Network Rail's consultation on its methodology for allocating fixed costs to train operators in Control Period 6 (CP6)

22 September 2017

1 Executive summary

1.1 The purpose of this consultation is to set out our proposed methodology for allocating our fixed costs to train operators in Control Period 6 (CP6), and seek stakeholders' views on this approach.

1.2 If introduced for CP6, the new cost allocation methodology discussed in this consultation could have several uses. For example, it could be used to improve the accuracy of the cost allocations in reports such as ORR's UK rail industry financial information document, which aims to provide transparency in relation to rail industry money flows. It could also inform the level of the revenue requirement for Network Rail's newly formed Freight and National Passenger Operator (FNPO) route, which will be set out in Network Rail's Strategic Business Plan (SBP) and ORR's Final Determination.

1.3 The new cost allocation methodology could also inform the level of operators' charges to recover fixed costs in CP6. For example, it could be reflected in the level of fixed track access charges (FTACs) paid by franchised passenger operators, and any charges to recover fixed costs paid by freight and open access operators. However, we stress that setting the level of charges to recover fixed costs is a separate ORR policy decision. We understand that the level of these charges will reflect a range of factors including, consistent with relevant legislation, a 'market can bear' test. Therefore, there is not an automatic link between operators' fixed cost allocations and charges. ORR will shortly be consulting on operators' ability to pay charges to recover fixed costs in CP6[1].

1.4 In this consultation we explain why we are proposing using the new methodology to:

- Allocate our fixed costs to train operators in CP6. We propose that these revised cost allocations should form the maximum level of operators' charges designed to recover our fixed costs.
- Where a market segment (e.g. freight services carrying certain commodities) cannot afford to pay all of the fixed costs attributable to it, inform the level of a transparent grant from funders to Network Rail.

1.5 Like other network industries, a significant proportion of the costs of the rail network are fixed (i.e. do not vary in response to small changes in traffic levels). Historically, we have used a very simple approach to allocate these costs to train services. This approach to allocating costs was based on operators' share of traffic (e.g. train miles) on a Network Rail operating route. We are seeking to improve upon this approach for CP6 in order to provide a more accurate allocation of our fixed costs to train services.

[1] This consultation will be available on ORR's website here: http://orr.gov.uk/rail/economic-regulation/regulation-of-network-rail/price-controls/periodic-review-2018/pr18-consultations/consultation-on-changes-to-charges-and-contractual-incentives

1.6 We employed an independent costing expert, Brockley Consulting, to review the current cost allocation approach and suggest improvements. This review commenced in late 2014 and has been carried out in a transparent way, with regular presentations to industry colleagues. More information in relation to the review carried out by Brockley Consulting is available on our website[2].

1.7 This consultation focuses on the methodology for allocating fixed costs to train operators in CP6. However, because CP6 numbers are not yet available the analysis included in this consultation is based on ORR's 2013 Periodic Review (PR13) Final Determination (i.e. they are forecast CP5 numbers rather than forecast CP6 numbers). Therefore, whilst they show how fixed costs would have been allocated between operators in CP5 had this methodology been used, they do not necessarily indicate how operators' fixed cost allocations may change in CP6. In addition, because the cost allocations are based on PR13 data they use train operators' names as at the time of ORR's Final Determination in October 2013, and do not reflect any changes resulting from the subsequent re-franchising process.

1.8 The potential impact on the level of cost allocations as a result of updating them to reflect 2018 Periodic Review (PR18) cost data is beyond the scope of this consultation. Our cost forecasts for CP6 and beyond will not be finalised until our SBP is published and, therefore, we are not able to reflect this information in our consultation.

1.9 We understand that stakeholders will be very interested in any changes to the level of charges as a result of incorporating PR18 cost data. For this reason we intend to publish our conclusions on this consultation, incorporating PR18 cost data and draft CP6 price lists in February 2018.

1.10 ORR will, ultimately, determine the level and structure of charges for CP6 in its Final Determination, due to be published in October 2018. It will publish a minded-to decision as part of its Draft Determination, due to be published in June 2018.

1.11 As part of its June 2017 charging conclusions document ORR stated that it would continue to work towards levying charges to recover Network Rail's fixed costs on all operators (including open access operators), subject to a market can bear test. It said that it would potentially base the level of these charges designed to recover fixed costs on our new cost allocation methodology, developed by Brockley Consulting. In its conclusions document ORR also stated that it would merge the two existing freight mark-ups (freight only line charge and freight specific charge) into one charge.

[2] Available at: https://www.networkrail.co.uk/running-the-railway/long-term-planning/periodic-review-2018-pr18/

Summary of indicative revised cost allocations

1.12 The table, below, summarises the impact on operators' fixed cost allocations (i.e. total costs less the income that we receive through variable charges and other sources) of implementing the revised cost allocation methodology developed by Brockley Consulting, which we are proposing to use to inform the allocation of fixed costs to operators for CP6. The revised cost allocations also reflect a 'funding adjustment' which we have applied in order to maintain the current funding arrangements between Governments. These arrangements reflect the fact that Transport Scotland (TS) specifies and funds the Scottish rail network, and Department for Transport (DfT) the England and Wales network. These allocations are shown in the table, below, relative to the current cost allocation approach which underpins franchised passenger operators' FTACs.

1.13 The values in the table, below, are based on cost data from ORR's PR13 Final Determination, in particular ORR's October 2013 forecast of our 2018/19 cost base. It is also important to note that the, above, values represent changes in the level of operators' cost allocations and not, necessarily, changes in their level of charges. There are good reasons for not always reflecting cost allocations in charges (e.g. the environmental benefits generated by rail freight), and relevant legislation makes provision for a 'market can bear' test. The final levels of FTACs in CP5 were also reduced to reflect the level of network grant that we receive from funders.

Table 1: Overall impact on operators' fixed cost allocations

Allocation of fixed costs	FTAC Method £m	Proposed New Method After Funding Adjustment £m	Impact £m	Impact %
Arriva Trains Wales	212	224	12	6%
c2c	50	47	(3)	(6%)
Chiltern Railways	52	64	12	23%
CrossCountry	245	186	(58)	(24%)
East Coast Main Line Rail	305	145	(160)	(53%)
East Midlands Trains	198	177	(21)	(10%)
Eurostar	-	0	0	-
First Capital Connect	267	177	(91)	(34%)
First Great Western	426	355	(71)	(17%)
Freight	-	566	566	-
Grand Central	-	16	16	-
Heathrow Express	-	6	6	-
Hull Trains	-	11	11	-
London Midland	174	150	(24)	(14%)
LOROL	44	46	2	5%
LUL Bakerloo	-	7	7	-
LUL District (Richmond)	-	3	3	-
Merseyrail	32	52	21	66%
Miscellaneous Passenger (demin)[3]	-	30	30	-
National Express East Anglia	280	245	(35)	(13%)
Nexus	-	7	7	-
North Yorkshire Moors Railway	-	2	2	-
Northern Rail	263	394	131	50%
ScotRail	517	456	(62)	(12%)
South West Trains	279	263	(16)	(6%)
Southeastern	238	276	38	16%
Southern	258	216	(42)	(16%)
Transpennine Express	147	140	(7)	(5%)
Virgin Trains	478	202	(276)	(58%)
West Coast Railway	-	2	2	-
Total	4,464	4,464	0	0%

[3] This category is used to summarise traffic associated with infrequent passenger journeys (e.g. where a train operates on a line once a year). It is a modelling simplification for the purpose traffic forecasting.

1.14 Brockley Consulting also estimated what proportion of our fixed costs would be avoidable in the long-run and what proportion would continue to be incurred even at minimal traffic levels. The table, below, shows that on average 27% of our fixed costs are avoidable in the long-run, assuming that we were to maintain existing network connectivity (i.e. by slimming the network down but not removing any journey possibilities).

1.15 These avoidable cost estimates are important because one should not assume that all of the costs which can be allocated to an operator are capable of being avoided if that operator ceased to run. As the table, below, shows on average only about a quarter of the fixed costs allocated to operators are actually avoidable, assuming current network connectivity is retained. In addition, these costs could only be avoided over a long-run period of time. They would not be avoided immediately if an operator stopped running.

1.16 Please note that the £92m estimate of freight avoidable fixed costs in the table, below, is not comparable to the estimate made by L.E.K. Consulting in PR13 of £42m-£249m per annum. L.E.K. Consulting made the assumption that it was possible to reduce current network connectivity (e.g. permanently close freight-only lines), whereas the Brockley Consulting estimate assumes the retention of current network connectivity, albeit at a lower network capability (i.e. that it is possible to reduce two track lines to single track lines but no part of the current GB rail network would be closed). In addition, unlike the Brockley Consulting methodology, the L.E.K. Consulting analysis did not allocate any common (non-avoidable) costs to freight traffic.

1.17 The values in the table, below, also reflect the funding adjustment described, above, in order to maintain the current funding arrangements between Governments.

