Annex I: Report by BT on Ofcom's approach to beta disaggregation

BT's Response to Question 5.3 on Ofcom's WACC assumptions

1. In this annex we explore in detail each of Ofcom's arguments for further disaggregating the "rest of BT" beta, supported by a report we commissioned from FTI Consulting[1]. We present updated analysis of the BT Group WACC, split into Openreach copper access and rest of BT using the previously adopted approach. The resulting rest of BT WACC to be applied to leased lines services is 10.6%.

Summary

2. In the LLCC Consultation, Ofcom applied a WACC of 10.1% for both the Ethernet and TI baskets, based on a further disaggregation of the previous "rest of BT" WACC into "other UK telecoms", which includes leased lines, and a new "rest of BT" WACC, which would primarily consist of BT's Global Services division. Annex 9 of the LLCC Consultation sets out Ofcom's assessment of BT's cost of capital and the WACC applicable to leased lines services. Annex 10 of the LLCC Consultation contains NERA's report on BT's equity and asset beta. NERA and CEPA provided beta estimates for some comparator companies.

3. There is no robust case for disaggregation. Openreach beta should not remain constant, particularly when the comparator data is updated to a more recent period. The general upward trend that Ofcom observes on the BT Group beta over the last 5 years has continued to reverse somewhat over the last 9 months or so. Therefore the reasons suggested by NERA and used by Ofcom for the increase are no longer convincing.

4. Specifically, since Ofcom last set a cost of capital decision in the 2014 Fixed Access Market Review[2] Ofcom has observed an increase in the estimated beta for BT Group. It postulates that this increase is not attributable to Openreach copper access or leased lines services and thereby justifying keeping the Openreach beta constant, resulting in a rise in the "rest of BT" beta, and therefore requiring disaggregation of the "rest of BT" beta into two further constituent parts. We disagree with this.

5. Firstly, the available evidence does not support each of the hypotheses put forward by NERA and used by Ofcom that they suggest point towards increased risk in other parts of BT. We have commissioned FTI Consulting to provide the supporting evidence. Secondly, Ofcom has not considered the impact of the volatility of the rest of the market on the relative riskiness of BT Group as a whole, which could feed through investors' perceptions regarding the relative riskiness of Openreach copper access. We believe that once the Openreach beta is updated, the issue around a "high" rest of BT beta diminishes, and Ofcom's case for further disaggregation becomes weak.

6. Moreover, even if Ofcom believes, in principle, that there should be a second-stage disaggregation, the evidence presented on the comparator companies for the "other UK telecoms" and BT Global Services parts of "rest of BT" are weak and variable. They do not stand up to scrutiny in the way that the utility betas have done for copper access, and as a result, there is a large amount of judgement to be made in order to arrive at Ofcom's view of the disaggregated

[1] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015

[2] Ofcom, Fixed Access Market Review Statement, 2014. http://stakeholders.ofcom.org.uk/telecoms/ga-scheme/specific-conditions-entitlement/market-power/fixed-access-market-reviews-2014/statement/

WACC for the different lines of business. We note that Ofcom's position regarding the case for further disaggregation and available evidence has changed, and is inconsistent with what it had argued successfully in the 2009 LLCC appeal by Cable & Wireless.[3]

7. Ofcom's proposals for disaggregation in the LLCC Consultation do not set good regulatory precedence for future decisions where further attempts may be made to justify project-specific WACCs. The three criteria for disaggregation set out in Ofcom's 2005 Cost of Capital Statement[4] have not been met and therefore there is no case to support a radical change to Ofcom's established approach.

8. We understand that Ofcom will be updating the WACC parameters for the 2016 BCMR. Our analysis shows that based on current updates as of 30 June 2015, the arguments put forward by Ofcom for further disaggregating the rest of BT beta diminishes and is not supported by the more recent evidence. We believe the appropriate WACC to be applied to leased lines services continue to be the rest of BT WACC based on a two-way disaggregation between Openreach copper access and the rest of BT. This means that pre-tax nominal WACC to be applied to leased lines is 10.6%.

Disaggregation of BT Group beta

9. In the LLCC Consultation, Ofcom sets out its approach for disaggregating BT Group beta into three parts consisting of its copper business (carried out by Openreach), the rest of UK telecoms (i.e. leased lines services provided by BT Wholesale and Openreach, non-copper services provided by Openreach, and downstream services provided by BT Business and BT Consumer), and other services such as those provided by BT Global Services. The approach taken is as follows:

    a. Estimate BT Group's asset beta;

    b. Separate out Openreach copper access beta by reference to UK utility betas as the comparator set, and making assumptions about the weighting applied to copper access. The "rest of BT" acts as a balancing item so that the weighted average is tied back to the BT Group beta;

    c. Consider the appropriateness of the "rest of BT" beta for leased lines services, and conclude that it is not appropriate. As such, a further disaggregation is necessary based on Ofcom's observations about the underlying reasons for changes in BT Group's beta as well as the criteria for disaggregation set out in the 2005 Cost of Capital Statement;

    d. Further disaggregate the "rest of BT" beta into "other UK telecoms" (including leased lines) and the remainder of "rest of BT" (i.e. BT Global Services) by reference to comparator betas and finding a balance of the two that Ofcom considers reasonable.

