FIGURE 1

### Svitzer/RBB entry model



Source: CC.

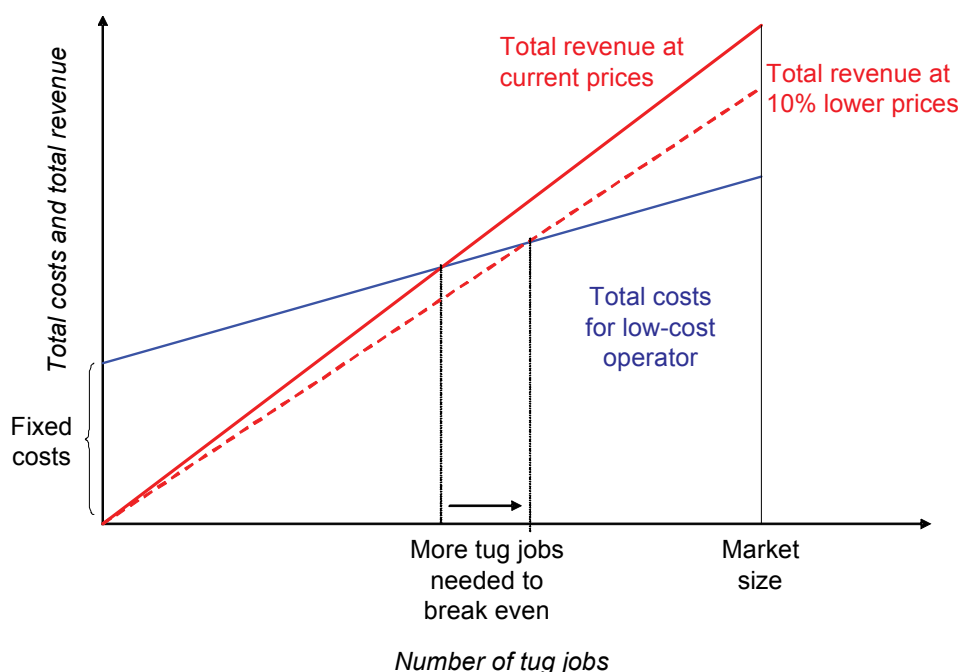
16. The average revenue per tug job might be expected to be somewhat lower for a new entrant than for an incumbent monopoly provider, because:
  - a new entrant would typically have to offer lower rates to customers in order to win their business;
  - incumbents are likely to respond to new entry by lowering their own prices; and
  - the larger customers (whom a new entrant might be expected to target in order to reach the breakeven point more rapidly) will typically be paying lower prices per tug job.<sup>3</sup>
17. Svitzer/RBB therefore also estimated the breakeven scale of entry on a second scenario, in which prices were assumed to fall by 10 per cent post-entry. This has the effect of increasing the number of tug jobs required to break even (see Figure 2).

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<sup>3</sup>RBB subsequently developed more sophisticated economic models that explicitly allowed for this factor. See paragraphs 21 to 24.

FIGURE 2

**Svitzer/RBB entry model (II): prices fall post-entry**



Source: CC.

18. Table 5 summarizes the results of this analysis for all Svitzer’s UK ports.

TABLE 5 Svitzer/RBB analysis of minimum scale of entry

				At current prices		At 10% lower prices	
	Number of tug jobs performed by SW	Number of tugs operated by SW	Number of tug jobs required for SW to break even	Number of tug jobs required for entrant to break even	Number of tugs required	Number of tug jobs required for entrant to break even	Number of tugs required
Avonmouth	⌈ ✂ ⌋	6	⌈     ⌋		✂		⌈     ⌋
Belfast		3					
Forth		2					
Greenock		4					
Liverpool		4					
SE Wales		3					
Tees		6					
Tyne		3					

Source: CC analysis of data provided by Svitzer.

19. Tables 6 and 7 place this analysis into context. Table 6 calculates the market share that the new entrant would need to acquire in order to break even (assuming that the market size overall remained unchanged). At current prices, a new entrant would require a market share of between [✂] (Tees) and [✂] per cent (SE Wales). If the new entrant’s prices were 10 per cent lower than Svitzer’s average prices (the more likely of the two scenarios), the entrants’ target market share would range between [✂] and [✂] per cent. If entry were to take place on this scale, Svitzer’s volume of business would fall below breakeven levels for its current number of tugs.

TABLE 6 Market share required for new entrant to break even at Svitzer ports

*per cent*

*Market share needed for entry*

	<i>At current prices</i>	<i>At 10% lower prices</i>
Tees	( )	✂
Avonmouth		
Greenock		
Liverpool*		
Belfast		
Forth		
Tyne		
SE Wales		

Source: CC analysis based on Svitzer data.