Table 2: Estimate of fixed costs allocated to operators which are avoidable in the long-run

Allocation of fixed costs	Avoidable fixed costs after funding adjustment £m	Minimal traffic fixed costs after funding adjustment £m	Total fixed costs after funding adjustment £m	Avoidable fixed costs after funding adjustment %
Arriva Trains Wales	40	184	224	18%
c2c	19	28	47	40%
Chiltern Railways	12	52	64	18%
CrossCountry	42	144	186	23%
East Coast Main Line Rail	47	98	145	33%
East Midlands Trains	53	124	177	30%
Eurostar	(0)	0	0	-
First Capital Connect	73	104	177	41%
First Great Western	43	312	355	12%
Freight	92	474	566	16%
Grand Central	6	10	16	36%
Heathrow Express	2	3	6	41%
Hull Trains	5	6	11	44%
London Midland	43	107	150	29%
LOROL	23	23	46	51%
LUL Bakerloo	3	4	7	50%
LUL District (Richmond)	2	1	3	64%
Merseyrail	27	25	52	51%
Miscellaneous Passenger (demin)[4]	8	21	30	28%
National Express East Anglia	73	172	245	30%
Nexus	2	5	7	27%
North Yorkshire Moors Railway	0	2	2	7%
Northern Rail	107	287	394	27%
ScotRail	113	342	456	25%
South West Trains	90	173	263	34%
Southeastern	119	158	276	43%
Southern	70	146	216	33%
Transpennine Express	45	94	140	32%
Virgin Trains	33	168	202	17%
West Coast Railway	(0)	2	2	-
Total	1,195	3,269	4,464	27%

[4] This category is used to summarise traffic associated with infrequent passenger journeys (e.g. where a train operates on a line once a year). It is a modelling simplification for the purpose traffic forecasting.

Responding to this consultation

1.18 We kindly request responses to this consultation by close of play 17 November 2017. This is an eight week consultation. Please could you send responses to this consultation to RegulatoryEconomics@networkrail.co.uk.

1.19 The questions set out in this consultation are summarised in Appendix 1. We would welcome your views in relation to these questions, in particular.

1.20 We intend to publish responses to this consultation on our website. Therefore, if you consider any part of your response to this consultation to be confidential, please state this clearly and provide a non-confidential version of your response suitable for publication.

1.21 Thank you for taking the time to read and respond to this consultation.

Engagement and next steps

1.22 As noted, above, we have sought to conduct the review by Brockley Consulting in a transparent way and have presented the work to industry on a regular basis. The main forum for engagement to date has been through the Rail Delivery Group (RDG) PR18 Charges and Incentives, Route Regulation and Outputs Working Group. This engagement is summarised in Appendix 2.

1.23 This consultation represents the continuation of this industry engagement process. We will also be seeking stakeholders' views at the RDG PR18 Charges and Incentives, Route regulation and Outputs Working Group meeting on 9 October 2017, where we will discuss this consultation in more detail. If you have not already received an invitation to this meeting and would like to attend please contact Bill Davidson (Bill.Davidson@raildeliverygroup.com).

1.24 The principal future milestones for this periodic review, relevant to establishing the structure of charges designed to recover our fixed costs for CP6, are summarised in the table, below. However, as noted in ORR's recent consultation on improving our renewals efficiency[5], the periodic review timetable is currently being reviewed given the delay in finalising the Governments' funding decisions. Therefore, it is possible that the dates shown below may change.

[5] Available at: http://www.orr.gov.uk/rail/consultations/open-consultations/consultation-on-improving-network-rails-renewals-efficiency.

Table 3: Future periodic review milestones

Key milestone	Information	Date
ORR's further consultation on charges and contractual incentives	Will include ORR's initial view in relation to which market segments can afford to pay charges designed to recover fixed costs and the potential structure of these charges in CP6	September 2017
Network Rail's SBP	Network Rail's CP6 business plan, including cost forecasts	December 2017
Network Rail's conclusions on this consultation	Network Rail's conclusions on its proposed approach to allocating its infrastructure costs to train operators, calculating fixed cost charges, and draft CP6 price lists reflecting PR18 cost data	February 2018
ORR's Draft Determination	ORR's minded-to view in relation to setting structure of charges for CP6, including its views on our February 2018 conclusions	June 2018
ORR's Final Determination	ORR's final view which will ultimately set the structure of charges for CP6	October 2018

1.25 The remainder of this document is structured as follows:

- Safety;
- Background;
- The Brockley Consulting review;
- Impact on operators;
- Transparent grant;
- Approach to adjusting FTACs for franchise re-mappings; and
- Conclusions.

2 Safety

2.1 In preparing this consultation we have considered whether our proposals have the potential to affect the safety of the network. We do not consider that the proposals set out in in this consultation are likely to impact the safety of the network. The reason for this is that the revised cost allocation methodology developed by Brockley Consulting would only change the allocation of costs and, potentially, the distribution of charges between operators. It would not reduce the amount of funding that we receive to manage the network safely. If, however, upon reading this consultation you consider that any of our proposals are likely to impact safety, please let us know.

Question one: Do you consider any of the proposals set out in this consultation document are likely to impact the safety of the network?

3 Background

Current fixed cost allocations

3.1 At present, neither Network Rail nor any other industry body allocate the fixed costs of the GB rail network to all train services on a consistent basis. This means that it is not clear which train services cause our fixed costs to be incurred, and it is not possible to make meaningful like-for-like comparisons between different types of services.

3.2 There are, however, examples at present where our fixed costs have been allocated to a subset of train operators, using different approaches. These are summarised, below:

- **FTACs**: Our fixed costs are allocated to train services as part of the process of calculating FTACs. However, as part of this process we only allocate costs to franchised passenger operators, on the basis that it is only these operators that pay FTACs. No fixed costs are allocated to freight or open access operators as part of this process because these operators do not pay FTACs. The cost allocation methodology is also very simple, allocating costs at Network Rail operating route-level based on operators' shares of traffic on each operating route. It is this cost allocation methodology which has been reviewed by Brockley Consulting, resulting in suggested improvements for CP6.

- **ORR's UK rail industry financial information document**: This document aims to provide transparency in relation to the money flows across the entire GB rail industry (i.e. including passengers, operators, rolling stock companies and infrastructure managers). As part of this document our costs are allocated to franchised passenger operators but not freight or open access operators. The allocation methodology is also very simple, using slightly different metrics to those used to calculate FTACs.

- **L.E.K.'s analysis of freight avoidable costs**: As part of PR13 Network Rail commissioned L.E.K. Consulting to estimate our freight avoidable costs (i.e. the total costs that we would avoid in the long-run in the absence of freight traffic). ORR used this cost estimate to inform the level of freight mark-ups during CP5. This analysis did not calculate avoidable cost estimates for passenger operators, and as noted, above, the avoidable cost estimate that it generated is not directly comparable to that developed by Brockley Consulting.

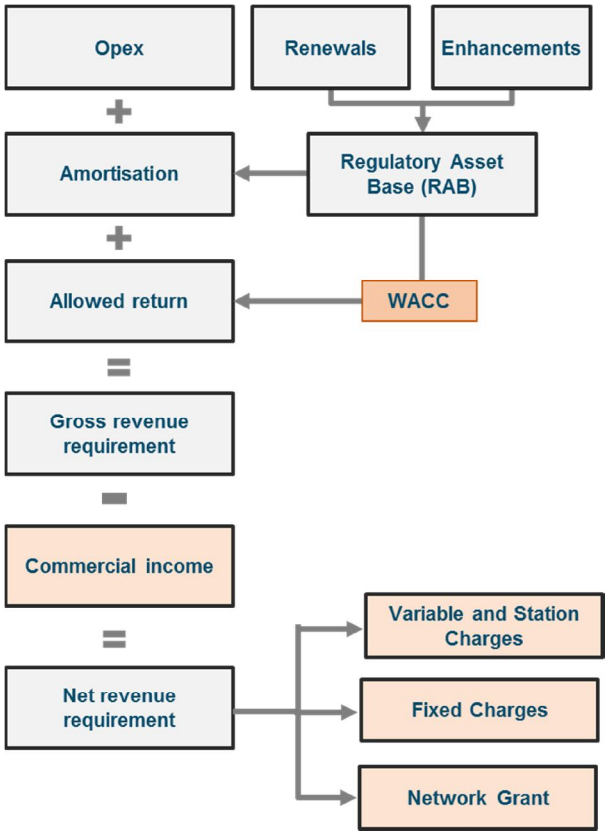
Current charges designed to recover fixed costs

3.3 As part of the current CP5 charging framework, franchised passenger operators and freight operators pay the following track access charges explicitly designed to recover our fixed costs:

- **FTACs**. Paid by franchised passenger operators only. In 2016/17 we received £392m of income through FTACs and £4,380m in grant income from Governments in lieu of access charges.

- **The Freight Only Line Charge and Freight Specific Charge**. Paid by freight operators and only by those segments of the freight market deemed by ORR as being able to contribute towards our fixed costs. In CP5 these charges were paid by freight traffic carrying coal for the electricity supply industry, spent nuclear fuel and iron ore. In 2016/17 we received £1m of income through the Freight Only Line Charge/Freight Specific Charge. The level of these charges was ultimately set based on ORR's view of how much these market segments could afford to contribute towards our fixed costs.

3.4 The, above, charges are designed to recover our fixed costs. Charges designed to recover fixed costs represent the 'balancing figure' in our overall revenue requirement shown, below. This means that we recover through charges designed to recover fixed costs (or network grant in lieu of access charges) any costs associated with running the railway not recovered through other sources of income (e.g. variable charges, station charges or commercial income).



