

Switching

Introduction

1. In our analysis in this appendix, a switch refers to a situation where a TOC leases alternative rolling stock on a franchise.¹ In the context of this inquiry, we consider that switching opportunities have arisen primarily at franchise re-lets.²
2. We use the following terms in this appendix:
 - (a) Incumbent rolling stock is used rolling stock that a TOC has on lease from a ROSCO prior to a franchise re-let.
 - (b) In the context of switching, alternative rolling stock means rolling stock that a TOC leases on a new/replacement franchise that was not leased on the previous franchise. Alternative rolling stock is either new rolling stock or used rolling stock that was previously off-lease or leased on another franchise.
 - (c) Displaced rolling stock refers to incumbent rolling stock that is replaced by alternative rolling stock or is otherwise moved to another franchise.
3. In this appendix we assess (a) switching since privatization,³ and (b) the costs of switching rolling stock.

Switching since privatization

4. In this section we examine switching from privatization to the end of 2008 and then switching that may arise as a result of the DfT's Rolling Stock Plan.⁴

Analysis of switching from privatization to the end of 2008

5. We conducted our analysis of switching in two ways by considering:
 - (a) the extent to which incumbent rolling stock has been leased at each franchise re-let; and
 - (b) the extent of switching generally as defined above in relation to used rolling stock only.

¹We do not include in our definition of a switch the situation where rolling stock is moved from one franchise to another only in consequence of a franchise remapping. By way of example of a franchise remap, certain Voyager trains that were leased to the Cross Country franchise were moved to the West Coast franchise after services between Birmingham and the North-West were transferred to the West Coast franchise. This is not a switch for the purpose of our definition.

²Switching in this industry is different from switching in most other industries. In this industry, the customer doing the switching may be different from the customer that previously used the rolling stock. This situation arises where an incoming TOC that has been awarded a new franchise chooses not to lease the same rolling stock as the previous franchisee. For our analysis we consider this as a switch because there is usually a close similarity between the service requirements on the old franchise and the new franchise. This means that the rolling stock on the previous franchise is usually the starting point for a bidder for the new franchise.

³Our switching analysis only tells us about the realization of competitive pressures, not the threat of switching. We have considered the threat of switching in our assessment of alternatives in Appendix 4.1.

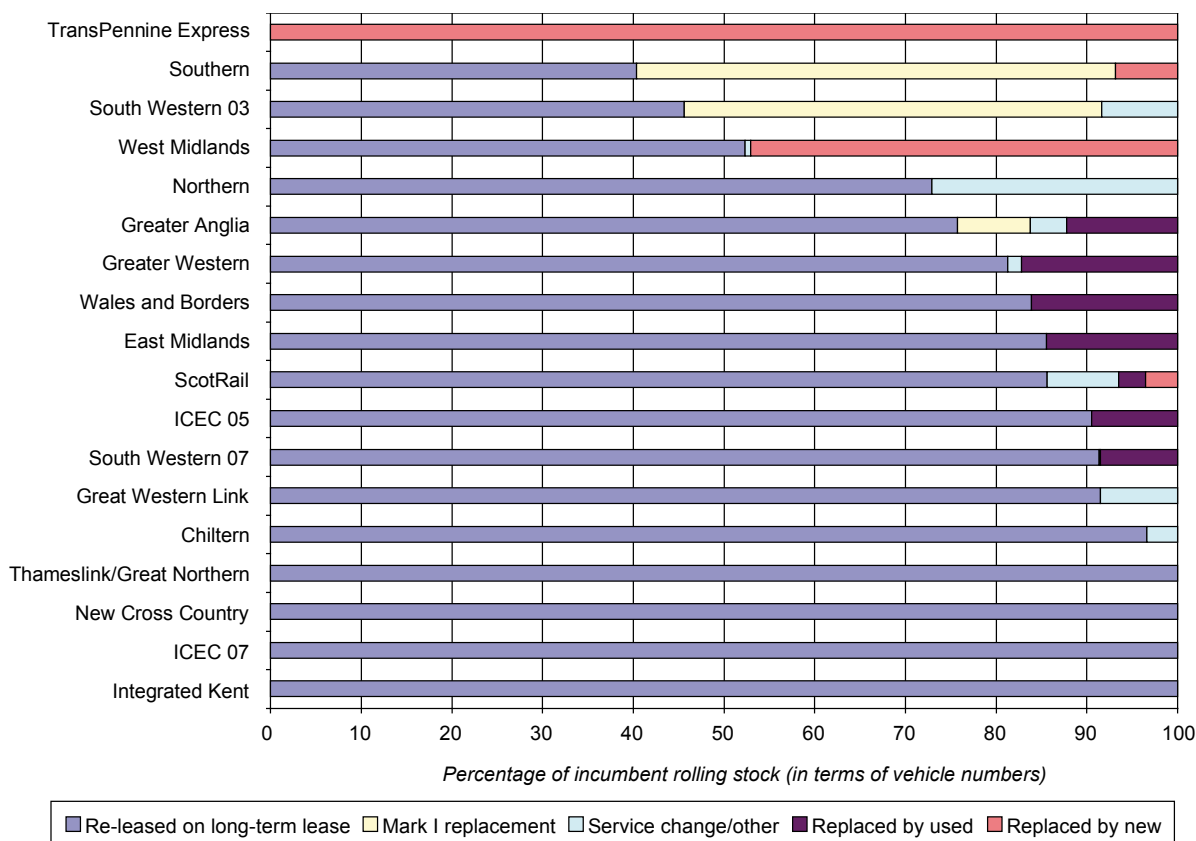
⁴We have not analysed switched rolling stock between the start of 2009 and the date of our final report because of the need to have a sensible cut-off point in data gathering. However, we have considered possible future developments in switching of rolling stock in paragraphs 27 to 29.

Incumbent rolling stock leased at each franchise re-let

6. Figure 1 shows the extent to which incumbent rolling stock has been leased on long-term leases for 18 franchise re-lets⁵ based on data submitted by the DfT.

FIGURE 1

Extent of incumbent rolling stock leased at franchise re-let



Source: CC analysis of DfT data.