10. Ofcom then sets out the reasons why it believes that the rest of BT beta is not appropriate for leased lines services:

[3] Competition Commission, *Cable & Wireless UK v Office of Communications*, Case 1112/3/3/09 (at paragraph 4.326): http://www.catribunal.org.uk/files/1112_Cable_Wireless_Determination_300610.pdf
[4] Ofcom Statement, "*Ofcom's approach to risk in the assessment of cost of capital*", August 2005: http://stakeholders.ofcom.org.uk/consultations/cost_capital2/statement/

a. The observed increase in BT's equity beta is mostly attributable to non-regulated services, e.g. BT Global Services or television services;

b. Comparator benchmarking of network utility companies indicates that the Openreach beta is likely to have remained constant over the period; and

c. Comparator benchmarking indicates that BT Global Services is likely to have a higher beta than BT's telecoms services.

11. We set out below why we disagree with the assumptions and reasoning used by Ofcom in reaching the conclusion that further disaggregation is necessary. Ofcom should exercise caution when proposing a change in methodology that is so sensitive to the volatility of the underlying data. Careful consideration should be made in assessing whether the criteria set out in the 2005 Cost of Capital Statement have been adequately met before changing an established approach.

Ofcom's assessment and attribution of risk

12. BT made previous submissions, for example as part of the 2013 Consultation on WLR and LLU charge controls,[5] that it has significant reservations with the principle of disaggregating the BT Group WACC derived from an estimate to an Openreach copper access beta based on a range of utility comparators. We still hold the view that this places unreasonable reliance on indirect data sources, when a direct source, i.e. the observed BT Group beta, is clearly preferable.

13. In disaggregating the BT Group beta, Ofcom must acknowledge that this is an imperfect science. BT Group's equity beta reflects investors' perception of risk of the operating businesses combined, relative to the riskiness of the market as a whole. Any attempt to alter the equity beta or the derived asset beta that is not based on direct market evidence necessarily weakens the predictive usefulness of the betas in question. Indeed, there has been significant volatility around the estimated betas, both for BT Group and comparator companies, such that further inference made on that data is necessarily arbitrary. As such, Ofcom should give a full consideration to the basis on which any disaggregation is carried out.

<u>Attribution of changes in BT Group beta</u>

14. Notwithstanding the above, Ofcom first distinguished between the risks of the Openreach copper business versus the rest of the BT Group businesses in 2005, with a statement made in August that year. At the time, there was significant discussion around beta estimation, and Ofcom commissioned Brattle Group to estimate betas to inform their policy. As part of the consultation process, there were a number of submissions and responses covering the issue of beta risk.

15. Specifically, the Brattle Group paper[6] summarises a point Professor Ian Copper made on behalf of BT:[7] "*Beta measures the relationship between the risk of investing in BT and the risk of investing in the market*. *BT's beta can change if the risk of the market changes or if investor preferences change, even if the business risks faced by BT remain constant*". Brattle Group

[5] BT Group response to Ofcom's 2013 Fixed access market reviews: Approach to setting LLU and WLR Charge Controls Consultation: http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/responses/BT_Group.pdf
[6] The Brattle Group Ltd, Discussion of responses to "Beta analysis of British Telecommunications: Update June 2005", August 2005: http://stakeholders.ofcom.org.uk/binaries/consultations/cost_capital2/statement/beta.pdf
[7] Professor Ian Copper, Annexe 1 to "Ofcom's approach to risk and the assessment of the cost of capital", July 2005.

provided further evidence on this understanding of beta risk[8] and used the example of "flight to quality" by investors towards treasury bonds and income stocks during times of trouble. NERA has often quoted this effect when assessing utility betas.[9]

16. Ofcom makes a number of observations around the increase in BT Group's beta over the last 5 years, and based on the NERA's analysis, hypothesises that this is unlikely to have been driven by Openreach's copper access or leased lines businesses. Specifically, it considers that:

    a. The systematic risk of leased lines is unlikely to have increased since the March 2013 BCMR Statement; and

    b. The possible explanations for the increase in the BT Group asset beta do not appear to relate to leased lines.

17. We note that the question of attributing changes in BT Group's beta to specific activities was considered as part of the 2014 FAMR Statement where TalkTalk made several comments that the increase in BT Group's beta was more likely due to an increase in the risk of other activities such as investment in NGA and sports. Ofcom made the following statement that is not dissimilar to what we are saying in this response, i.e.:

> "*movements in asset betas may be driven by external factors affecting investor perceptions of risk. For example… the decline in the asset beta of BT… is unlikely to have been driven by structural changes in the businesses of these companies… [S]imilarities observed in the movements of their asset betas is driven by external factors such as investors fleeing into companies that they considered "safe" at the time (such as telecoms and utilities). Similarly, the gradual increase observed in the asset betas.. since the end of 2010 may be explained by the market correcting this effect and return to more "normal conditions in light of the improvement of economic conditions elsewhere*".[10]

18. In the LLCC Consultation Ofcom has not demonstrated why it now considers that changes in BT Group's beta is not related to Openreach copper access and leased lines services.