\*Liverpool market size is calculated using Svitzer’s estimate of its own market share in Liverpool (10% per cent).

20. Table 7 compares the number of tug jobs required by a low-cost operator to break even against the volume of business accounted for by Svitzer’s five largest customers in each port.

TABLE 7 Comparison of breakeven scale for entrant with volumes of business for largest Svitzer customers

<i>Port</i>	<i>Top Svitzer customer</i>	<i>Number of tug jobs in 2005</i>			<i>Number of tug jobs needed to break even</i>	
		<i>Largest customer</i>	<i>Next four customers</i>	<i>Five largest customers</i>	<i>At current prices</i>	<i>At 10% lower prices</i>
Avonmouth	( )	✂	✂	✂	✂	✂
Belfast						
Forth						
Greenock						
Liverpool						
SE Wales						
Tees						
Tyne						

Source: CC analysis based on Svitzer data.

**Further entry models submitted by Svitzer and Adsteam**

- 21. During the inquiry, Svitzer and Adsteam submitted further entry models. These reflect the fact that, on average, large customers receive higher discounts by incorporating the current variation in average net revenue per tug job across customers. As a consequence, the number of top customers required for a new entrant to be profitable tends to be higher with these models than with the models based on average price per tug.
- 22. We used these models to analyse the entry conditions into Adsteam’s ports—in particular, Felixstowe and Liverpool.
- 23. Table 8 summarizes the results of the analysis for all of Adsteam’s UK port.<sup>4</sup>

<sup>4</sup>Excluding the Humber, for which an entry model was not provided.

TABLE 8 RBB/Adsteam analysis of the minimum number of customers for profitably entry by a low-cost entrant

	At current prices				At 10% lower prices			
	Number of tug jobs by Adsteam	Number of tugs operated by Adsteam	Number of customers required for entrant to break even	Number of tug jobs by these customers	Number of tugs required	Number of customers required for entrant to break even	Number of tug jobs by these customers	Number of tugs required
Felixstowe	⌈ ✂ ⌋	4	⌈    ⌋		✂		⌈    ⌋	
Liverpool		7						
London		8						
Medway		4						
Southampton		7						

Source: CC analysis of RBB entry model.

24. Table 9 calculates the market share that the new entrant would need to acquire in order to break even (assuming that the market size overall remained unchanged). At current prices, a new entrant would require a market share of between [✂] (London) and [✂] per cent (Medway). If the new entrant's prices were 10 per cent lower than Adsteam's current prices to the customers targeted (a more likely scenario), the entrants' target market share would range between [✂] and [✂] per cent.

TABLE 9 Market share required to break even at Adsteam ports

	per cent	
	Market share needed for a new entrant to break even	
	At current prices	At 10% lower prices
Felixstowe	⌈ ✂ ⌋	
Liverpool*		
London		
Medway		
Southampton		

Source: CC analysis of RBB model.

\*Liverpool market size is calculated using our estimate of the size of the market in Liverpool, excluding Tranmere as this contract is not contestable in the short to medium term.

- 25. We examined these models to examine entry conditions in Liverpool and Felixstowe.
- 26. In Liverpool, the estimates of a low-cost entrant's costs based on Adsteam and on Svitzer data produced different results regarding the cost structure of a new entrant. This reflects the fact that Svitzer's fixed costs per tug in Liverpool are higher than those of Adsteam. The model based on Svitzer's cost structure found that a low-cost entrant would not find it profitable to enter Liverpool with three tugs at current prices.
- 27. The model based on Adsteam's cost structure found that a new entrant, with a fleet of [✂] tugs, would need to convince Adsteam's [✂] largest customers in order to enter profitably at prices 10 per cent below the prices these customers are currently paying. We aggregated Svitzer and Adsteam's customer data in order to calculate the minimum number of customers in Liverpool a new entrant would need in order to enter profitably with [✂] tugs in Liverpool.<sup>5</sup> If we also include Svitzer's largest customers in the analysis, the [✂] largest customers in Liverpool would be needed in

<sup>5</sup>We excluded Shell at Tranmere from this analysis.

order to enter profitably at prices [x] per cent below the current prices. In order to enter profitably with [x] tugs in Liverpool, the minimum number of customers required would be [x].

28. In Felixstowe, we analysed whether the number of customers needed in order to enter would increase following the merger because Maersk may no longer be willing to sponsor entry. Using the RBB model of entry in Felixstowe, we estimated the increment in the minimum number of customers needed to enter, depending on the amount of discount a new entrant would need to provide to these customers in order to convince them to switch. The results are reported in Table 10.