Note: This does not include the two concessions (Merseyrail and London Overground) or the Virgin West Coast and C2C franchises (which have not been re-let).

7. Figure 1 shows that the franchises where the most switching has taken place (TransPennine Express, Southern, South Western 2003 and West Midlands) have been the result of switching to new rolling stock. In two of these cases (Southern and South Western 2003), this was caused by the compulsory retirement of the Mark I 'slam-door' rolling stock affecting a large portion of the incumbent fleet. Figure 1 shows that non-compulsory switching to new rolling stock has occurred on four franchises and switching to used rolling stock on seven franchises.
8. Using the data behind Figure 1, we calculated that a weighted average⁶ of 77 per cent of incumbent vehicles have been leased at franchise re-let.⁷ Of the 23 per cent of vehicles that have not been leased for the length of the franchise, only 9 per cent related to switching to alternative used or new rolling stock (5 per cent to alternative used and 4 per cent to alternative new rolling stock). The other 14 per cent related to

⁵This did not include London Overground or Merseyrail.

⁶Weighted by the number of vehicles on each franchise.

⁷This figure for incumbent vehicles re-leased on a long-term lease includes 23 per cent of vehicles that have been subject to a section 54 undertaking or specified in the franchise ITT.

the compulsory retirement of the Mark I rolling stock (accounting for 11 per cent of vehicles) and service changes or other reasons which meant that the rolling stock was no longer required (3 per cent).

9. The DfT also submitted an analysis of rolling stock substitutability based on the same 18 franchise re-lets, from which Table 1 is taken.

TABLE 1 Percentage of incumbent fleet re-leased at franchise re-let

	<i>per cent</i>
Incumbent fleet re-leased for the full franchise term*	81
Incumbent fleet not re-leased for the full franchise term	19
—Life expired	11
—Replaced by existing alternatives	2
—Replaced by new rolling stock	4
—Surplus not retained	1

Source: DfT calculations.

*The DfT's analysis showed that 31 per cent of incumbent fleets were covered by section 54 undertakings or were specified in the franchise ITT and so were leased for the full franchise term. We discuss this part of the DfT's analysis in Appendix 4.1.
Note: Figures may not sum due to rounding.

10. The DfT's analysis in Table 1 shows that at franchise re-let, only 6 per cent of incumbent rolling stock was not re-leased for the full franchise term because the TOC chose instead to lease alternative rolling stock (2 per cent of incumbent rolling stock was replaced by alternative used rolling stock and 4 per cent was replaced by new rolling stock).⁸ Angel commented that the DfT's analysis implied that 12 per cent of incumbent rolling stock, which it considered was a significant proportion, was replaced when switching was not restricted by section 54 undertakings, franchise ITT specification or life-expired rolling stock.⁹

The extent of switching in relation to used rolling stock

11. As explained above, in this appendix we refer to a switch as including all instances where a TOC leases alternative rolling stock. Our analysis in this section considers switching where the franchisee obtains alternative *used* rolling stock from another franchise.¹⁰ We do not consider in this section the direct switching from incumbent rolling stock to alternative new rolling stock (including switching as part of the Mark I replacement programme, where used rolling stock was directly replaced and withdrawn from service). The purpose of this approach is to help us understand how much used rolling stock has been moved between franchises since privatization.
12. Our analysis is based on data compiled using information primarily from the ROSCOs, combined with data provided by the DfT and the TOCs.
13. We identified 78 instances¹¹ of switching between privatization and the end of 2008.¹² This amounted to 1,497 vehicles over a period of 13 years. Although the number of vehicles switched in individual instances varied from 1 to 149 vehicles, the

⁸The DfT's analysis produces lower figures for switching than our analysis because the DfT did not consider instances where parts of fleets have been switched.

⁹12 per cent is calculated by taking the rolling stock not retained (7 per cent, which equals 2 plus 4 plus 1 per cent) divided by the rolling stock that was not restricted by a section 54 undertaking or life-expiry (58 per cent, which equals 100 less 31 less 11 per cent).

¹⁰We consider the extent of new rolling stock introduced since privatization in Section 5 of the main report.

¹¹This analysis includes two switches that were a result of cascades from the Merseyrail concession.

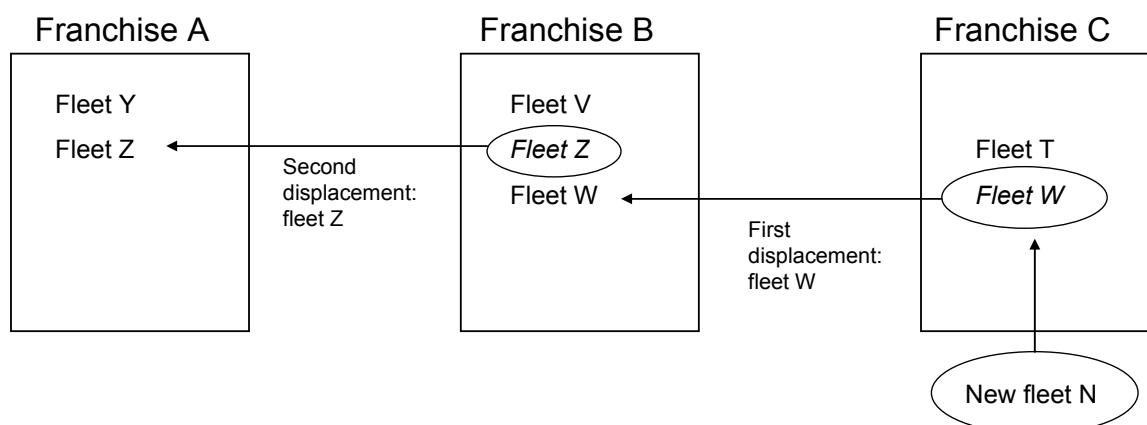
¹²We consider switching that will occur as a result of the Rolling Stock Plan in paragraph 27.

mean was only 19 vehicles, showing that switching tends to concern relatively small fleets or parts of fleets.