Systematic risk of leased lines

19. We disagree with Ofcom's approach to looking at the systematic risk of leased lines and concluding that this would not have caused a notional leased lines beta to have changed. As stated earlier, beta risk is a measure of risk relative to the rest of the market, so even if one

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[8] "Principles of Corporate Finance (6th Edition)" Brealey and Myers, p. 173, noted that "*If you want to know the contribution of an individual security to the risk of a well-diversified portfolio, it is no good thinking about how risky that investment is if held in isolation – you need to measure its market risk, and that boils down to measuring how sensitive it is to market movements. This sensitivity is called beta*."

[9] See, for example, NERA's report for Water UK in 2009 defines beta as the "*covariance of returns on an asset and returns on the market portfolio, divided by the variance of returns on the market portfolio*": http://www.nera.com/content/dam/nera/publications/archive1/PUB_Cost_of_Capital_PR09_Jan2009_update.pdf; NERA's report for DECC, "*beta estimates for "defensive stocks" like utilities tend to fall during periods of market turmoil… as they become less risky relative to a more volatile market*": https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/267606/NERA_Report_Assessment_of_Change_in_Hurdle_Rates_-_FINAL.pdf

[10] Ofcom, Fixed Access Market Review Statement, 2014, paragraph A14.241

observes unchanging operating conditions for leased lines market as a whole, the case is unlikely to be true for the rest of the market.

20. Moreover, Ofcom believes that the cyclicality of demand is an important factor in determining variations in a project's cash flows and hence its systematic risk, and analyses leased line volume variance and forecasting accuracy to support its argument. As argued by FTI, these are not ideal measures of systematic risk and should not be used in isolation. For example, leased lines volumes provide information about revenues, but not about profitability, and it is the latter that is relevant for returns and therefore beta calculations.

21. In assessing the risk of leased lines services, Ofcom does not consider wider changes in the leased lines market itself which might contribute to a change in systematic risk. For example, Ofcom states that the transition from TI to AI[11] and WDM[12] services would not result "*in significant changes to the systematic risk faced by leased lines business overall since customers are largely substituting one technology for another*".[13] However, this overlooks the impact expressed in the BCMR Consultation on very low bandwidth services,[14] where a number of the Critical National Infrastructure ("CNI") users identified have or are selecting non-leased lines products (and therefore leading to reductions in overall demand at the wholesale level) as part of their migration programme. The changing nature of the market, for example, the proposed introduction of the Dark Fibre remedy, as well as further investment in WDM services by different providers, are all contributing factors to an evaluation of how the market is likely to perform in the future. Ofcom does not consider these and takes a backward-looking approach to assessing future risk.

Reasons driving changes in BT Group's beta

22. Ofcom hypothesises four potential reasons for explaining changes in BT Group's beta over the last 5 years from 2010, based on NERA's report, and concludes that the increase cannot be due to leased lines and Openreach copper access services. Although Ofcom recognises that some factors may have indirectly affected the asset beta of BT's leased lines business, it considers that the volume evidence does not support this view. As stated above, the volume evidence is not indicative of risk.

23. Ofcom's reasoning is not fully supported by alternative sources of evidence suggested by FTI, such as brokers' reports, alternative set of potential comparators and data from the rest of the market. Ofcom considers only the absolute risk of BT's business units without taking into account what is happening in the rest of the market.

24. We explore each of the four reasons put forward by Ofcom below, and have augmented FTI's analysis with further evidence of Ofcom's change in position regarding beta disaggregation at this level. We also note that BT Group beta has been declining since October 2014,[15] and continued

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[11] Alternative Interface, defined in previous BCMRs as Ethernet services up to and including 1Gbit/s.
[12] Wavelength-division multiplex (WDM) technology is used for some very high bandwidth (e.g. above 1Gbit/s) services.
[13] Ofcom, Leased lines charge controls and dark fibre pricing, 2015. Paragraph A9.52.
[14] Ofcom, Business Connectivity Market Review, Very low bandwidth leased lines Consultation, May 2015: http://stakeholders.ofcom.org.uk/binaries/consultations/very-low-bandwidth/summary/VLB_TI_retail_market.pdf
[15] Figure 6, FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015

to decline since the cut-off date of NERA's analysis on 31 January 2015. Given that BT is still involved in each of the activities described above, the arguments put forward are weakened.

Comparability of ICT betas

25. Firstly, Ofcom considers that changes in BT Group's asset beta could be driven by the profit growth of BT Global Services. Indeed there has been significant growth in the EBIDTA from 5% in 2009 to 15% in 2014. Whilst it may be true that this could have contributed to a higher beta, Ofcom's reasoning is down to its comparator set of ICT companies that indicate a higher asset beta than other telecoms connectivity services.

26. We disagree with the selection of the ICT companies used in CEPA's analysis that Ofcom bases its argument on, and with the date range used which is around 3 months longer than the range used in the NERA analysis. We would recommend that the same date range is used for consistency.

27. Ofcom's set of four ICT companies is based on the 2005 report PwC[16] selected as being comparable to BT Global Services previously. Ofcom does not provide a robust basis for the selection of these comparator IT companies, so the analysis suffers from selection bias. As FTI's analysis shows, there is a very wide range of 149 companies that Bloomberg categorises as being in the "ICT sector". The 2 year average asset beta ranges from -0.22 to 1.39, with an average of 0.33, well below BT Group's asset beta calculated over the same period.