ORR's view on charges designed to recover fixed costs in CP6

3.5 As part of PR18, ORR has held two consultations which consider charges to recover fixed costs – its May 2016 initial consultation document and its December 2016 charges consultation. ORR also wrote to us in August 2016 regarding the cost attribution work that we commissioned Brockley Consulting to carry out. We have summarised the views expressed by ORR in relation to charges designed to recover fixed costs, below:

- **ORR's August 2016 letter supporting the continuation of the cost attribution work that we commissioned.** ORR stated that it considered that our work could potentially deliver significant benefits in terms of greater transparency around network costs and provide useful information to decision makers, including Network Rail, operators and funders. Reflecting this, it was supportive of us continuing our work in this area.

- **ORR's November 2016 conclusions on its initial consultation document**: ORR stated that it would prioritise the reform of FTACs so that open access operators make an appropriate contribution towards our fixed costs. Consistent with this, it would continue working with DfT on introducing a public service obligation (PSO) levy for open access operators. It also committed to updating its analysis of the extent to which different passenger and freight market segments can bear higher charges to recover fixed costs.

- **ORR's June 2017 conclusions on its December 2016 charging consultation**. ORR stated it would continue to work towards levying charges to recover fixed costs on all operators (including open access operators), subject to a market can bear test and potentially based on our new cost allocation methodology. However, it also said that before implementing the new methodology it would consider responses to this consultation, and the potential impacts on customers of using our new cost allocation methodology. ORR also stated that it will be merging the two existing freight mark-ups (the Freight Only Line Charge and Freight Specific Charge) into a single charge.

4 The Brockley Consulting review

4.1 We have employed an independent costing expert, Brockley Consulting, to review the current cost allocation approach which underpins FTACs and suggest improvements. This review commenced in late 2014 and has been carried out in a transparent way, with regular presentations to industry colleagues. More information in relation to the review carried out by Brockley Consulting is available on our website here.

4.2 We propose reflecting the revised cost allocation methodology developed by Brockley Consulting in operators' CP6 fixed cost allocations.

4.3 We propose that these revised cost allocations should form the maximum level of operators' charges designed to recover fixed costs. However, we stress that this is a separate ORR policy decision. The level of charges designed to recover fixed costs set by ORR will reflect a range of factors, including a market can bear test consistent with relevant legislation, in addition to cost allocations. There is, therefore, not an automatic link between operators' fixed cost allocations and their charges. ORR will shortly be consulting on operators' ability to pay charges designed to recover fixed costs in CP6[6].

4.4 The cost attribution work carried out by Brockley Consulting comprised three stages:

- **Stage one**: a qualitative review of the current approach to cost allocation in the GB rail industry and potential opportunities for improvement. This report is available on our website[7].

- **Stage two**: A pilot study based on Network Rail's Wales operating route which assessed the feasibility of implementing the potential opportunities for improvement identified in stage one. This report is available on our website[8].

- **Stage three**: A roll-out of the Wales pilot study methodology developed in stage two to the rest of GB, making further incremental improvements where possible. This report is also available on our website[9].

4.5 We describe the main differences between the revised cost allocation methodology developed by Brockley Consulting and the current cost allocation methodology used to calculate franchised passenger operators FTACs, below. These changes are explained in more detail in the Brockley Consulting reports available on our website.

[6] This consultation will be available on ORR's website here: http://orr.gov.uk/rail/economic-regulation/regulation-of-network-rail/price-controls/periodic-review-2018/pr18-consultations/consultation-on-changes-to-charges-and-contractual-incentives
[7] Available at: https://16cbgt3sbwr8204sf92da3xxc5m-wpengine.netdna-ssl.com/wp-content/uploads/2017/01/Brockley-Consulting-review-of-cost-attribution-and-cost-allocation-approaches.pdf
[8] Available at:https://16cbgt3sbwr8204sf92da3xxc5m-wpengine.netdna-ssl.com/wp-content/uploads/2017/01/Brockley-Consulting-Cost-allocation-pilot-study-Modelling-and-results.pdf
[9] Available at:https://www.networkrail.co.uk/running-the-railway/long-term-planning/periodic-review-2018-pr18/

Question two: Do you agree with our proposals:

a) To use the new methodology developed by Brockley Consulting to allocate our fixed costs to operators in CP6?

b) That these revised cost allocations should form the maximum level of operators' fixed cost charges?

Approach to calculating operators' fixed cost allocations

4.6 Calculating operators' fixed cost allocations comprises the following two key steps:

- **Allocating train operators their share of our total costs** (i.e. variable 'wear and tear' costs which change with traffic levels as well as fixed costs).

- **Deducting from this allocation of total costs the income that we receive in order to arrive at operators' fixed cost allocations.** The income that we receive includes variable charges from train operators (e.g. variable usage charges) and income from other sources (e.g. rent from retail space in railway arches).

4.7 Because the deduction of income from our total costs is the final step in the fixed costs calculation process, the revisions to the FTAC cost allocation methodology described below are applied to our total cost base of c. £6.6bn per annum, rather than just our fixed cost base of c. £4.5bn per annum. Each revision in this section is applied sequentially (i.e. it assumes the adoption of the preceding revision(s) as a starting point). The final overall impact of these revisions on operators fixed cost allocations are shown in Section 5, below.

4.8 The values in the tables in this section are based on cost data from ORR's PR13 Final Determination, in particular its October 2013 forecast of our cost base in 2018/19. Therefore, whilst they show how fixed costs would have been allocated between operators in CP5 had this methodology been used, they do not necessarily indicate how operators' fixed cost allocations may change in CP6. In addition, because the cost allocations are based on PR13 data they use operators' names as at the time of ORR's Final Determination in October 2013, and do not reflect any changes resulting from the subsequent re-franchising process.

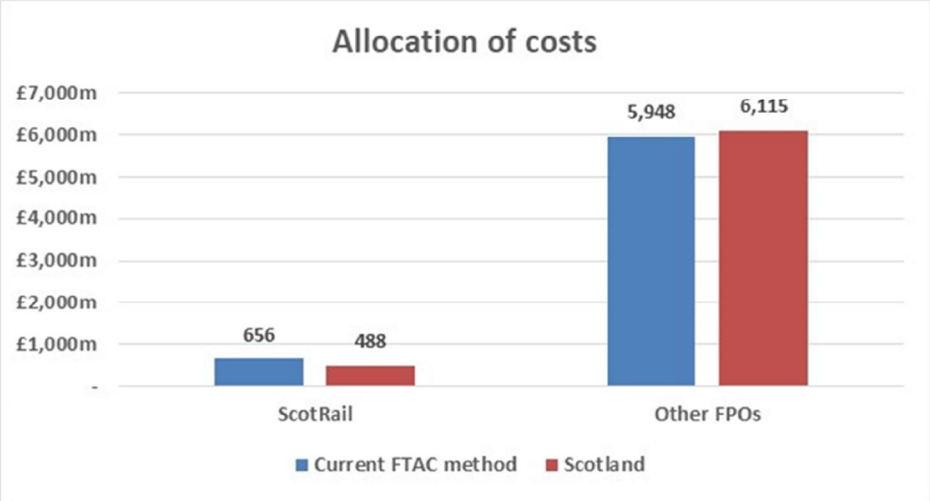
4.9 It is also important to note that the values, below, represent changes in the level of operators' cost allocations and not, necessarily, changes in their level of charges. There are good reasons for not always reflecting cost allocations in charges (e.g. the environmental benefits generated by rail freight), and relevant legislation makes provision for a 'market can bear' test. The final levels of FTACs in CP5 were also reduced to reflect the level of network grant that we receive from funders.

Allocation of Scotland route costs on a consistent basis

4.10 Prior to the 2008 periodic review (PR08) Network Rail received a single GB-wide funding settlement. As part of PR08, following the Railways Act 2005, a decision was made to have separate regulatory and funding settlements for England and Wales, and Scotland. Since then DfT has funded the fixed costs of the England and Wales network and TS the fixed costs of the Scottish network. This reflects the fact that the respective networks are specified by different funders.

4.11 From a charging perspective, this has meant that the fixed costs of the England and Wales network have been recovered through the FTACs of franchised passenger services specified by DfT. Similarly, the fixed costs of the network in Scotland have been recovered only from franchised services specified by TS.

4.12 Brockley Consulting notes in its report that, from a cost causation perspective, there seems no clear reason to treat services specified by DfT that run in Scotland differently to those specified by TS. The costs that a train imposes on the network are driven by its usage of and impact on the infrastructure (e.g. its mileage, speed and tonnage)[10].



4.13 Brockley Consulting estimated that 'unwinding' the current approach to allocating fixed costs to cross-border services would result in a net reduction in total costs allocated to ScotRail of 26%, with these costs instead being recovered from train operators with franchises specified by DfT. This is shown in the graph, above.

4.14 However, for CP6 we are not proposing to change the current approach to allocating costs across the funded boundary. Therefore, this work will have no impact on the overall level of the funding settlement for Scotland, or England and Wales. Unless funders agree a change to the current arrangements, or ORR implement change through the periodic

[10] 'A new method for allocating network fixed costs: Report for Network Rail', Brockley Consulting (2017), p. 4. Available at: https://www.networkrail.co.uk/running-the-railway/long-term-planning/periodic-review-2018-pr18/.

review process, we will continue to not allocate any of the fixed costs of the Scotland route to train operators with franchises specified by DfT. Likewise, unless funders agree a change to the current arrangements, or ORR implement change, we will continue to not allocate any of the fixed costs of routes in England and Wales to franchised train operators with franchises specified by TS. We explain our proposed approach to maintaining the current funding arrangements in the 'funding adjustment' section, below. Please note that the figures in the rest of this section reflect an 'unwound' approach, before the application of the 'funding adjustment'.