14. Since privatization, switching of used rolling stock has primarily occurred through the introduction of new rolling stock leading to a cascade of rolling stock. Of the 78 instances of switching we identified between privatization and the end of 2008, 52 instances (covering 1,229 vehicles, 82 per cent of switched vehicles) were caused by the introduction of new rolling stock leading to a cascade of used rolling stock. A cascade refers to the total movement of rolling stock between franchises that is brought about by the introduction of new rolling stock on one franchise. The possible impact of the introduction of new rolling stock, including the 'knock-on' displacements that may result, is illustrated in Figure 2. When new rolling stock is introduced on a franchise it may displace some incumbent rolling stock, which we refer to as a first displacement. For example, in Figure 2, the introduction of new fleet N to franchise C leads to fleet W being displaced and moving from franchise C to franchise B. Fleet W in turn displaces fleet Z to franchise A, which represents a second displacement. A cascade will continue until a movement of rolling stock does not trigger a displacement to another franchise because the rolling stock is required to increase service requirements on a franchise or is required to replace retired rolling stock.¹³

FIGURE 2

Illustration of a cascade of rolling stock



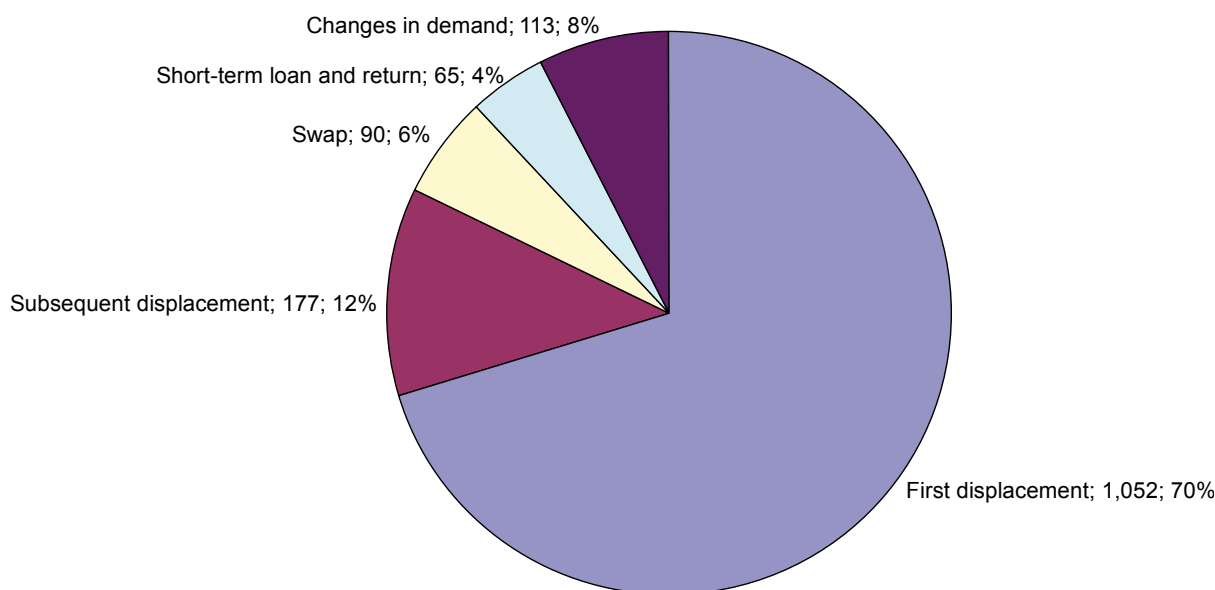
Source: CC analysis.

15. Figure 3 shows that most cascades have only involved one displacement of rolling stock. Subsequent displacements have occurred relatively rarely (covering only 177 vehicles). Figure 3 also provides a breakdown of the other reasons that rolling stock has moved.

¹³Where rolling stock goes temporarily off-lease, the cascade is effectively still in progress. Given periods off-lease and franchise lengths, in some cases there may be several years between the first and last displacement in a cascade. For example, the Mark III rolling stock displaced on the Virgin West Coast and Virgin Cross Country franchises was off-lease for several years before moving to another franchise. This is discussed in more detail in Appendix 6.1.

FIGURE 3

**Reasons for movements of rolling stock since privatization
by number of vehicles**



Source: CC analysis of ROSCO data.

Note: Labels are number of vehicles and then per cent of total switching.

16. The remaining 26 out of 78 instances of switching (covering 268 vehicles or 18 per cent of switched vehicles, as shown in Figure 3) were other movements of rolling stock as part of swaps or to meet changes in demand or short-term requirements:¹⁴
- (a) *Swaps*. A TOC may take rolling stock from another TOC's franchise and give some rolling stock from its own franchise in exchange. Swaps are relatively infrequent but typically occur because the rolling stock on another franchise may better meet a TOC's operational requirements. They require new lease agreements to be entered into between the relevant TOCs and ROSCOs.
 - (b) *Changes in demand*. Changes in timetabling requirements may lead to a change in demand for rolling stock. As a result, rolling stock is transferred from one franchise to another to satisfy the changes in demand.¹⁵
 - (c) *Short-term loan and return*. Rolling stock leased to one TOC may be put on a short-term lease with a different TOC with an understanding that the rolling stock will be returned to the current lessee in the future.
17. As opportunities for switching arise at franchise re-let, Table 2 shows that most switching¹⁶ has taken place since 2004 because of the increase in the number of franchise re-lets since that date. Until 2004 the annual level of switching did not exceed 1 per cent of the total rolling stock capacity. Switching rose to 3.8 per cent of capacity in 2004 and 4.7 per cent in 2007 but fell to 0.2 per cent in 2008. Figure 4

¹⁴We note that swaps and short-term loans are not usually part of a strategic change in rolling stock requirements and may only be used as a short-term solution to relieve temporary bottlenecks in rolling stock supply.

¹⁵As an example, in 2005, some Class 150 rolling stock was transferred from One, where it was not required, to Arriva Trains Wales, which was experiencing growth in demand.