28. Indeed, the question of estimating a leased lines beta from the BT Group beta was discussed in the 2009 LLCC appeal by Cable & Wireless. The Competition Commission ("CC") agreed with both BT and Ofcom that a further disaggregation of the rest of BT beta for the leased lines business "*were an unrealistic proposition due to lack of evidence to support specific disaggregation*".[17] We do not consider that the level of evidence has changed, as many of the companies that exist now existed in 2010.

29. As part of the appeal, C&W also suggested the calculation of a disaggregated WACC for ICT business. Whilst Ofcom considered that ICT activities were "*very likely to be riskier than the BT average*",[18] it put forward the following arguments against separating out a beta for BT Global Services:

    a. The conditions for disaggregation were not met in large part due to a lack of disaggregated financial information for ICT;

    b. Reduction in investors' perceptions of value of BT Global Services meant that the effect on rest of BT beta would be minimal;

    c. The five ICT comparators selected by PwC were pure ICT businesses without the telecommunications bias of BT Global Services, and so were not necessarily very close comparators; and

[16] PwC, Disaggregating BT beta, 2005: http://stakeholders.ofcom.org.uk/binaries/consultations/cost_capital2/annexes/disaggregating.pdf
[17] Competition Commission, *Cable & Wireless UK v Office of Communications*, Case 1112/3/3/09 (at paragraph 4.326): http://www.catribunal.org.uk/files/1112_Cable_Wireless_Determination_300610.pdf
[18] Ofcom Defence, Annex C, Cable & Wireless UK v Office of Communications, Case 1112/3/3/09.

d. Need to follow conservative principle used to disaggregate Openreach beta.

30. As summarised by the CC in its Determination[19], Ofcom's use of the 'rest of BT' WACC reflected the "*practical issues regarding a lack of available evidence to support specific disaggregation to estimate individual project specific betas"*, and that it generally takes a "*cautious approach to assessing parameters underlying the cost of capital*", reflecting the principle set out in the 2005 Statement that if there were to be a different beta from the rest of BT, "*this needed to be produced using robust data*". In the LLCC Consultation Ofcom has not presented evidence that the situation has changed significantly since 2009, in particular the choice of the comparator set for BT Global Services. Indeed, the CC agreed that there were "*credible arguments that cast doubt on the difference in nature between BT's ICT business and the comparator group suggested by PwC*" and that the "*specifics of BT's ICT businesses would tend to support a beta at the lower end of the range of plausible ICT betas*"[20]. As stated earlier, Ofcom's choice suffers from selection bias and is not convincing as robust evidence for disaggregation.

31. The CC also summarised Ofcom's Defence that the reason for its ability to disaggregate an Openreach copper access beta as having "*reasonably good evidence that income elasticities of demand for exchange lines are relatively low. The profitability of basic access services is therefore likely to be relatively stable over time, hence the lower "access services" cost of capital"*.[21] However, it concluded that the evidence was insufficient to allow further disaggregation of other services. Although Ofcom presented the variability of demand for the different lines of BT's business, it merely confirmed that Openreach copper access rental volumes varied less than other telecoms services, and that these other telecoms services (i.e. leased lines volumes, call and rental volumes, etc.) were "*broadly similar*"[22]. It does not suggest, however, that there was evidence that the other telecoms services were different to services provided by BT Global Services, and hence warranting a separate beta for the two parts of BT.

32. In response to Ofcom's first observation of the increased profit growth of BT Global Services contributing to the increase in BT Group's beta, Ofcom has not put forward strong evidence that BT Global Services beta is significantly different from BT's other UK telecoms businesses, and ICT comparators used are not sufficiently robust to conclude that the systematic risk of BT Global Services is significantly above other services.

Move into pay TV and sports rights

33. Ofcom also makes a second observation about BT's move into pay TV and sports rights as perhaps having an impact on the group beta, and adopts NERA's hypothesis that entry into a competitive market could have been seen as a risky investment, and that this could have declined since, due to BT gaining a stable market share, engaging in successful right auctions and more recently due to the confirmation of its acquisition of EE[23]. NERA provides some qualitative observations of the changes in BT's rolling 30-day asset betas and the timing of these events.

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[19] Competition Commission, *Cable & Wireless UK v Office of Communications*, Case 1112/3/3/09 (at paragraph 4.287)
[20] Competition Commission, *Cable & Wireless UK v Office of Communications*, Case 1112/3/3/09 (at paragraph 4.326)
[21] Competition Commission, *Cable & Wireless UK v Office of Communications*, Case 1112/3/3/09 (at paragraph 4.289)
[22] Ofcom, Leased lines charge controls and dark fibre pricing, 2015. Paragraph A9.68.
[23] NERA, Estimation of BT's equity and asset beta, 2015 (p.34): http://stakeholders.ofcom.org.uk/binaries/consultations/llcc-dark-fibre/annexes/NERA_final_report.pdf

34. FTI explains in their report[24] why NERA's argument that entry into a competitive market could increase systematic risk is flawed, and looks at a number of brokers' reports that do not give a clear indication that the market perceived BT's move as being risky. FTI also points out that neither Ofcom nor NERA consider the pricing of BT Sport relative to its competitors and the potential impact it may have at lowering the BT Group beta.