Allocation of costs to all operators

4.15 The current CP5 FTAC methodology only allocates fixed costs to franchised passenger operators. It does not allocate any fixed costs to freight operators or open access passenger operators on the grounds that they do not currently pay FTACs.

4.16 Under the cost allocation methodology developed by Brockley Consulting, our costs are allocated to all operators. Brockley Consulting considers that, from a cost allocation perspective, there is no reason to distinguish between different types of operator. The cost that an operator imposes on the network depends on where that operator runs and the type of rolling stock that it uses. The costs attributable to an operator are not affected by the relationship between that operator and Government (e.g. whether the service is franchised) or whether that operator is transporting passengers or freight.

4.17 The impact of this revision to the current FTAC methodology is set out in the table, below. As expected, the main change is an increased cost allocation to freight and open access operators (who currently do not receive one), offset by a reduction in costs allocated to franchised passenger operators.

Table 4: Impact of allocating total costs to all operators

Allocation of costs	Scotland £m	All services £m	Impact £m	Impact %
Arriva Trains Wales	261	204	(57)	(22%)
c2c	80	70	(10)	(13%)
Chiltern Railways	84	71	(13)	(16%)
CrossCountry	342	273	(69)	(20%)
East Coast Main Line Rail	503	371	(132)	(26%)
East Midlands Trains	277	208	(69)	(25%)
Eurostar	-	1	1	-
First Capital Connect	419	346	(73)	(17%)
First Great Western	697	577	(120)	(17%)
Freight	-	938	938	-
Grand Central	-	19	19	-
Heathrow Express	-	17	17	-
Hull Trains	-	12	12	-
London Midland	267	227	(40)	(15%)
LOROL	68	62	(6)	(9%)
LUL Bakerloo	-	11	11	-
LUL District (Richmond)	-	3	3	-
Merseyrail	60	53	(7)	(12%)
Miscellaneous Passenger (demin)[11]	-	20	20	-
National Express East Anglia	404	351	(53)	(13%)
Nexus	-	11	11	-
North Yorkshire Moors Railway	-	0	0	-
Northern Rail	357	296	(61)	(17%)
ScotRail	488	418	(71)	(14%)
South West Trains	464	441	(23)	(5%)
Southeastern	425	408	(17)	(4%)
Southern	427	409	(18)	(4%)
Transpennine Express	212	174	(39)	(18%)
Virgin Trains	768	613	(155)	(20%)
West Coast Railway	-	1	1	-
Total	6,604	6,604	-	-

Geographical disaggregation of the cost base

4.18 The current FTAC cost allocation method allocates costs at Network Rail operating route level. This means, for example, that the costs of earthworks are allocated between operators based on their respective share of traffic on the whole operating route. As a result, two operators with equal shares of route traffic would receive the same allocation of earthworks costs, even if they operate over very different terrain, containing a significantly different number of earthworks.

4.19 A more disaggregated approach would lead to cost allocations to operators that better reflect the relative costs of the parts of the network that they use. The revised cost allocation methodology developed by Brockley Consulting achieves this by estimating the costs of circa 3,100 individual track sections, and then allocating the costs of each of these smaller sections to the traffic on each section. The Brockley Consulting methodology still, however, uses the cost of our operating route as a starting point for

[11] This category is used to summarise traffic associated with infrequent passenger journeys (e.g. where a train operates on a line once a year). It is a modelling simplification for the purpose traffic forecasting.

the cost allocation exercise because this is the level at which our accounting systems capture cost data (i.e. the new methodology results in a more accurate allocation of costs within an operating route and not between operating routes).

4.20 The impact of this revision to the current FTAC methodology on train operators is set out in the table, below. The main change is increased cost allocations to trains services on parts of the network that are inherently costly per mile, including difficult terrain and urban areas, with offsetting reductions in areas with easier terrain. It also results in increased cost allocations for train services on quieter route sections, since the costs of these route sections are spread across fewer trains, with offsetting reductions on busier route sections.

Table 5: Impact on total costs of geographical disaggregation

Allocation of costs	All services £m	Disagg. £m	Impact £m	Impact %
Arriva Trains Wales	204	233	30	15%
c2c	70	71	1	2%
Chiltern Railways	71	79	8	11%
CrossCountry	273	255	(18)	(7%)
East Coast Main Line Rail	371	317	(54)	(14%)
East Midlands Trains	208	219	11	5%
Eurostar	1	0	(1)	(66%)
First Capital Connect	346	307	(39)	(11%)
First Great Western	577	577	0	0%
Freight	938	984	46	5%
Grand Central	19	17	(2)	(10%)
Heathrow Express	17	14	(3)	(17%)
Hull Trains	12	12	(0)	(4%)
London Midland	227	226	(1)	(0%)
LOROL	62	59	(3)	(5%)
LUL Bakerloo	11	8	(2)	(20%)
LUL District (Richmond)	3	2	(1)	(18%)
Merseyrail	53	64	11	20%
Miscellaneous Passenger (demin)[12]	20	28	8	39%
National Express East Anglia	351	352	1	0%
Nexus	11	7	(4)	(36%)
North Yorkshire Moors Railway	0	3	3	1,043%
Northern Rail	296	398	102	34%
ScotRail	418	455	37	9%
South West Trains	441	435	(6)	(1%)
Southeastern	408	428	20	5%
Southern	409	391	(18)	(4%)
Transpennine Express	174	180	6	4%
Virgin Trains	613	479	(134)	(22%)
West Coast Railway	1	3	1	115%
Total	6,604	6,604	-	-

[12] This category is used to summarise traffic associated with infrequent passenger journeys (e.g. where a train operates on a line once a year). It is a modelling simplification for the purpose traffic forecasting.

Applying an avoidable cost approach

4.21 As noted, above, the current cost allocation methodology which underpins the calculation of CP5 FTACs allocates costs between operators based on their respective shares of traffic on each of our routes. Brockley Consulting found that although traffic clearly drives costs in general terms, there may not be an explicit linkage between the traffic metrics (e.g. train miles and vehicle miles) used as part of the current FTAC methodology, and the costs that operators cause on the network.

4.22 This contrasts with a Long Run Incremental Cost (LRIC) or "avoidable cost" based approach. Such an approach aims at an objective and transparent allocation of total costs between operators, in a way which reflects long-run patterns of cost causation. An avoidable cost approach considers the removal of various hypothetical "increments" of traffic from current levels, and the costs that would be avoided in the long run by the removal of these increments. This establishes a causal link between traffic increments and costs.

4.23 Avoidable cost approaches can quickly become very complex to implement. Therefore, Brockley Consulting focussed on a small number of avoidable cost calculations, which it considered, following discussion with stakeholders, were likely to be material and possible to implement. It grouped its avoidable cost analysis into the following cost categories:

- **Costs which are avoidable in response to the removal of specific traffic characteristics possessed by some trains ("traffic characteristic avoidable costs")**. For example, fast trains, electric trains and trains with heavy axle loads. These costs are allocated to the trains which have these characteristics and, therefore, cause these costs to be incurred. The modelling estimates that traffic characteristic avoidable costs comprise 18% of our GB cost base.

- **Costs which are avoidable in response to the removal of traffic in general and not the characteristics possessed by the trains ("vanilla traffic avoidable costs")**. Vanilla traffic avoidable costs are allocated equally to all types of trains. The modelling estimates that vanilla traffic avoidable costs comprise 32% of our GB cost base.

- **Remaining costs which would still be incurred even at minimal traffic levels (i.e. one train per day) as long as existing network connectivity is preserved ("minimal traffic costs"**). These costs include both the asset costs and central overhead costs that would be required to support minimal traffic levels. The modelling estimates that the remaining 50% of the GB cost base comprise minimal traffic costs. These costs are in the long-run avoidable only with the loss of network connectivity and are, therefore, allocated to the services which use that connectivity. One way of considering these costs are as connectivity costs (i.e. the minimum cost of connecting the different parts of the country to the GB rail network).

4.24 The impact on train operators of this revision to the current FTAC methodology is set out in the table, below. The most significant impact of implementing the avoidable cost approach is a reduction in the allocation of costs to freight services, offset by increased allocations to passenger services. This is because the traffic metrics used by the current FTAC method place a significant emphasis on tonne miles and therefore on the weight of trains. While the weight of trains is an important factor in driving our short run 'wear and tear' costs, the avoidable cost analysis suggests that weight plays a relatively small role in driving long run avoidable costs.