¹⁶We can use Table 2 to calculate that 79 per cent of vehicles that have been switched have switched since 2004.

shows the relationship between the number of vehicles involved in franchise re-lets in each year and the number of vehicles switched in each year.¹⁷

18. Angel stated that the low level of switching could be explained by the bespoke nature of many fleets, the restraint upon switching created by section 54 undertakings, the large number of new rolling stock fleets which were procured with the aim of servicing one franchise for a considerable period of time, and the incumbent fleet doing its job correctly.

¹⁷We found that in 65 per cent of switches the physical movement of vehicles took place midway through a franchise. This was almost invariably due to a cascade occurring in consequence of a decision made at the start of the franchise period by the incoming TOC to switch rolling stock. The delay in the physical movement of rolling stock is caused by the time needed to introduce new rolling stock or to wait for alternative used rolling stock to become available.

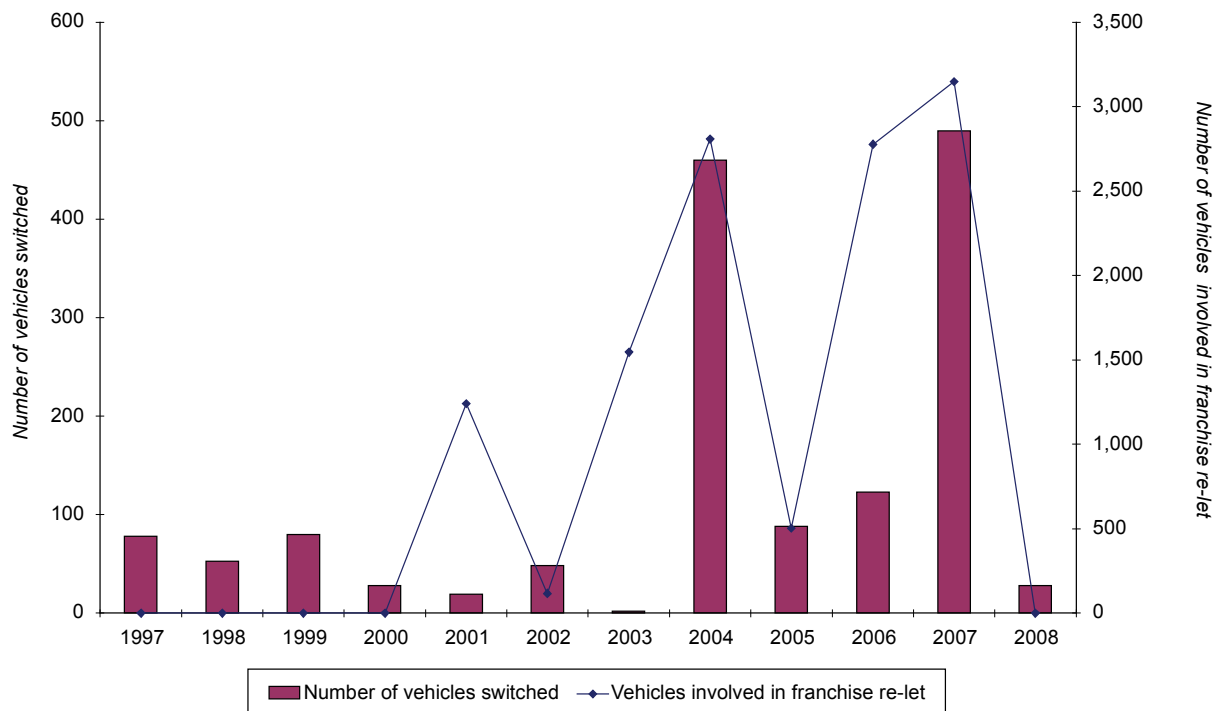
TABLE 2 **Switching between privatization and the end of 2008**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
<i>Instances of switching</i>													
Cascade	0	1	1	4	0	4	1	9	3	6	22	1	52
Other	<u>3</u>	<u>3</u>	<u>2</u>	<u>0</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>5</u>	<u>1</u>	<u>7</u>	<u>1</u>	<u>26</u>
Total instances of switching	3	4	3	4	2	5	1	10	8	7	29	2	78
<i>Switched vehicles</i>													
Cascade	0	39	40	28	0	39	2	446	40	115	460	20	1,229
Other	<u>78</u>	<u>14</u>	<u>40</u>	<u>0</u>	<u>19</u>	<u>9</u>	<u>0</u>	<u>14</u>	<u>48</u>	<u>8</u>	<u>30</u>	<u>8</u>	<u>268</u>
Total switched vehicles	78	53	80	28	19	48	2	460	88	123	490	28	1,497
Total capacity	10,718	10,583	10,557	10,517	10,857	11,382	11,800	12,123	11,703	11,725	11,602	11,474	
Per cent of total capacity	0.7	0.5	0.8	0.3	0.2	0.4	0.0	3.8	0.8	1.0	4.2	0.2	

Source: CC analysis.

FIGURE 4

Switching since privatization by number of vehicles and compared against the number of vehicles involved in franchise re-lets