35. NERA analysis of BT Group's rolling 30-day asset beta, attempts to show some correlation between BT's announcements and the impact on the "*more immediate perception of market risk by investors*".[25] However, a first glance at the timing of the three announcements relating to pay TV and sport rights do not indicate strongly that the asset betas have increased immediately after the announcements. Whilst we recognise that it may be difficult to pinpoint precisely the reasons underlying short term changes in beta, NERA's analysis does not consider the other half of the beta relationship, that is, the potential impact from the rest of the market.

36. Moreover, in the 2014 FAMR Statement Ofcom carried out analysis to suggest that the evidence is "*inconclusive as to whether the observed increase in the asset beta in recent years can be clearly attributed to its investments in superfast broadband and BT Sport (as suggested by TalkTalk)*".[26] NERA's hypothesis reflects the views TalkTalk has presented, and Ofcom has used this without carrying out a detailed analysis to assess its validity.

37. In summary, Ofcom has not provided evidence to support the assertion that BT Sports and pay TV is the driver behind BT's increased beta. NERA's analysis of the 30-day daily betas is only qualitative, and indeed could turn out to be spurious if a more quantitative analysis was undertaken.

Fibre investment

38. Thirdly, Ofcom, with reference to NERA's report, suggests that the large fibre to the cabinet (FTTC) investments could have been seen as higher risk investments compared to other investments by Openreach.[27] However, as FTI notes,[28] investment in FTTC has been undertaken since 2008, but NERA's own analysis shows that BT Group's beta was declining between 2008 and 2010. Again a visual inspection of NERA's 30-day beta graph is inconclusive with regards to the impact of BT's FTTC announcements and investors' perception of risk. It is important to remember that beta is about relative risk: whilst the fibre investment itself may be risky, activities in the rest of the market will determine whether the estimated beta increases or decreases.

39. NERA attributes the initial decline in BT Group's beta as being "*more likely to be associated with changes in perceptions of relative risk following the Global Financial Crisis*"[29] and the poor results warnings of BT Global Services. It appears that NERA's explanations around the changes in systematic risk perceived by investors are selective and based on judgement.

[24] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015
[25] NERA, Estimation of BT's equity and asset beta, 2015 (p.31).
[26] Ofcom, Fixed Access Market Review Statement, 2014, paragraph A14.262.
[27] Ofcom, Leased lines charge controls and dark fibre pricing, 2015. Paragraph A9.57.
[28] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015
[29] NERA, Estimation of BT's equity and asset beta, 2015 (p.32).

Defined benefit pension scheme

40. Lastly, Ofcom points to changes in BT's defined benefit pension scheme and the treatment of it as potentially having an impact on the beta for the rest of the business. NERA quotes academic literature that points towards equity risk reflecting a company's pension plan, and that "*BT's ratio of pension assets to operating assets has been increasing the in last several years*".[30] NERA then notes that the impact of this on a company's asset beta is "*uncertain and difficult to estimate*".[31]

41. FTI makes a number of observations around this as a potential reason for increases in BT Group's beta that raise doubt as to the validity of this as a reason, particularly as BT made significant payments into the pension plan and has funding plans for the remainder of the deficit. FTI's assessment of analysts' reports does not suggest that there was a marked impact from Ofcom's announcement.

Changes in BT beta driven by other factors

42. As stated earlier, neither NERA nor Ofcom consider the possibility that increases in BT Group's beta could have been market-driven, even though NERA suggests that this might be the case when BT Group's beta was falling.[32]

43. FTI presents another view whereby the volatility seen in the market between 2004 and 2012 "*can be considered as being Financial Services (FS) driven – with market returns following the financial services trend*".[33] Financial Services make up a significant proportion of the market and as an industry, could "drive" the market. As discussed previously, this could mean that other companies, including BT, see their betas change, "*not because of changes to their own underlying risk but due to changes to market risk*".[34] FTI finds support for this from the CC, which explicitly considered the impact of market volatility in its 2014 Determination.[35] Market performance could very well have been driving changes in BT Group's beta. Neither Ofcom nor NERA have considered the possibility of changes in market-driven risk.

44. FTI notes[36] that during the period from 2008 BT was involved in a number of regulatory disputes and appeals, which could have introduced a degree of regulatory risk into the beta[37] and provided a number of analysts reporting an impact on their outlook for BT.

Ofcom's case for disaggregation

45. Ofcom has not provided compelling evidence that the increase in BT Group's asset beta was unequivocally driven by BT's other non-regulated services and not leased lines and Openreach

[30] NERA, Estimation of BT's equity and asset beta, 2015 (p.32).
[31] NERA, Estimation of BT's equity and asset beta, 2015 (p.33).
[32] NERA, Estimation of BT's equity and asset beta, 2015 (p.32).
[33] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015
[34] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015
[35] Competition Commission, Northern Ireland Electricity Limited price determination, 26 March 2014, page 13-33: https://www.gov.uk/cma-cases/northern-ireland-electricity-price-determination#final-determination
[36] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015
[37] See for example NERA report for the National Audit Office that suggests a link between regulatory risk and the regulated firm's cost of capital: http://www.nera.com/content/dam/nera/publications/archive1/5283.pdf

copper access. This means Ofcom's basis for further disaggregating the "rest of BT" is not based on compelling arguments or robust evidence.