Table 6: Impact on total costs of applying an avoidable cost approach

Allocation of costs	Disagg. £m	Avoidable £m	Impact £m	Impact %
Arriva Trains Wales	233	269	35	15%
c2c	71	73	2	2%
Chiltern Railways	79	84	6	7%
CrossCountry	255	292	37	14%
East Coast Main Line Rail	317	312	(5)	(2%)
East Midlands Trains	219	248	29	13%
Eurostar	0	0	(0)	(70%)
First Capital Connect	307	309	2	1%
First Great Western	577	604	27	5%
Freight	984	723	(261)	(26%)
Grand Central	17	20	3	16%
Heathrow Express	14	13	(2)	(12%)
Hull Trains	12	14	2	16%
London Midland	226	242	16	7%
LOROL	59	62	3	5%
LUL Bakerloo	8	9	0	3%
LUL District (Richmond)	2	3	0	19%
Merseyrail	64	67	4	6%
Miscellaneous Passenger (demin)[13]	28	34	5	19%
National Express East Anglia	352	359	8	2%
Nexus	7	7	0	3%
North Yorkshire Moors Railway	3	2	(1)	(38%)
Northern Rail	398	450	52	13%
ScotRail	455	481	26	6%
South West Trains	435	441	6	1%
Southeastern	428	439	11	3%
Southern	391	389	(2)	(1%)
Transpennine Express	180	201	21	12%
Virgin Trains	479	457	(23)	(5%)
West Coast Railway	3	2	(0)	(10%)
Total	6,604	6,604	-	-

Different approach to allocating Regulatory Asset Base (RAB) costs

4.25 The RAB is a regulatory mechanism designed to fund our capital expenditure over the long term. The regulatory cost base includes two cost categories related to the RAB:

[13] This category is used to summarise traffic associated with infrequent passenger journeys (e.g. where a train operates on a line once a year). It is a modelling simplification for the purpose traffic forecasting.

- **Amortisation (or depreciation) of the RAB** which historically has been set equal to the forward looking average long-run rate of renewals expenditure. Consistent with this, the current FTAC methodology allocates this cost between asset categories based on forecast long-run rate of renewals expenditure for each asset category.

- **Return on the RAB to compensate us for the 'interest' costs on past enhancements**. The current FTAC methodology also allocates this cost between asset categories based on forecast long-run rate of renewals expenditure for each asset category.

4.26 Brockley Consulting considered the allocation of amortisation costs based on the long-run rate of renewals to be reasonable. However, it considered the allocation of RAB return costs on the same basis to be less reasonable. The reason for this is that it considered that the pattern of forward looking renewal costs across asset categories is unlikely to mirror the pattern of past enhancement expenditure. It proposed instead, where possible, allocating these costs to route sections based on the depreciated replacement costs of the assets on those route sections. It considered depreciated replacement cost to be a reasonable proxy for historical enhancement expenditure.

4.27 The impact of this revision to the current FTAC methodology is set out in the table, below. The principal impact of this revision is a shift in the allocation of the cost base towards civils asset categories and, therefore, trains operating on parts of the network with more civils assets. The reason for this is that civils assets tend to have a relative high upfront cost, however, relatively low average annual renewal costs due to their long asset lives.

Table 7: Impact on total costs of a different approach to allocating the RAB

Allocation of costs	Avoidable £m	RAB return £m	Impact £m	Impact %
Arriva Trains Wales	269	269	1	0%
c2c	73	74	1	2%
Chiltern Railways	84	85	1	1%
CrossCountry	292	280	(12)	(4%)
East Coast Main Line Rail	312	308	(4)	(1%)
East Midlands Trains	248	241	(7)	(3%)
Eurostar	0	0	(0)	(4%)
First Capital Connect	309	314	5	2%
First Great Western	604	605	1	0%
Freight	723	706	(17)	(2%)
Grand Central	20	19	(0)	(2%)
Heathrow Express	13	12	(1)	(8%)
Hull Trains	14	13	(1)	(6%)
London Midland	242	242	(0)	(0%)
LOROL	62	63	1	2%
LUL Bakerloo	9	9	(0)	(0%)
LUL District (Richmond)	3	3	0	9%
Merseyrail	67	69	2	2%
Miscellaneous Passenger (demin)[14]	34	34	0	1%
National Express East Anglia	359	362	3	1%
Nexus	7	7	0	5%
North Yorkshire Moors Railway	2	2	0	12%
Northern Rail	450	480	30	7%
ScotRail	481	487	6	1%
South West Trains	441	442	1	0%
Southeastern	439	443	5	1%
Southern	389	386	(3)	(1%)
Transpennine Express	201	204	2	1%
Virgin Trains	457	442	(15)	(3%)
West Coast Railway	2	3	0	1%
Total	6,604	6,604	-	-

Approach to allocating Income

4.28 As noted, above, calculating operators' fixed cost allocations comprises two key stages:

- Allocating our total costs to train operators; and
- Deducting income from these cost allocations in order to arrive at operators' fixed cost allocations.

4.29 The proposed revisions to the current FTAC cost allocation methodology described, above, focus on stage one of this process (i.e. allocating our total costs to train operators). Below, we set out the revisions proposed by Brockley Consulting to stage two of this process (i.e. the allocation of the income that we receive to train operators in order to arrive at operators' fixed cost allocations).

[14] This category is used to summarise traffic associated with infrequent passenger journeys (e.g. where a train operates on a line once a year). It is a modelling simplification for the purpose traffic forecasting.

4.30 The current FTAC method allocates the income that we receive to franchised passenger operators only on a route-by-route basis, using either vehicle miles or electric train miles. A small number of charges are allocated directly to operators using independently determined inputs which reflect the forecast income from these charges for each operator.

4.31 Brockley Consulting reviewed the approach currently used as part of the FTAC method to allocate income to franchised passenger operators, and where appropriate and proportionate proposed revising the current approach so that it better reflects the sources of income. A summary of the current approach to allocating income under the FTAC method, and the revised approach developed by Brockley Consulting is contained in the table, below.

4.32 Consistent with the approach to cost allocation, Brockley Consulting allocates this income to all operators on a consistent basis (i.e. it extends the allocation process to include freight and open access operators).

Table 8: Revised approach to allocating income

Income source	Current FTAC method	Proposed new method
Variable Usage Charge	Vehicle miles	In line with available forecasts of charges by operator
Capacity Charge[15]	Vehicle miles	
Electric traction charges	Electric train miles	
Electrification Asset Usage Charge	Electric train miles	Electric vehicle miles, reflecting driver of wear and tear on electrification assets
Coal spillage charge[16]	FPO vehicle miles (under FPO only approach)	Coal tonne miles, reflecting structure of charges
Access Charge Supplement	Vehicle miles	Vehicle miles
Franchised station LTCs	Independent inputs	In line with proposed new method's allocation of franchised stations costs
Franchised station leases		
Managed station LTCs	Vehicle miles	In line with proposed new method's allocation of managed stations costs
Managed stations qualifying expenditure	Vehicle miles	Allocated to stations in line with available forecasts, each station allocated to train services in line with proposed new method's allocation of the costs of that station
Property rental income from managed stations	Vehicle miles	In line with proposed new method's allocation of managed stations costs
Property rental income from freight operators	FPO vehicle miles (under FPO only approach)	In line with operating route costs allocated to freight commodities under proposed new method
Other property rental income	Vehicle miles	In line with operating route costs allocated under proposed new method (mirrors treatment of central support costs)
Property sales		
CTRL		
Crossrail and Cardiff Valleys		
Speculative facility charges		
Depot leases	Independent inputs	In line with proposed new method's allocation of depot costs
Station, depot and other facility charges	Independent inputs	Independent inputs
TOC insurance premia		

[15] ORR has confirmed that that this charge will be discontinued for CP6.
[16] ORR has confirmed that that this charge will be discontinued for CP6.

4.33 We consider that the approach to allocating income developed by Brockley Consulting will serve to improve the cost reflectivity of fixed cost allocations, and help to ensure that operators who generate this income receive the benefit of it in their cost allocations.

4.34 The impact of this revision to the current FTAC methodology is set out in the table, below. As expected, the main change is an increased allocation of income to freight and open access operators, offset by a reduction in income allocated to franchised passenger operators.

Table 9: Impact of revised approach to allocating income

Allocation of variable and third party income	Current FTAC method £m	Proposed new method £m	Impact £m	Impact %
Arriva Trains Wales	49	45	(4)	(8%)
c2c	30	27	(3)	(9%)
Chiltern Railways	33	22	(11)	(34%)
CrossCountry	71	79	8	12%
East Coast Main Line Rail	142	142	1	0%
East Midlands Trains	79	63	(16)	(20%)
Eurostar	-	0	0	-
First Capital Connect	152	137	(15)	(10%)
First Great Western	271	250	(21)	(8%)
Freight	-	139	139	-
Grand Central	-	3	3	-
Heathrow Express	-	6	6	-
Hull Trains	-	2	2	-
London Midland	95	93	(2)	(2%)
LOROL	24	17	(7)	(28%)
LUL Bakerloo	-	2	2	-
LUL District (Richmond)	-	1	1	-
Merseyrail	29	17	(12)	(41%)
Miscellaneous Passenger (demin)[17]	-	4	4	-
National Express East Anglia	124	118	(6)	(5%)
Nexus	-	0	0	-
North Yorkshire Moors Railway	-	0	0	-
Northern Rail	95	87	(8)	(8%)
ScotRail	138	97	(41)	(30%)
South West Trains	185	179	(6)	(3%)
Southeastern	187	167	(20)	(11%)
Southern	168	170	2	1%
Transpennine Express	47	53	6	13%
Virgin Trains	220	217	(3)	(2%)
West Coast Railway	-	1	1	-
Total	2,140	2,140	-	-

Question three: Do you agree with the revised methodology developed by Brockley Consulting for allocating income to train operators when calculating their fixed cost allocations?

[17] This category is used to summarise traffic associated with infrequent passenger journeys (e.g. where a train operates on a line once a year). It is a modelling simplification for the purpose traffic forecasting.