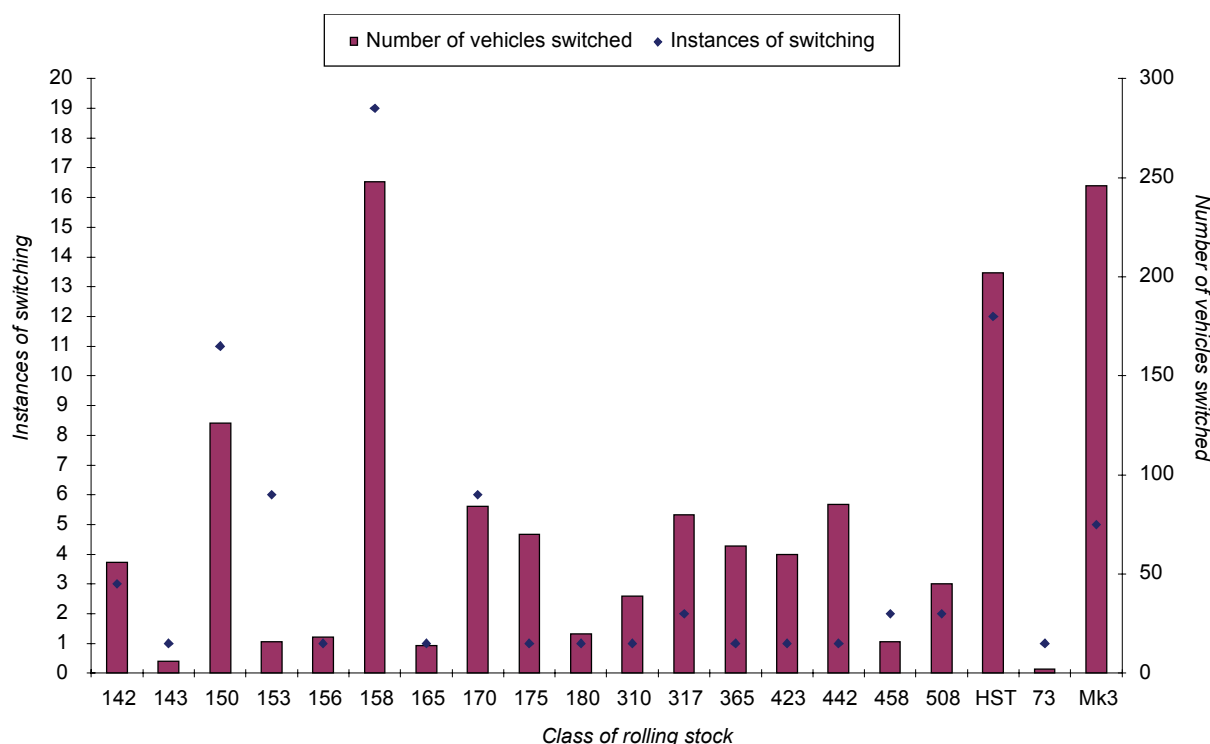
Source: CC analysis of ROSCO data.

Rolling stock classes being switched

- Figure 5 shows both the instances of switching of each rolling stock class and the number of vehicles that have been switched since privatization.

FIGURE 5

Classes of rolling stock switched since privatization



Source: CC analysis of ROSCO data.

20. Figure 5 shows the 20 classes of used rolling stock involved in switching since privatization.¹⁸ Figure 5 shows that the four most common classes switched in terms of the number of vehicles were Classes 150, 158, HSTs and Mark III coaches. These four classes of rolling stock account for 60 per cent of the 78 instances of switching and 55 per cent in terms of the number of vehicles.
21. The largest displacements in a cascade have included:
 - (a) displacement of Mark III coaching stock by Virgin Pendolinos (Class 390s);
 - (b) displacement of HSTs by Virgin Voyagers (Class 220s and 221s); and
 - (c) displacement of DMUs (notably Classes 150 and 158) by new Class 170 Turbostars and by Class 185s on TransPennine Express.
22. There has been a much lower level of switching of used EMU rolling stock than for DMUs and loco-hauled rolling stock. This is primarily attributable to the Mark I replacement programme, whereby large parts of the EMU fleet have been directly replaced by new rolling stock to meet the requirements of safety legislation, which has reduced the potential for switching of used EMU rolling stock.

¹⁸This does not include classes that have been displaced off-lease and not yet been re-leased.

Switching between ROSCOs

23. Our definition of a switch includes situations where a TOC obtains alternative rolling stock which is owned by the same ROSCO that owned the incumbent rolling stock. We recognize that these switches are not directly relevant to our competitive assessment. Therefore we examined the extent to which switches caused TOCs to lease alternative rolling stock owned by a ROSCO different from the owner of the incumbent rolling stock.
24. Tables 3 and 4 show the extent of switching between ROSCOs. The rows in each table show the ROSCO that owned the rolling stock that was displaced to another franchise. The columns show the ROSCO that owned any incoming rolling stock. So, for example, where Angel's rolling stock has been moved from one franchise to another as a result of Porterbrook's new rolling stock, this appears in Table 3 as one instance of switching in the row for Angel and the column for Porterbrook. The instances of 'no displacement', where rolling stock was not displaced by any incoming rolling stock, relate to the movements caused by short-term loans and changes in demand.

TABLE 3 Instances of switching between ROSCOs since privatization

Instances of switching Owner of displaced rolling stock	Owner of incoming rolling stock					Total	Total switching between ROSCOs
	Angel	HSBC	Porterbrook	Voyager	No displacement		
Angel	6	2	12	2	10	32	16
HSBC	1	1	1	0	0	3	2
Porterbrook	6	7	16	5	9	43	18
Total	13	10	29	7	19	78	36
Angel (%)	8	3	15	3	13	41	
HSBC (%)	1	1	1	0	0	4	
Porterbrook (%)	8	9	21	6	12	55	

Source: CC analysis.

TABLE 4 Number of vehicles switched between ROSCOs since privatization

Number of vehicles Owner of displaced rolling stock	Owner of incoming rolling stock					Total	Vehicles owned at end 2008	Proportion of vehicles owned that have been switched %
	Angel	HSBC	Porterbrook	Voyager	No displacement			
Angel	86	76	229	23	143	557	4,122	14
HSBC	60	64	39	0	0	163	3,380	5
Porterbrook	266	188	147	141	35	777	3,620	21
Total	412	328	415	164	178	1,497		
Angel (%)	6	5	15	2	10	37		
HSBC (%)	4	4	3	0	0	11		
Porterbrook (%)	18	13	10	9	2	52		

Source: CC analysis.

25. Tables 3 and 4 show that in terms of both number of instances and number of vehicles, Porterbrook has experienced the most displacement of its vehicles to another franchise, with HSBC the least.¹⁹ HSBC has been affected by only three

¹⁹The extent of these percentages is to a large extent driven by the type of rolling stock that has been displaced by new rolling stock, which is the main reason why Angel and Porterbrook cover so many of the displaced vehicles relative to HSBC. The lesser involvement of HSBC in switching appears related to the fact that at privatization it owned no DMUs and its portfolio was much more heavily weighted towards EMUs, which were directly replaced as part of the Mark 1 replacement programme. If

instances of displacement of its used rolling stock to another franchise, compared with 32 for Angel and 43 for Porterbrook. We can set the number of vehicles displaced in the context of total vehicle numbers currently owned by each ROSCO. Table 4 shows that displaced used rolling stock amounts to 14 per cent of Angel's end 2008 capacity, 5 per cent for HSBC and 21 per cent for Porterbrook.