Openreach copper access beta

46. The first stage of the beta disaggregation is to separate out the beta for Openreach copper access. NERA's analysis for Ofcom covers data up to 31 January 2015 and shows the asset betas for UK utility companies average at around 0.40, compared against a BT Group beta of 0.74.[38] Ofcom argues that a copper access beta of 0.5 lies in between this range, and selected this figure such that it "*is consistent with… the June 2014 FAMR Statement*".[39] Ofcom considered that Openreach copper access asset beta "*should not be higher than that of the UK telecoms operators that are large users of wholesale access services from BT*".[40]

47. For the 2014 FAMR, Ofcom commissioned Brattle Group to carry out estimates of BT Group's beta as well as beta estimates for comparator companies. We note that the cut-off date for Brattle's analysis was 31 December 2013, and would be a number of years out of date for the 2016 Statement. We welcome Ofcom's intention to update the cost of capital parameters for the purposes of setting a forward-looking view of BT's cost of capital.

Update to copper beta

48. We refer to FTI's analysis[41] for BT which shows that both the one-year and two-year utility betas have showed a gradual upward trend since 2014, and estimates that average utility betas have increased to 0.48 (2 year) to 0.52 (1 year), an increase of around 36% between June 2014 and July 2015. If these are continued to be used as the benchmark, then we would expect Openreach copper access beta to increase accordingly, based on Ofcom's view that "*Openreach's asset beta should be above the average asset beta of network utilities, recognising that the systematic risk of energy and water utilities is likely to be lower than that for fixed line telephony*".[42] FTI estimates that Openreach asset beta would be between 0.5 and 0.68, and proposes an estimate of 0.60 for the Openreach asset beta.[43] FTI notes that this higher estimate would be supported by a number of regulatory precedents, including from the Competition Markets Authority ("CMA") which used an asset beta of 0.5 to 0.6 for energy supply and generation.[44]

49. We would expect Ofcom to update its analysis for the 2016 Statement, and would expect Ofcom to review the Openreach copper access asset beta assumption and take into account the recent upward trend in utility asset betas. As we set out above, the historical increase in BT Group's asset beta could just as well have implied an increase in the regulated businesses such as Openreach copper access and leased lines, and it is important that Ofcom considers all the relevant evidence available.

[38] NERA, Estimation of BT's equity and asset beta, 2015 (Table 3.2).
[39] Ofcom, Leased lines charge controls and dark fibre pricing, 2015. Paragraph A9.44.
[40] Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 – Annexes, June 2014: http://stakeholders.ofcom.org.uk/binaries/telecoms/ga/fixed-access-market-reviews-2014/statement-june-2014/annexes.pdf
[41] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015
[42] Paragraph A14.216, Ofcom 2014 FAMR Statement Annex.
[43] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015
[44] CMA, Energy Market Investigation, July 2015: https://www.gov.uk/cma-cases/energy-market-investigation

Analysis of asset beta for leased lines services and BT Global Services

Rest of BT beta

50. Given Ofcom's assessment of the Openreach beta, the first stage of its beta disaggregation results in a "rest of BT" beta of 0.82, which Ofcom does not consider appropriate for leased lines services when viewed against Ofcom's reasoning as to why BT Group's beta has increased over the years. Ofcom puts forward an additional argument that an asset beta of 0.82 would be "*higher than any other asset beta for comparator telecoms operators*" in the UK, Europe and the US.[45]

51. Ofcom's argument is flawed, and it stems from the first assumption that Ofcom adopted, i.e. a constant Openreach copper access beta. As discussed earlier, utility asset betas have shown an increase since 2014, and this should be reflected in Ofcom's estimate of the 2 year betas, particularly when it comes to the 2016 Statement.

52. FTI's analysis of the utility betas suggests that the Openreach copper access beta could be around 0.6. If this was adopted, the rest of BT assets beta would fall from 0.82 to 0.79, using the same assumptions for all other parameters as per Ofcom's current proposals. This is not significantly out of line with what Ofcom had used in the past. Furthermore, an update to the data means that the rest of BT beta falls further in line with the beta applied to leased lines services in the 2013 BCMR Statement.

53. FTI presents[46] other different, but equally plausible, combinations of BT Group and Openreach beta to show the sensitivity of balancing result on rest of BT asset beta, such that the assumptions are all consistent with the BT Group beta, the only piece of information that is based on observed market data.

Comparator companies for "other UK telecoms"

54. FTI notes[47] that there are limitations with Ofcom's selection of comparator companies used as a benchmark for the "other UK telecoms" part of its disaggregation. The UK comparators cannot be considered as pure-play comparators, as they have different business models compared to those services supplied by BT. The beta movements for these companies have also been volatile, making it difficult to conclude on a forward-looking beta. The European comparators are also different, with estimated betas showing even greater variability between them, and the US comparators are based on a small sample with different business models with revenues outside telecoms, operating in a different regulatory environment to the UK. This latter point was considered by the CMA whereby it questioned the comparability of overseas companies in its energy market review for precisely these issues.[48] Indeed in the 2014 FAMR Statement Ofcom replaced US telecoms comparators with EU incumbent operators due to "*greater similarities… in their regulatory regime*".[49]

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[45] Ofcom, Leased lines charge controls and dark fibre pricing, 2015. Paragraph A9.59.
[46] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015
[47] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015
[48] CMA, Energy Market Investigation, July 2015: https://www.gov.uk/cma-cases/energy-market-investigation
[49] Ofcom, Fixed Access Market Review Statement, 2014, paragraph A14.173.