Funding adjustment

4.35 As noted, above, we are not proposing to change the current funding arrangements between Governments. Therefore, this work will have no impact on the overall level of the funding settlement for Scotland, or England and Wales. These arrangements were established as part of PR08 following the Railways Act 2005 and reflect the fact that TS specifies and funds the Scottish rail network, and DfT the England and Wales network.

4.36 Unless funders agree a change to the current arrangements, or ORR implement change through the periodic review process, we will continue to not allocate any of the fixed costs of the Scotland route to train operators with franchises specified by DfT. Likewise, unless funders agree a change to the current arrangements, or ORR implement change, we will continue to not allocate any of the fixed costs of routes in England and Wales to franchised train operators with franchises specified by TS.

4.37 We, therefore, make an adjustment to the results of the Brockley Consulting methodology to reflect the existing agreement between funders. We refer to this as the 'funding adjustment'.

Funding adjustment: Scotland

4.38 The table, below, shows the impact of the funding adjustment on the allocation of the Scotland route's fixed costs to operators.

Table 10: Impact of Scotland funding adjustment

Route	Operator	FTAC Method £m (a)	Proposed New Method £m (b)	Funding Adjustment £m (c)	Proposed New Method After Funding Adjustment £m (d)
RSCO	Arriva Trains Wales	-	-	-	-
RSCO	c2c	-	-	-	-
RSCO	Chiltern Railways	-	-	-	-
RSCO	CrossCountry	-	15	(15)	-
RSCO	East Coast Main Line Rail	-	21	(21)	-
RSCO	East Midlands Trains	-	-	-	-
RSCO	Eurostar	-	-	-	-
RSCO	First Capital Connect	-	-	-	-
RSCO	First Great Western	-	-	-	-
RSCO	Freight	-	54	-	54
RSCO	Grand Central	-	-	-	-
RSCO	Heathrow Express	-	-	-	-
RSCO	Hull Trains	-	-	-	-
RSCO	London Midland	-	-	-	-
RSCO	LOROL	-	-	-	-
RSCO	LUL Bakerloo	-	-	-	-
RSCO	LUL District (Richmond)	-	-	-	-
RSCO	Merseyrail	-	-	-	-
RSCO	Miscellaneous Passenger (demin)[18]	-	5	-	5
RSCO	National Express East Anglia	-	-	-	-
RSCO	Nexus	-	-	-	-
RSCO	North Yorkshire Moors Railway	-	-	-	-
RSCO	Northern Rail	-	1	(1)	-
RSCO	ScotRail	517	383	73	456
RSCO	South West Trains	-	-	-	-
RSCO	Southeastern	-	-	-	-
RSCO	Southern	-	-	-	-
RSCO	Transpennine Express	-	11	(11)	-
RSCO	Virgin Trains	-	24	(24)	-
RSCO	West Coast Railway	-	2	-	2

[18] This category is used to summarise traffic associated with infrequent passenger journeys (e.g. where a train operates on a line once a year). It is a modelling simplification for the purpose traffic forecasting.

4.39 Column (a) shows the allocation to operators under the CP5 FTAC method. Column (b) shows the allocation to operators under the methodology developed by Brockley Consulting. Column (c) shows the funding adjustment for each operator. This shows the amount by which the fixed costs allocated to each operator changes, compared with the results of the Brockley Consulting methodology, as a result of reflecting the current agreement between funders. Column (d) shows the allocation of fixed costs to each operator following the funding adjustment.

4.40 Under the current FTAC method, all of the fixed costs of the Scotland route are allocated to ScotRail.

4.41 Brockley Consulting expanded the allocation of fixed costs to all operators (including open access and freight operators) who were forecast to run trains in the Scotland route in 2018/19. The allocation of costs to freight operators, open access operators and DfT-specified franchises therefore increases under the Brockley Consulting approach, with an equal reduction in the costs allocated to ScotRail.

4.42 For the Scottish route, we propose allocating the fixed costs of DfT-specified franchised services that are forecast to run in Scotland to TS-specified franchises.

4.43 The cost allocations shown in this consultation are based on PR13 data. Consequently they use operator names as at the time of ORR's Final Determination in October 2013, and do not reflect any changes resulting from the subsequent re-franchising process. As a result, in the following description of the impact on TS-specified franchised operators we refer to ScotRail. For the avoidance of doubt, the funding adjustment would impact all TS-specified franchised operators' allocation of fixed costs in CP6. This would include the Caledonian Sleeper franchise.

4.44 As can be seen in column (c), above, this results in an increase of c.£73m in the costs allocated to ScotRail compared with the results of the Brockley Consulting work (column (b)).

4.45 In contrast, the allocation of the Scotland route's fixed costs to DfT-specified franchises is reduced to zero, as can be seen in column (d).

4.46 The allocation of fixed costs to open access and freight operators is unaffected by the funding adjustment. Therefore, for freight and open access operators, the value in column (c) is zero.

Funding adjustment: England and Wales

4.47 The example, below, explains how the funding adjustment would impact the allocation of fixed costs to operators on the London North Western route (LNW), where the sleeper service specified by TS operates.

Table 11: Impact of England and Wales (LNW) funding adjustment

Route	Operator	FTAC Method £m (a)	Proposed New Method £m (b)	Funding Adjustment £m (c)	Proposed New Method After Funding Adjustment £m (d)
RLNW	Arriva Trains Wales	24	33	0	33
RLNW	c2c	-	-	-	-
RLNW	Chiltern Railways	52	63	1	63
RLNW	CrossCountry	53	44	0	44
RLNW	East Coast Main Line Rail	-	-	-	-
RLNW	East Midlands Trains	10	11	0	11
RLNW	Eurostar	-	-	-	-
RLNW	First Capital Connect	-	-	-	-
RLNW	First Great Western	1	1	0	1
RLNW	Freight	-	159	-	159
RLNW	Grand Central	-	-	-	-
RLNW	Heathrow Express	-	-	-	-
RLNW	Hull Trains	-	-	-	-
RLNW	London Midland	164	136	1	137
RLNW	LOROL	8	8	0	8
RLNW	LUL Bakerloo	-	7	-	7
RLNW	LUL District (Richmond)	-	0	(0)	0
RLNW	Merseyrail	32	52	0	52
RLNW	Miscellaneous Passenger (demin)[19]	-	9	-	9
RLNW	National Express East Anglia	-	-	-	-
RLNW	Nexus	-	-	-	-
RLNW	North Yorkshire Moors Railway	-	-	-	-
RLNW	Northern Rail	113	195	2	196
RLNW	ScotRail	-	7	(7)	-
RLNW	South West Trains	-	-	-	-
RLNW	Southeastern	-	-	-	-
RLNW	Southern	6	3	0	3
RLNW	Transpennine Express	63	67	1	67
RLNW	Virgin Trains	468	195	2	197
RLNW	West Coast Railway	-	0	-	0

[19] This category is used to summarise traffic associated with infrequent passenger journeys (e.g. where a train operates on a line once a year). It is a modelling simplification for the purpose traffic forecasting.

4.48 Under the current FTAC method (column (a)), only DfT-specified franchised train operators are allocated any fixed costs in LNW. Brockley Consulting expanded the allocation of fixed costs to all operators (including open access and freight operators) who were forecast to run trains in LNW in 2018/19. The resulting cost allocation can be seen in column (b). Compared with the current FTAC methodology (a), the allocation of costs to freight operators, open access operators and TS-specified franchised train operators that are forecast to run services in LNW in 2018/19 therefore increases under the Brockley Consulting approach, with an equal reduction in the costs allocated to DfT-specified franchised train operators.

4.49 The funding adjustment results in the LNW fixed costs allocated to ScotRail being reduced to zero. The c. £7m allocated to ScotRail in column (b) is then allocated to each DfT-specified franchised operator in proportion to their share of the total fixed costs allocated to DfT-specified franchised train operators under the Brockley consulting approach.

4.50 For example, under the Brockley consulting approach, London Midland are allocated c. £136m of fixed costs in LNW, approximately 17% of the fixed costs allocated to DfT-specified franchised operators in that route. Consequently, the funding adjustment allocates c. 17% of the fixed costs attributable to ScotRail in LNW to London Midland. This results in London Midland being allocated an additional c. £1m of fixed costs in LNW, as can be seen in column (c).

5 Impact on operators

5.1 The table, below, shows how fixed cost allocations would have looked for the last year of CP5, if the Brockley Consulting methodology (plus funding adjustment) were applied in PR13, instead of the current approach to calculating FTACs. As noted, above, the values in the table are based on cost data from ORR's PR13 Final Determination, so do not reflect our forecast expenditure in CP6.