26. We can use Table 4 to calculate that 23 instances²⁰ (covering 297 vehicles) involved switching between rolling stock owned by the same ROSCO (for example, from Angel rolling stock to Angel rolling stock), and 19 instances (covering 178 vehicles) involved no displacement. Therefore only 36 instances (covering 1,022 vehicles) have involved a switch from one ROSCO to another.

Switching expected as a result of the DfT's Rolling Stock Plan

27. The DfT's Rolling Stock Plan published in January 2008 included examples of the displacements that it anticipated should take place as a result of the planned introduction of 1,300 additional vehicles to the network in order to meet the objectives of its HLOS. An update to the Plan was published in July 2008 which provided some further details of the delivery, timing and distribution of this additional capacity. The DfT noted that development of the Rolling Stock Plan with the industry is continuing and that 'the final outcome could well be different' from the details provided in the July 2008 update. The Rolling Stock Plan shows a high level of involvement of the DfT in the process of orchestrating future cascades of rolling stock.
28. In the DfT's HLOS Industry Seminar presentation in February 2008, the major cascades proposed were as follows:²¹
- (a) HSBC's 148 Class 321 vehicles, to be displaced from West Midlands by new Class 350s, are proposed to be displaced to C2C, First Capital Connect and National Express East Anglia.
 - (b) The introduction of new Class 172s on West Midlands will lead to 72 Class 150 vehicles coming off-lease from West Midlands. The Rolling Stock Plan proposes that these are displaced to First Great Western and Northern.
 - (c) Class 323 units could be displaced from Northern to London Midland following a new rolling stock procurement on Northern.
 - (d) Class 313 vehicles, to be displaced from London Overground by new Class 378s, could be moved to First Capital Connect.
 - (e) The introduction of Class 172s on London Overground should lead to a small number of Class 150 vehicles being displaced to Northern or First Greater Western.
29. The DfT noted that it was still in discussions with operators about the exact numbers and types of vehicles which will be cascaded and the numbers set out in paragraph 28 are based on its view at that time, which may change as consensus emerges.

direct switching as part of the Mark I replacement programme were included here, this would create a different picture, with EMUs owned by HSBC being substantially affected.

²⁰23 instances comprise 6 Angel to Angel, 1 HSBC to HSBC and 16 Porterbrook to Porterbrook.

²¹Other cascades are also expected in 2009. For example, [X].

Switching costs

30. In some markets, customers face obstacles to switching between suppliers. The existence of such switching costs can be one factor that affects the level of switching. Switching costs may decrease customers' incentives to search for, or switch to, alternatives that could meet their needs. In this section, we therefore consider the switching costs, by which we mean all of the extra incidental costs of obtaining alternative rolling stock to replace incumbent rolling stock.
31. TOCs told us about a range of costs that may be incurred when leasing alternative rolling stock (in addition to the cost of the lease for the alternative rolling stock):²²
 - (a) livery change;
 - (b) interior modifications;
 - (c) route acceptance;
 - (d) staff training;
 - (e) maintenance facilities;
 - (f) risk of introducing different rolling stock on a franchise; and
 - (g) short-term lease premiums on incumbent rolling stock.
32. The DfT, TOCs and ROSCOs commented on and in some cases quantified the costs listed in paragraph 31. We identify the circumstances in which a TOC may incur such costs, for example, distinguishing between costs that occur when switching to alternative used and new rolling stock. We also identify which costs are not switching costs because they would be incurred irrespective of whether a new franchisee is switching to alternative rolling stock.
33. In assessing switching costs, we noted that the franchise system means that in some cases the TOC that switches to alternative rolling stock may incur the switching cost in its entirety (particularly in the case of new rolling stock) even though future franchisees may benefit from the rolling stock having been moved to that franchise, (assuming that the rolling stock remains best suited to the operational requirements of the franchise).

Livery change

34. At the start of a franchise the rolling stock that is used on the franchise will usually need to undergo a livery change in order to fit with the franchisee's branding. Livery changes include repaints or vinyls and changes in signage and logos.²³ The cost of the livery change is borne by the TOC.
35. Estimates for the costs of livery changes provided by the parties and third parties varied slightly. Angel and HSBC submitted that indicative estimates for these costs were between £[10,000] and £[12,000] per vehicle and between £[5,000–£10,000] and £[10,000–£15,000] per vehicle respectively. Three TOCs [§<] provided estimates

²²We do not consider costs such as conversion to dual voltage as this is relevant for our consideration of substitutes. Here we focus on whether there is a cost to switching to technically and operationally suitable alternatives.

²³Repaints are often conducted as part of a planned maintenance examination in order to minimize the amount of time that the rolling stock is out of service.

of £2,000 to £12,000 per vehicle, with application of vinyls cheaper than repainting. The DfT stated that a livery change costs £10,000 to £12,000 per vehicle and would take three to four days.

36. Three TOCs [X] suggested that a livery change was desirable, not essential, and one TOC [X] stated a livery change may be essential if vehicles need to be coupled together. Angel, HSBC and Porterbrook all considered that this was not an essential switching cost.
37. Where there is a change of franchisee, livery changes are generally required irrespective of switching such that these costs are not specifically related to switching.²⁴ In contrast, where an incumbent franchisee wins a new franchise the livery change needed for alternative rolling stock will be a switching cost.