Comparator companies for BT Global Services

55. Lastly, the beta estimates for four ICT companies as a benchmark for BT Global Services. We discussed previously how this set is a small selection of the wide range of ICT companies and that the actual range of asset betas is far greater, such that it is difficult to draw any meaningful conclusion to the average of this range.[50] Indeed, it is not surprising to observe such differing estimates, given that there are many aspects to the ICT business with different focuses on product, customer and geography. Ofcom has not provided any analysis to show that these companies are indeed comparable.

56. Ofcom's hypothesis that BT Global Services is likely to be more risky than other telecoms services is purely based on a quote from the 2005 PwC report and the data from the 4 comparator companies. Even Ofcom had cast doubts on the comparability of these companies in the 2009 LLCC appeal,[51] and Ofcom has not presented any evidence as to why it thinks the situation has changed since.

Weights for disaggregation

57. Ofcom considers three sources of data for disaggregate beta using either: Mean Capital Employed ("MCE"), EBIDTA or regulatory net replacement cost ("NRC") / enterprise value ("EV"), and decides that least weight would be put on MCE. Using the latest information available, Ofcom reduces the weighting applied to Openreach copper access from 33% used in 2014 FAMR to 25% in the LLCC Consultation. The other segments are split as 60% for other UK telecoms services (i.e. leased lines, non-copper access services, BT Consumer and BT Business), and 15% for BT Global Services.

58. FTI has shown in their analysis that the implied asset betas calculated using alternative reasonable assumptions vary significantly.[52] Any regulatory decision made on this basis should therefore be based on robust data. We are not convinced that this is the case based on the estimates presented in the LLCC Consultation. For example, the MCE would be the most theoretically relevant weighting, but this would mean a 55% weighting for Openreach, compared to the 25% used by Ofcom.

Ofcom's framework for disaggregation

59. In the 2005 Cost of Capital Statement Ofcom set out three criteria that should be satisfied before disaggregating the BT Group beta into its component businesses. These are:[53]

    a. The systematic risk faced by the project was significantly different from that faced by the overall company;

    b. There was evidence available which could be used to assess variations in risk (e.g. pure play comparators were available, it was possible to use other quantitative

[50] Ofcom, Leased lines charge controls and dark fibre pricing, 2015. Table A9.16.
[51] Competition Commission, *Cable & Wireless UK v Office of Communications*, Case 1112/3/3/09
[52] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015
[53] Ofcom Statement, "*Ofcom's approach to risk in the assessment of cost of capital*", August 2005 (paragraph 5.24)

analysis – for example, quantitative risk assessments, data on the firm was available at a disaggregated level – for example, in separate accounts); and

c. Correctly identifying variations in risk, and reflecting this in an adjusted rate of return, was likely to bring about significant gains for consumers.

60. We do not believe that these conditions have been met to warrant a further disaggregation.

61. Firstly, we have discussed in previous sections of this annex why we do not think Ofcom has provided sufficiently robust arguments to supports its view that the systematic risk of leased lines is different to that of the rest of BT. Ofcom's argument seem to be hinged on PwC's supposition a decade ago that this is the case, but without any data to back this up. Indeed, FTI considers that as we move towards a digital economy, "*ICT services are now becoming mainstream and there is less of a distinction made between ICT and non-ICT services*", and as such "*demand for ICT services is likely to fluctuate less over the economy cycle than what PwC may have expected*".[54]

62. Secondly, we have evaluated the evidence Ofcom used to disaggregate the "rest of BT" beta. Ofcom's analysis of demand and forecast variations show that leased lines may face similar risks to other UK telecoms services, but cannot provide evidence that these services face different risks to BT Global Services. Furthermore, we have doubts regarding the comparability of the companies selected for the "other UK telecoms" and BT Global Services segments, as discussed above.

63. Finally, there may potentially be a benefit to consumers if the disaggregation would lead to prices set in charge controls that are more reflective of the underlying costs, and that the WACC applied sends out the correct signals for future innovation and investment. However, given that there is insufficient information for the disaggregation, Ofcom should consider the principle that it had set out in 2005 that it should err on the side of caution.[55]

64. Ofcom's case for further disaggregation based on the assumption that BT Global Services would have higher beta and should be the main contributor to the increases in beta observed for BT Group, is not properly supported by evidence. In particular, the comparator firms are not sufficiently close to the breakdown of BT's lines of business as identified by Ofcom.

Update to BT Group WACC

65. Overall, Ofcom is proposing to take a consistent approach to setting the BT Group WACC with its previous decisions, and indicates that it will revisit its estimate of WACC ahead of any final Statement on these charge controls taking account of the latest available spot data.[56] BT broadly supports the consistent approach Ofcom is proposing to take with regard to each of the parameter estimates, apart from the treatment of embedded debt, explored further below.