Table 12: Overall impact on operators' fixed cost allocations

Allocation of fixed costs	FTAC Method	Proposed New Method After Funding Adjustment	Impact	Impact
	£m	£m	£m	%
Arriva Trains Wales	212	224	12	6%
c2c	50	47	(3)	(6%)
Chiltern Railways	52	64	12	23%
CrossCountry	245	186	(58)	(24%)
East Coast Main Line Rail	305	145	(160)	(53%)
East Midlands Trains	198	177	(21)	(10%)
Eurostar	-	0	0	-
First Capital Connect	267	177	(91)	(34%)
First Great Western	426	355	(71)	(17%)
Freight	-	566	566	-
Grand Central	-	16	16	-
Heathrow Express	-	6	6	-
Hull Trains	-	11	11	-
London Midland	174	150	(24)	(14%)
LOROL	44	46	2	5%
LUL Bakerloo	-	7	7	-
LUL District (Richmond)	-	3	3	-
Merseyrail	32	52	21	66%
Miscellaneous Passenger (demin)[20]	-	30	30	-
National Express East Anglia	280	245	(35)	(13%)
Nexus	-	7	7	-
North Yorkshire Moors Railway	-	2	2	-
Northern Rail	263	394	131	50%
ScotRail	517	456	(62)	(12%)
South West Trains	279	263	(16)	(6%)
Southeastern	238	276	38	16%
Southern	258	216	(42)	(16%)
Transpennine Express	147	140	(7)	(5%)
Virgin Trains	478	202	(276)	(58%)
West Coast Railway	-	2	2	-
Total	4,464	4,464	0	0%

5.2 It is important to note that the values, above, represent changes in the level of operators' cost allocations and not, necessarily, changes in their level of charges. There are good reasons for not always reflecting cost allocations in charges (e.g. the environmental benefits generated by rail freight), and relevant legislation makes provision for a 'market can bear' test. The final

[20] This category is used to summarise traffic associated with infrequent passenger journeys (e.g. where a train operates on a line once a year). It is a modelling simplification for the purpose traffic forecasting.

level of FTACs in CP5 were also reduced to reflect the level of network grant that we receive from funders.

5.3 The change in cost allocations in the table, above, reflect the methodological changes described in Section four, above. In particular, they reflect the following key findings from the Brockley Consulting work:

- **From a cost allocation perspective, there is no reason to distinguish between different types of train operator**. Therefore, costs have been allocated to all train operators, including freight and open access, and not just franchised passenger operators.

- **There are economies of scale on busy routes with a relatively modest number of civils assets (e.g. bridges and earthwork) and switches and crossings (S&C) per mile**, for example, inter-city routes. These economies of scale reflect the fact that the railway is a fixed cost network and on busy routes costs are shared between more trains. This has the effect of lowering the fixed costs allocated to each train that uses these parts of the network. Conversely, routes that have relatively low traffic levels generate higher cost allocations per train.

- **Routes with a significant number of civils assets and/or S&C are inherently costly**, resulting in higher cost allocations to services on these routes. Routes that fall into this category include those passing through challenging terrain and routes into major cities (e.g. London and Birmingham).

Franchised passenger operators

5.4 As set out in the table, above, the impact on individual franchised passenger operators of introducing the new Brockley Consulting cost allocation methodology (plus funding adjustment) varies significantly. However, franchised passenger operators are not exposed to changes in the level of FTACs resulting from the periodic review process. Funders aim to hold franchisees harmless to changes in the level of charges through their franchise agreements. This means that there is unlikely to be a direct financial impact on this group of train operators if FTACs were updated to reflect the revised cost allocation methodology developed by Brockley Consulting.

5.5 However, we are mindful of the fact that changes in the amount of costs attributable to train services can affect the perceived premium/subsidy associated with services. This would be the case if, for example, these revised cost allocations were to be reflected in ORR's GB rail industry financials document, which combines infrastructure costs with train operators' costs and revenues in order to generate an overall view in relation to the distribution of subsidy within the rail industry.

5.6 In terms of changes for specific operators shown in the Table 12, above:

- Virgin Trains and East Coast see the largest reduction (c. 50%-60%) in fixed costs attributable to them under the new methodology. This reflects the economies of scale on busy intercity routes.

- There is a significant increase in fixed costs attributable to Northern Rail (c. 50%). This reflects the fact that Northern use a lot of routes with relatively low traffic levels which have a high cost per train, and routes into urban areas which are inherently expensive per mile due to the increased number of civils assets and S&C.

- Operators of a diversified range of services such as First Great Western and London Midland only see modest changes in their cost allocations (c. 15%). This reflects the portfolio effect of these operators operating a range of different services (e.g. intercity and suburban services).

Freight operators

5.7 Table 12, above, shows an increase in the fixed costs attributable to freight operators from £0m to £566m p.a. The current cost allocation of £0m reflects the fact that freight operators do not pay FTACs.

5.8 Unlike franchised passenger operators, freight operators are exposed to changes in the level of charges at periodic review process. However, we reiterate that the above value is a cost allocation. It is for ORR to decide the extent to which freight operators can afford to pay towards our fixed costs. As set out in more detail, below, to the extent to which ORR considers that the freight market is unable to fund our fixed costs, we are proposing that this is reflected in a transparent grant from funders to Network Rail.

5.9 We also want to be clear that the £566m is a fully allocated cost number and should not be interpreted as the fixed costs that could be avoided in the absence of rail freight. As set out in Table 13, below, Brockley Consulting's estimate of freight avoidable fixed costs is significantly lower at £92m per year. Both of these cost estimates are far lower than the £1.6 billion per annum[21] of productivity gains that rail freight is estimated to deliver for UK businesses.

Open access operators

5.10 Like freight operators, open access operators are not currently allocated any fixed costs under the existing FTAC methodology. These cost allocations rise to £16m and £11m per annum for Grand Central and Hull trains respectively under the revised methodology developed by Brockley Consulting.

[21] Source: https://www.raildeliverygroup.com/about-us/publications.html?task=file.download&id=287.

5.11 To reiterate, the above values are cost allocations only and we are not proposing that these allocations are reflected in operators' charges. ORR will conduct a 'market can bear' test and then decide the extent to which open access operators can afford to pay towards our fixed costs. To the extent that ORR considers that open access operators are unable to bear these costs, we are proposing that they are reflected in a transparent grant from funders to Network Rail.

Question four: Do you have any comments on the overall change in cost allocations shown in Table 12, above?

Brockley Consulting avoidable cost estimates

5.12 Brockley Consulting also estimated what proportion of our fixed costs would be avoidable in the long-run and what proportion would continue to be incurred even at minimal traffic levels. The table, below, shows that on average 27% of our fixed costs are avoidable in the long-run, assuming that we were to maintain existing network connectivity.

5.13 These avoidable cost estimates are important because one should not assume that all of the costs which can be allocated to an operator are capable of being avoided if that operator ceased to run. As the table, below, shows on average only about a quarter of the fixed costs allocated to operators are actually avoidable, assuming current network connectivity is retained. These avoidable cost estimates are also only avoidable over a long-run period of time, and could not be avoided immediately if an operator stopped running.

5.14 Please note that the £92m estimate of freight avoidable fixed costs in the table, below, is not comparable to the estimate made by L.E.K. Consulting in PR13 of £42m-£249m per annum. L.E.K. Consulting made the assumption that it was possible to reduce current network connectivity (e.g. permanently close freight-only lines), whereas the Brockley Consulting estimate assumes the retention of current network connectivity, albeit at a lower network capability (i.e. it is possible to reduce two track lines to single track lines but no part of the current GB rail network would be closed). In addition, unlike the Brockley Consulting methodology, the L.E.K. Consulting analysis did not allocate any common (non-avoidable) costs to freight traffic.

Table 13: Estimate of fixed costs allocated to operators which are avoidable in the long-run

Allocation of fixed costs	Avoidable fixed costs after funding adjustment £m	Minimal traffic fixed costs after funding adjustment £m	Total fixed costs after funding adjustment £m	Avoidable fixed costs after funding adjustment %
Arriva Trains Wales	40	184	224	18%
c2c	19	28	47	40%
Chiltern Railways	12	52	64	18%
CrossCountry	42	144	186	23%
East Coast Main Line Rail	47	98	145	33%
East Midlands Trains	53	124	177	30%
Eurostar	(0)	0	0	-
First Capital Connect	73	104	177	41%
First Great Western	43	312	355	12%
Freight	92	474	566	16%
Grand Central	6	10	16	36%
Heathrow Express	2	3	6	41%
Hull Trains	5	6	11	44%
London Midland	43	107	150	29%
LOROL	23	23	46	51%
LUL Bakerloo	3	4	7	50%
LUL District (Richmond)	2	1	3	64%
Merseyrail	27	25	52	51%
Miscellaneous Passenger (demin)[22]	8	21	30	28%
National Express East Anglia	73	172	245	30%
Nexus	2	5	7	27%
North Yorkshire Moors Railway	0	2	2	7%
Northern Rail	107	287	394	27%
ScotRail	113	342	456	25%
South West Trains	90	173	263	34%
Southeastern	119	158	276	43%
Southern	70	146	216	33%
Transpennine Express	45	94	140	32%
Virgin Trains	33	168	202	17%
West Coast Railway	(0)	2	2	-
Total	1,195	3,269	4,464	27%

[22] This category is used to summarise traffic associated with infrequent passenger journeys (e.g. where a train operates on a line once a year). It is a modelling simplification for the purpose traffic forecasting.

6 Transparent grant

6.1 For CP6, when setting the level of charges designed to recover our fixed costs ORR will have regard to a number of factors, including operators' cost allocations. However, it will also take into account operators' ability to pay charges designed to recover fixed costs. Where an operator cannot afford to pay charges designed to recover fixed costs, relevant legislation prevents these costs being charged to them.

6.2 Where a market segment (e.g. freight services carrying certain commodities) cannot afford to pay all of the fixed costs attributable to it, we consider that this should be explicitly recognised in the form of a transparent grant from funders to Network Rail. At present, the costs attributable to these services are not transparent and are included in franchised passenger operators FTACs (or the grant income received by Network Rail in lieu of access charges). This approach does not make clear the actual distribution of fixed costs within the industry. If we want to maximise the benefits from the new and more accurate allocation of fixed costs, we consider that it should be used consistently across the industry, including in relation to the allocation of network grant.