Interior modifications

38. When a TOC switches to alternative rolling stock it may also require some interior modifications to the alternative rolling stock so that it meets exactly its operational requirements.
39. Most interior modifications are small-scale and tend to include seat coverings, new flooring and internal painting—generally, non-engineering-based modifications that improve the interior of the train and adapt the interior of the train to the TOC's branding.²⁵
40. Three TOCs ([X]) submitted costs and these ranged widely from £2,000 to £75,000 per vehicle. HSBC submitted that interior modifications can cost around £[20,000–£40,000] per unit depending on the specification, and Porterbrook gave a cost estimate of £[20,000] per vehicle. The DfT stated that small-scale modifications amounted to around £50,000 per vehicle and might take up to 12 months depending on the size of fleet. Depending on the nature of the modification these costs may be incorporated into the capital rental that the TOC pays the ROSCO.
41. We noted that these costs only occur when switching to alternative used rolling stock and not when switching to new rolling stock. These costs are also periodically incurred whether or not a new franchisee chooses to change rolling stock (for example, when the incumbent rolling stock is refurbished). It is therefore not a cost unique to switching.

Route Acceptance

42. Network Rail's Route Acceptance Process requires specific assessments to confirm the compatibility of rolling stock with the route infrastructure. Successful acceptance is confirmed by means of formal certificates. Rolling stock is restricted in operation to those routes for which certification has been granted.
43. Placing an estimate on the costs of Route Acceptance is difficult because the costs can vary significantly depending on how similar the alternative rolling stock is to the incumbent rolling stock. The more that certain characteristics of the alternative rolling stock (such as weight and structure gauge) differ from those of the incumbent rolling stock, the more extensive are the approval procedures that need completing.

²⁴This will not be the case if the incumbent franchisee wins the franchise re-let.

²⁵More extensive modifications might cost up to £250,000. However, such extensive modifications relate more to issues of substitutability than switching costs.

44. Network Rail told us that the Route Acceptance Process cost £100,000 for a relatively standard shape of rolling stock, and £1–£1.5 million for a new class of rolling stock that had not previously been built and tested.²⁶ Network Rail's own guidance states that the process for complete introduction of a new train can take up to three to four years. Network Rail told us that it works in parallel with manufacturing timescales and does not delay vehicle introduction.
45. One TOC [redacted] submitted that it would not switch rolling stock when there was a need for a new Route Acceptance Process.
46. Porterbrook submitted that the Route Acceptance Process is only required in exceptional circumstances, for instance [redacted].
47. We noted that Route Acceptance costs are only relevant when the class of alternative rolling stock (either used or new) has not been used on the relevant routes in the franchise before (or has not already received Route Acceptance).

Staff training

48. A TOC may need to train staff to operate (and, potentially, maintain) any alternative rolling stock that is of a different class to the rolling stock it currently operates. The DfT suggested that costs and timing were dependent on the scale of switching but it might take up to a year to train staff. Three TOCs commented on these costs providing very wide ranges of cost estimates faced by the TOC:
 - (a) National Express submitted that there would be a one-off cost of £775,000 for learning how to operate a new train.²⁷
 - (b) Serco Ned suggested that minimal training was required for maintenance staff when rolling stock was similar to that displaced (£10,000 to £20,000). In the case of crew training, this could be more significant depending upon the number of drivers involved, and could be in the order of one-off costs of £50,000.
 - (c) Stagecoach submitted that the costs could vary widely, and that the process of staff training could take up to six weeks.
49. We found that staff training is a relevant cost of switching when the TOC switches to a class of rolling stock of which it has no prior experience.

Maintenance facilities

50. Three TOCs ([redacted]) cited costs of setting up maintenance facilities (for example, holding stocks of different spares) as critical when switching to alternative rolling stock of a type that is not currently operating on the franchise. Porterbrook considered that the costs of establishing maintenance and service support facilities were essential costs if the rolling stock being transferred was different from other rolling stock currently operating on the franchise. The cost and timing of setting up maintenance facilities are highly variable as temporary solutions are also possible. We considered that maintenance facility costs are relevant when a TOC takes on a

²⁶These costs are a cost per application for Route Acceptance. National Express told the ORR that simple clearance would cost £25,000 to £50,000 compared with £100,000 if complicated.

²⁷£775,000 is based on the following—£175 x 2 (driver and relief) x 5 days x 300 drivers + £125 x 2 (conductor and relief) x 5 days x 200 conductors.

different class of rolling stock but not if the switch is to alternative rolling stock of a class already in operation on that franchise.²⁸

Risk of taking on different rolling stock

51. An additional 'cost' of switching to alternative used or new rolling stock is the risk associated with changing rolling stock. If the alternative class of rolling stock either has not been used by a TOC before, or has not been used on the route, then there is a risk that the rolling stock will not perform to the required standards, for instance as a result of difficulties encountered in maintaining the rolling stock to the required level of reliability. This risk may well appear greater than many of the other switching costs above because TOCs must meet the deliverability criteria laid out in franchise specifications, or risk significant financial penalties or loss of the franchise. A TOC may take such risks into account in deciding whether or not to switch to a different class of rolling stock, especially if it is not familiar with such rolling stock from having used it on other franchises or the rolling stock is untested on the franchise. Angel noted that this problem has not prevented switching to new rolling stock notwithstanding that similar difficulties may arise where new rolling stock is introduced.

Short-term lease premiums

52. Switching to alternative rolling stock that is not available at the franchise start date²⁹ will require the TOC to lease rolling stock (usually the incumbent rolling stock) for the interim period on a short-term lease.³⁰ A price premium (ie above the price of a lease for the length of the franchise) is included in a short-term lease and this may constitute a switching cost.
53. A number of TOCs told us that short-term lease premiums were one of a number of switching costs. We reviewed bid submissions to identify any cases where franchise bidders stated that the short-term lease premium on incumbent rolling stock affected their choice of rolling stock. We found two cases where a short-term lease premium was explicitly mentioned by bidders as a reason for not proposing to take alternative rolling stock:
- (a) South Western 2007 franchise—MTR/National Express stated that 'the likely introductory timescales of 6 to 12 months (for switching to Class 458s) together mean that the Class 442 fleet would have to be retained for a time at the start of the franchise' and 'the short term lease costs quoted to SWT (South West Trains) for the Class 442 fleet are significantly increased compared to those for a full franchise term'.
 - (b) On the East Midlands franchise, National Express's bid stated that 'new-build DMUs (Class 172s) would not be available until 2010 at the earliest. This would mean more expensive short-term leases for a temporary alternative fleet until they are introduced to service'.
54. In each case, we noted that, although the short-term lease premium was clearly a factor in determining the bidder's choice of rolling stock, other factors also played a part.