66. Ofcom's assessment of 10.0% WACC for BT Group remains unchanged from the 2014 Fixed Access Market Review Statement, although with some variations in the individual parameter

[54] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015
[55] Paragraph 5.32, Ofcom 2005 Cost of Capital Statement.
[56] Ofcom, Leased lines charge controls and dark fibre pricing, 2015. Annex 9.

estimates. Ofcom has adopted a consistent approach to setting the WACC, with reference to the Capital Asset Pricing Model ("CAPM").[57]

67. BT agrees with Ofcom's proposal to continue to use the CAPM approach to estimating BT's WACC. The CAPM approach has been used for some time to estimate the WACC in setting charge controls in the UK, and has been used by other National Regulatory Authorities ("NRAs") as well as the CC and the CMA. Furthermore, investors in BT's debt and equity will make assumptions around Ofcom's approach to estimating the WACC in regulating prices and they will inevitably place considerable weight on consistency of approach over time. As a result, any move to change the approach to estimating the WACC could itself risk increasing the WACC over time as investors factor in greater regulatory uncertainty.

BT Group beta

68. Ofcom assumed an equity beta of 0.97 for BT Group, based on NERA's calculation of the beta against the FTSE All Share Index using 2 years' worth of daily data up to and including 31 January.[58]

69. Ofcom and others have commented on the sensitivity of BT's beta to the time period over which it is calculated.[59] In particular, the general rise in equity beta from 2009 followed by the fall since 2013 is well documented and has been considered in some detail in Ofcom's 2014 Fixed Access Market Review.[60] FTI's analysis summarised below shows significant variation between the 2 year betas calculated as of 31 January, and when compared against more recent data since NERA's analysis.

70. FTI considers[61] that a forward-looking beta, for the purposes of the WACC to be applied from 2016 to 2019, should not only be based on the 2 year beta that Ofcom has adopted for a number of years. It should be cross-checked against the 1 year and the 5 year estimates, which offer a balance between current investor sentiment and smoothing out of short term volatilities in the market. Based on the above evidence, FTI recommends a range of 0.66 to 0.77 for BT's asset beta, with a base case estimate of 0.73. When re-levered using Ofcom's 30% gearing assumption, the implied equity beta is 0.89 to 1.05, with a base case estimate of 0.95. FTI provides further analysis of this in its report annexed to our response.

Debt premium

71. For most part, Ofcom's approach to debt premium is consistent with best practice, but FTI notes that an area of inconsistency is the use of forward looking debt assumptions, rather than considering the cost of embedded debt. Embedded debt and transaction costs are both considered by all other UK regulators FTI has reviewed on behalf of BT. They propose an additional 90 basis points compared to Ofcom's assessment of BT's forward-looking cost of debt.

[57] Ofcom, Leased lines charge controls and dark fibre pricing, 2015. Annex 9.
[58] Ofcom, Leased lines charge controls and dark fibre pricing, 2015. Table A9.2
[59] Ofcom, Leased lines charge controls and dark fibre pricing, 2015. Annex 9. NERA, Estimation of BT's equity and asset beta, 2015.
[60] Ofcom, Fixed Access Market Review Statement, 2014, Annex 14.
[61] FTI Consulting, BT WACC. Annex J to BT Response to Ofcom's consultation document "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing". August 2015

FTI's analysis is provided in the report attached to this response. In summary, FTI's assessment is based on:

a. 50% of the additional coupon rate on BT's outstanding Sterling denominated debt of 7.0% compared to Ofcom's forward-looking cost of debt of 5.4%; plus

b. Debt issuance costs for new debt of 10 basis points, the lower end of the range adopted by other sector regulators.

Updated range of BT Group WACC

72. In the table below we present FTI's assessment of BT Group WACC, taking into account data up to and including 30 June 2015.

Table 1: Updated BT Group WACC, disaggregated for Openreach and rest of BT

	BT Group (base case)	***Openreach***	***Rest of BT***
Real risk free rate	1.0%	1.0%	1.0%
Inflation assumption	3.2%	3.2%	3.2%
Nominal risk free rate	4.2%	4.2%	4.2%
Equity beta	0.95		
Asset beta	0.73	0.60	0.79
Equity beta @ 30% gearing	1.00	0.81	1.09
ERP	5.4%	5.4%	5.4%
Gearing	30.0%	30.0%	30.0%
Debt premium	2.1%	1.9%	2.2%
Debt beta	0.1	0.1	0.1
Tax rate	19.3%	19.3%	19.3%
Pre-tax nominal WACC	**10.2%**	**9.3%**	**10.6%**

Sources: FTI analysis.

<u>**WACC for Ethernet and TI baskets**</u>

73. Overall, while we welcome that Ofcom would consider any changes in parameters prior to making a final decision on these controls, we would urge Ofcom to conduct a more thorough review of the evidence at the earliest opportunity to ensure stakeholders have the opportunity to engage effectively in that process before a decision is made.

74. We have shown that there is a wide plausible range for the "rest of BT" beta based on the initial estimate of BT Group and the Openreach copper access betas. Introducing a new methodology based on highly sensitive data as that used by Ofcom to support its proposal in the LLCC Consultation, is not good regulatory practice, and may increase regulatory uncertainty to the detriment of future investment in the sector.

75. In conclusion, we consider that BT Group WACC should be updated to 10.2%, with an asset beta of 0.73. Openreach beta should be updated to 0.6, with a resulting rest of BT beta of 0.79. This results in a rest of BT WACC of 10.6%. This should be applied to the Ethernet and TI baskets. A

further disaggregation of the rest of BT WACC is not necessary, and is not supported by the evidence available, which is not sufficiently robust.