6.3 We consider that there are good reasons for not automatically reflecting fixed costs allocations in operators' charges. However, we do not consider this to be a reason for not allocating fixed costs in a consistent and transparent way across the GB rail industry. We consider that a better understanding of which train services cause fixed costs to be incurred has the potential to improve industry decision making. For example, it may be useful to funders when they are considering enhancements or franchise specifications. We also consider, as a point of principle, that as an industry we should want to better understand our costs and the distribution of funding and subsidy across the network.

Question five: Do you agree that we should be transparent about which train operators are responsible for our fixed costs?

7 Approach to adjusting FTACs for franchise re-mappings

7.1 Like other track access charges, FTACs are determined prior to the start of each control period. However, there are certain circumstances during a control period which necessitate the recalibration of FTACs. For example, where train services transfer from one franchised passenger operator to another as part of the re-franchising process. In this situation where services are transferred between operators, the operator 'receiving' the additional services should also 'receive' the share of fixed costs/charges associated with these services.

7.2 We propose retaining a simple approach to calculating these adjustments to FTACs, when services transfer between operators. In summary, we propose adjusting operators' FTACs in proportion to the share of services that have been transferred. However, for CP6 we propose basing any adjustments on the proportion of train miles that have transferred, rather than the proportion of vehicle miles, which was used in CP5. This reflects the fact that train length does not drive the level of our fixed costs. Our proposed approach is described in more detail in Appendix 4.

Question six: Do you agree with our proposal to retain a simple approach to adjusting FTACs for franchise re-mappings but based on train miles, rather than vehicle miles?

8 Conclusions

8.1 In summary, as part of this consultation we are proposing the following:

- Revising our current cost allocation methodology, which franchised passenger FTACs are based on, to reflect the revised methodology which we commissioned Brockley Consulting to develop. Brockley Consulting proposes the following principal refinements to the current FTAC methodology:
    - Allocation of Scotland route costs on a consistent basis with routes in England and Wales;
    - Allocating our fixed costs to all train operators (i.e. franchised passenger, freight, open access and charter operators);
    - Estimating our costs at track section level and then allocating the estimated cost of each track to the services travelling on that track section;
    - Applying an avoidable cost approach to cost allocation, where possible; and
    - Allocating RAB 'interest' costs in each route between asset types based on the depreciated replacement cost of those asset types, rather than the long-run renewal cost.
- Continuing to reflect the agreement between funders for allocating FTACs across the funded boundary through a 'funding adjustment', applied to the results of the Brockley Consulting methodology.
- A transparent grant from Government to Network Rail where ORR considers that a market segment cannot afford to pay the fixed costs attributable to it.
- Retaining a simple approach to adjusting operators' FTACs when services transfer between operators during the control period.

Appendix 1 – Consultation Questions

Question One: Do you consider any of the proposals set out in this consultation document are likely to impact the safety of the network?

Question two: Do you agree with our proposals:

a) To use the new methodology developed by Brockley Consulting to allocate our fixed costs to operators in CP6?

b) That these revised cost allocations should form the maximum level of operators' fixed cost charges?

Question three: Do you agree with the revised methodology developed by Brockley Consulting for allocating income to train operators when calculating their fixed cost allocations?

Question four: Do you have any comments on the overall change in cost allocations shown in Table 12, above?

Question five: Do you agree that we should be transparent about which train operators are responsible for our fixed costs?

Question six: Do you agree with our proposal to retain a simple approach to adjusting FTACs for franchise re-mappings but based on train miles, rather than vehicle miles?

Appendix 2 – Brockley Consulting industry engagement

Date	Event	Stakeholder	Subject
22 Sep 2014	Meeting	ORR	Gathering views on cost allocation
13 Nov 2014	Meeting	ORR	Gathering views on cost allocation
25 Nov 2014	Meeting	RDG	Gathering views on cost allocation
9 Mar 2015	Presentation	RDG	Presentation of draft report on cost allocation
31 Mar 2015	Report	All	Review of cost allocation approaches
10 Jun 2015	Meeting	ORR	Approach to Wales pilot study
28 Jul 2015	Presentation	RDG	Approach to Wales pilot study
17 Sep 15	Presentation	RDG	Approach to Wales pilot study
29 Nov 2015	Presentation	DfT	Approach to Wales pilot study
6 Apr 2016	Meeting	ORR	Wales pilot study initial results
18 May 2016	Presentation	Freight operators	Wales pilot study initial results
26 May 2016	Presentation	RDG	Wales pilot study initial results
30 Jun 2016	Report	All	Wales pilot study report
15 Aug 2016	Meeting	RDG	Summary of Wales pilot study report
29 Sep 2016	Presentation	ORR	GB modelling approach and refinements
24 Oct 2016	Presentation	Freight operators	GB modelling approach and refinements
14 Nov 2016	Presentation	RDG	GB modelling approach and refinements
24 Mar 2017	Presentation	ORR	GB modelling initial results
27 Mar 2017	Presentation	RDG	GB modelling initial results
3 Jun 2017	Meeting	ORR	Frequency avoidable costs

Appendix 3 – CP5 cost allocation metrics

Cost type	Cost description	Allocation metric
Renewals	Buildings	Train km
	Civils	EMGTPA km
	E&P: AC distribution & OLE	Electric train km
	E&P: DC distribution & ETE	Electric train km
	Fixed plant	Train km
	IT	Vehicle km
	Wheeled plant and machinery	Vehicle km
	Corporate offices	Vehicle km
	Other renewals	Vehicle km
	Other renewals – faster isolations	Electric train km
	Signalling	Train km
	Telecoms	Train km
	Track	EMGTPA km
Maintenance	Asset Management	Vehicle km
	Civils	EMGTPA km
	E&P: AC distribution & OLE	Electric train km
	E&P: DC distribution & ETE	Electric train km
	Fixed plant	Train km
	Exceptionals	Vehicle km
	Group	Vehicle km
	Indirect	Vehicle km
	National Delivery Service	Vehicle km
	Operations and Customer Services	Vehicle km
	Other	Vehicle km
	Commercial Property	Vehicle km
	Signalling	Train km
	Telecoms	Train km

	Track	EMGTPA km
Non-controllable	Cumulo rates	Vehicle km
	Electric traction	Electric train km
	Other joint industry costs	Vehicle km
Operate	Non Signalling Costs	Train km
	Signalling costs	Train km
Property	Property	Train km
Support	Asset Management	Train km
	Business Services	Train km
	Finance	Train km
	Government and Corporate Affairs	Train km
	Group	Train km
	Human Resources	Train km
	Information Management	Train km
	Insurance	Train km
	Investment Projects	Train km
	National Delivery Service	Train km
	Network Rail Telecom	Train km
	Other corporate functions	Train km
	Group Strategy	Train km
	Property	Train km
	RAMs	Train km
	Utilities	Train km
Income	Traction electricity charge income	Electric train km
	Electrification asset usage charge	Electric train km
	All other income	Vehicle km

Appendix 4 – Approach to adjusting FTACs for franchise re-mappings

We propose retaining a simple approach to calculating these adjustments to FTACs, when services transfer between operators. In summary, we propose adjusting operators' FTACs in proportion to the share of services that have been transferred. However, for CP6 we propose basing any adjustments on the proportion of train miles that have transferred, rather than the proportion of vehicle miles, which was used in CP5. This reflects the fact that train length does not drive the level of our fixed costs.

Adjusting FTACs for the operator 'sending' services

1. Establish the train miles associated with the services that are transferring between operators;

2. If the services transfer mid-way through a year, pro-rate the annual train miles according to the remaining periods of the year;

3. Express the train miles figure for each affected year of the control period as a percentage of the 'sending' operator's total train miles; and

4. For each year, reduce the FTAC of the operator 'sending' the services by the percentage calculated in 3, above.

Adjusting FTACs for the operator 'receiving' services

1. For each year, increase the FTAC of the operator 'receiving' the services by the same amount that the 'sending' operator's FTAC is reduced.

The transfer of services as part of the re-franchising process has the potential to affect multiple operators. Therefore, all operators whose FTACs would be affected by the transfer of services would need to agree to the revision of their FTACs.

Example

The simple example, below, shows how the FTAC adjustment would be calculated for two operators in a single year.

Operator (a)	Forecast train miles of services being transferred for year (b)	Total forecast train miles for year (pre-transfer of services) (b)	Forecast train miles of services being transferred for year as a % of total forecast train miles for year (pre-transfer) (d)	FTAC prior to transfer of services (e)	FTAC after transfer of services (f)	Impact (%) (g)	Impact (h)
A	10	20	50%	50	25	-50%	-25
B	10	50		100	125	25%	25
			Total	**150**	**150**		

In this example, services are transferring from Operator A to Operator B. The train services being transferred is forecast to run for 10 train miles in the year (b), equivalent to 50% of operator A's forecast train miles for the year, prior to the transfer of services (d). As a result, Operator A's FTAC is reduced by 50%.

Operator A, as the operator 'sending' the services, has its FTAC reduced by 50% (g) from 50 to 25, a reduction of 25. Operator B, as the operator 'receiving' the services, has its FTAC increased by 25 – the same amount by which Operator A's FTAC is reduced.