²⁸For this purpose, different classes may in some cases be regarded as substantially the same. For example, Class 159 trains closely resemble Class 158 trains.

²⁹For example, new rolling stock that will take time to be built or used rolling stock that is leased on another franchise for a period after the franchise start date.

³⁰We defined a short-term lease as one that lasts for less than the full length of the franchise.

55. The ROSCOs told us that the main factor determining the short-term lease premium applied was their assessment of residual value risk.
56. Angel submitted that there was a downward-sloping relationship between the length of leases and value at risk. Longer leases meant that fleets had fewer re-leasing points, and therefore the value of residual risk was lower. Shorter leases led to a higher frequency of releasing and therefore had a higher risk which required a higher premium to offset it. Angel also submitted that this was a common feature of operating leasing markets (for example, the US real estate and global aircraft leasing markets). Angel added that short-term leases increased systematic variance of lease rentals over the lifetime of the rolling stock and so the whole lifetime required return was higher for short-term leases than for long-term leases.
57. Angel told us that it had tended to apply a sliding scale of rental adjustments based on a [X] lease being [X] per cent higher than an equivalent long-term lease and [X] leases being [X] per cent higher respectively. It stated that these percentages had been adjusted in isolated instances to take account of exceptional circumstances.
58. Angel submitted that the premium currently applied to a short-term lease did not compensate it for the losses it would incur if the risk should crystallize and that fleet, or part of that fleet, went off-lease for any period of time. Instead, the premium applied is designed to provide protection from stranding risk arising from short-term leasing across the portfolio.
59. HSBC told us that short-term lease premiums were required because increased residual value risks exceeded the lower credit risks generated by the shorter lease period. HSBC commented that any premium on a short-term lease might be offset by the benefit to a TOC of fixing a price on new rolling stock.
60. Porterbrook submitted that the pricing of each short-term lease was assessed on a case-by-case basis, but that the main commercial factors affecting the rentals on short-term leases were those listed in its Code of Practice.³¹ Porterbrook submitted that it did not necessarily or usually charge a premium on short-term leases. It added that the extent to which a short-term lease premium was charged on a particular lease normally depended on the characteristics of the rolling stock and market conditions. The data which we considered, as shown in Figure 6, showed that Porterbrook had on occasions quoted premiums for short-term leases.
61. To assess the extent of premiums on short-term leases we compared the available data where a ROSCO has quoted a short-term lease rental and a lease rental for the term of the franchise. We found 38 instances where a quoted short-term lease capital rental and full-term lease capital rental were available on the same fleet of rolling stock.³²

³¹The main commercial factors associated with leases of different durations which are listed in the Codes of Practice are as follows: the contracted proportion of the future anticipated life of the rolling stock; the likely demand for the particular rolling stock at the end of the proposed leased period; the extent to which the payments during the term of the lease facilitate raising finance for the relevant rolling stock; the reduced residual value risk when rolling stock is leased for longer periods of time; the reduced marketing costs associated with leases which are re-let on fewer occasions; and whether the lease and franchise are coterminous.


³²We therefore only compare short-term lease capital rental offers and long-term lease capital rental offers where they are a like-for-like comparison. Not all the short-term lease premiums we examined were contracted as a number were only quotes from the ROSCOs to the TOCs. Porterbrook noted that only three of its ten leases in our data were actually signed. It also added that we had not included some cases where no premium was charged. The example submitted by Porterbrook of an 18-month extension to the Central franchise lease agreements in 2006 did not fit with our definition of a short-term lease as this was a roll-forward of a lease as part of a franchise extension.

FIGURE 6

Premiums on short-term leases



Source: CC analysis.

62. Our analysis in Figure 6 shows the wide variation in short-term lease premiums. It illustrates that premiums of up to 60 per cent have been applied on some short-term leases and often these premiums have been between 5 and 30 per cent. The short-term lease premium generally increases in relation to the extent that the lease is shorter than the full franchise term.³³
63. We noted that in some cases the ROSCOs have used short-term premiums to deter switching. ³⁴

Summary of switching costs

64. We found that switching costs vary considerably depending on the circumstances involved. Table 5 summarizes the costs of switching, setting out the estimated cost and timing and the circumstances in which the costs may be incurred.

³³We noted that the data set may not include all short-term lease offers made since privatization but that this would not alter the finding that many short-term leases have a premium attached that acts as a switching cost.

³⁴

TABLE 5 Analysis of switching costs

<i>Switching cost</i>	<i>Estimated cost per vehicle</i>	<i>Estimated fixed cost</i>	<i>Timing*</i>	<i>Circumstances in which costs are incurred</i>
Livery change	£10,000	N/A	Less than a week	Incurred where there is a change of franchisee irrespective of whether the incoming TOC changes rolling stock. But if incumbent franchisee is awarded the new franchise, there is a potential switching cost associated with livery change on alternative vehicles.
Interior modifications	Up to £75,000	N/A	Up to two years	Cost may be incurred irrespective of whether switching rolling stock.
Route Acceptance	N/A	£100,000	Up to a year	Necessary if switch to different class of rolling stock without Route Acceptance.
Staff training	N/A	Varies widely	Up to a year	Necessary if switch to different class of rolling stock which TOC has not used before.
Maintenance facilities	N/A	Highly variable as temporary solutions are possible	Highly variable as temporary solutions are possible	Necessary when switching to a different class of rolling stock.
Risk of introducing different rolling stock	N/A	N/A	N/A	Relevant if switch to a different class of rolling stock which has not been used on a route before and/or which TOC has not used before.
Short-term premiums	Up to 60 per cent of monthly capital rental	N/A	N/A	Incurred when leases do not coterminate and a short-term lease is required.

Source: CC analysis of TOC and ROSCO responses to a CC questionnaire.

*Timing based on the DfT's estimates.

Note: N/A = not applicable.