TABLE 10 Number of top customers required for a low-cost entrant in Felixstowe to break even, based on RBB model

	Pre-merger (including Maersk)	Post-merger (excluding Maersk)	Increment
No discount off current price	( [x] )	[x]	1
10% discount off current price			1
20% discount off current price			2
30% discount off current price			3

Source: CC, based on RBB model for Felixstowe.

29. The figures in Tables 8, 9 and 10 depend on the assumption that the entrant's strategy would be to target the largest customers in each port, in order to reach breakeven levels with the minimum number of customers. However, as discussed in paragraph 7.27, the large discounts already given to these customers may make it difficult to convince such customers to switch. So a strategy focusing on gaining smaller contracts might be appropriate, although in that case the number of customers required in order to break even would increase. This can be illustrated in the case of Liverpool. We calculated (in paragraph 27) that a new entrant could enter profitably with the [x] largest customers of Adsteam and Svitzer in Liverpool. If these [x] customers were not available, our calculations suggest that the minimum number of customers required would increase to [x].

### Potential entry strategies on a port-by-port basis

30. Demand in the Humber is fairly fragmented, with the top five customers accounting for [x] of all tug jobs. However, the market share required by an entrant to reach breakeven is likely to be lower in the Humber than in other UK ports. A new entrant would probably need to build up to breakeven levels of activity by securing individual customers over several years. This has been the approach taken by SMS.
31. The largest single customer managed from Liverpool is the Ministry of Defence contract for the Falkland Islands (Adsteam). The customer base in Liverpool is fairly fragmented, so that a new entrant would have to secure a relatively large number of customers to break even.
32. In Tees and Tyne (both Svitzer), securing the business of a [x] ([x] in Teesside and [x] in Tyneside) would take a potential entrant [x] towards reaching the breakeven point estimated by Svitzer/RBB. Entry might be expected to focus on winning the business of [x], though in Teesside (the larger port) a potential entrant could also target other large customers;
33. In Avonmouth (Svitzer), [x] a potential entrant could obtain over [x] per cent of business by securing [x] out of the [x] largest users. Avonmouth has [x]. A

strategy for high-impact entry could focus on securing the business of these customers.

34. In Felixstowe, Adsteam has [X] large customers ([X]) who between them account for [X] per cent of tug jobs and [X] per cent of net revenue in the port. Potential entry might be expected to focus on attracting at least [X] of these customers. Svitzer and Adsteam noted that attracting [X] (but no other customers) would not be sufficient for entry to be profitable, even for a low-cost operator.
35. In London and the Medway (Adsteam), [X] a potential entrant could achieve a market share of [X] per cent by securing the top [X] users. The picture is similar in Southampton, which is a larger port and slightly more concentrated on the buyer side.
36. Looking at Svitzer's smaller UK harbour towage operations, securing [X] in Greenock would be sufficient for a new entrant to reach the breakeven point estimated by Svitzer/RBB. The rest of the customer base is fairly fragmented, so entry might be expected to focus on winning [X]. In Belfast, south-east Wales and Forth, by contrast, securing the business of the top [X] customers would still leave a potential entrant some way short of reaching breakeven port. Entry only appears feasible by displacing Svitzer entirely.

### Shares of harbour towage business by customer type

37. Table 11 shows the shares of the parties' harbour towage business broken down by customer type. A much larger proportion of Adsteam's business is accounted for by container ships. This is largely a function of differences in traffic through the ports in which the parties operate, although Adsteam also supplies the majority of container ship business in Liverpool.

TABLE 11 Breakdown of tug jobs by cargo, 2005

Customer type	per cent	
	Adsteam	Svitzer
Container		
Cars		
General cargo		
Liquid bulk		
Coal		
Dry bulk		
Crude oil		
Other		

Source: CC analysis of data provided by the parties.

Note: Svitzer figures relate to customers with transactions of more than £20,000 a year. Adsteam figures relate to financial year 2005/06.

### Cost structure of harbour towage operators

38. We asked the parties for information about their cost structures. Figure 3 summarizes the cost information provided by Svitzer aggregated across its UK ports.
39. Figure 3 shows the importance of labour costs and of fixed costs to Svitzer. Just over [X] of Svitzer's UK costs are accounted for by the wages paid to the tug crews. Just

over [X] of Svitzer's UK costs are the fixed costs associated with operating particular tugs.<sup>6</sup> Variable costs account for less than [X] of Svitzer's costs.

FIGURE 3

[X]

Source: [X].

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<sup>6</sup>In other words, these costs are fixed, once the decision to operate a particular tug has been taken.