

BEREC Position Paper

Input to the Commission's WACC consultation 2018

1. BEREC welcomes the initiative of the Commission and would like to make some general remarks on the Background Document of the Commission first. The remarks follow the structure of the Background Document.

1. Introduction

2. BEREC understands that the planned document of the Commission on the determination of the Weighted Average Cost of Capital (WACC) by NRAs will be non-binding providing guidance for NRAs when calculating the WACC in their regulatory procedures under the current regulatory framework for electronic communications networks and services. In particular NRAs calculate the WACC when imposing price control and cost accounting obligations according to Art. 13 Access Directive (AD) and are subject to Commission (EC) scrutiny under the Art. 7/7a Framework Directive (FD) notification process in which the WACC is an element of the cost orientation remedy.
3. WACC is generally recognised as the best way to evaluate the allowed return on the capital invested in network infrastructure.¹ It is relevant for regulatory purposes as it is one of the main elements in defining cost oriented prices, carrying out price/margin squeeze tests, including ERT² and implementing the regulatory accounting obligations.
4. The WACC plays an important role in setting cost-oriented regulated prices because it determines the reasonable rate of return on the capital employed. Regulated wholesale prices on one side should provide the regulated firm with the opportunity to finance (efficient) investment and, on the other, provide access seekers with efficient “build-vs-buy” price signals. An increase (decrease) in WACC will, other things equal, increase (decrease) regulated prices. Even minor changes in the WACC can influence the regulated prices significantly given that the telecommunications sector is very capital intensive³. Therefore BEREC is of the view that the WACC is first of all determined as part of a regulated price of an SMP operator (i.e. a way to implement the cost orientation remedy), and not only from the perspective of a (financial) investor, as it is commonly used in cost models that generate results related to national electronic communications markets. Sector-specific regulated WACC

¹ Commission Recommendation of 20 September 2010 on regulated access to Next Generation Networks (NGA), 2010/572/EU.

² Ex-ante Economic Replicability Test, see BoR (14) 190, available at: https://www.berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/4782-berec-guidance-on-the-regulatory-accounting-approach-to-the-economic-replicability-test-ie-ex-antesector-specific-margin-squeeze-tests.

³ For the local access market, for example, a 1%-point change in the WACC could change regulated wholesale prices by 5-10%; Source: Regulatory Accounting in Practice Report 2017 (BoR (17) 169), Chapter 5 – WACC, available at: https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/7316-berec-report-regulatory-accounting-in-practice-2017, ft. 3.

calculations by NRAs necessarily incorporates regulatory objectives according to the current EU framework⁴ which may not be reflected in a pure financial WACC. BEREC is of the opinion that the Commission should take into account this aspect. BEREC assesses the proposed methodologies in the light of this main purpose. Even when looking from the investor's perspective it needs to be kept in mind that an investor looks at the conditions of the specific (national) market.

5. According to the goal of regulation and following from the efficiency requirement of Art. 13 AD the WACC estimation is forward looking even when based on historical information.⁵ As such, estimating the WACC requires regulatory judgement to assess whether current or historical evidence is more relevant on a forward-looking basis (that is to say the weight to give to historical series vs. recent or spot data). In that sense a trade-off between short-term accuracy and long term predictability is a crucial element in the NRA's discretion to calculate the WACC according to the regulatory objectives and strategy. This trade-off should also be considered in the light of the efficiency principle introduced by the Commission (see below).
6. This implies that when calculating the WACC for wholesale price regulation purposes, NRAs cannot focus only on theory; a practical view on the estimation process is also necessary to take into account regulatory objectives as well as previous regulatory decisions and the role of the WACC in the cost models.
7. It is possible to estimate the parameters in the WACC formula in different ways, and NRAs may take different approaches according to elements such as national economic conditions, availability of data, the degree of wholesale and retail competition (which influences the beta), regulatory goals/strategy etc. Given that the WACC is a multi-dimensional indicator BEREC considers that NRAs should have the flexibility – within their regulatory duties – to take a practical approach to estimating a regulatory WACC that supports national circumstances, but acknowledges as well the need for consistency across countries (see below ch. 2) bearing in mind the need for legal certainty⁶ for NRA's decisions⁷. It is understood that the need of consistency across countries limits the flexibility of NRAs to a certain extent. As shown further down, the latest data in any case shows a continuing trend of NRAs' convergence in the methodological approach. Insofar BEREC thinks that for some implementation aspects related to the calculation in practice of single parameters the level of detail proposed by the Commission is not needed and should be reduced.
8. When NRAs calculate the WACC they may in fact take into account general regulatory principles⁸ such as predictability, transparency, and consistency, sending efficient price and investment signals etc. and not merely applying a fully-defined formula. Therefore, BEREC agrees with the regulatory principles set out by the Commission as a general framework.

⁴ Art. 8 Framework Directive.

⁵ See Commission Recommendation (2013/466/EU) para. 30: Past investments, as suggested by the Recommendation, can be taken into account in the RAB (regulatory asset base) considered in the costing methodology.

⁶ Which is closely related to the principle of predictability (see below para. 33).

⁷ In BEREC's view, such a flexibility is by far different from the "*observed significant discrepancies in NRAs' approaches to estimating WACC*" as it is purported in the Targeted consultation (para 1. "Objective of the consultation").

⁸ 2009/140/EU.

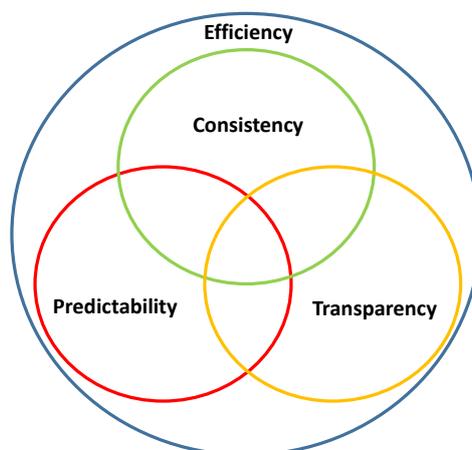
2. Regulatory principles to assess the most appropriate WACC methodology

9. BEREC welcomes the position of the Commission to define a “principles framework” for WACC estimation that is relevant within the regulatory discretion of NRAs in WACC estimation.
10. Overall BEREC agrees with the description of regulatory principles and would like to make the following comments. BEREC itself has promoted three of the four principles, the fourth one being efficiency. The following comments are based on BEREC’s assessment of the principles of predictability, transparency, and consistency.⁹
11. **Predictability** limits uncertainty and thereby risks to the industry that is characterized by long term investments. BEREC understands from the Commission’s description that NRAs should be predictable with regard to the methodology used and in that sense the foreseeable value of the parameter. Strictly speaking the parameter value as such may not be stable as it adapts to the conditions it measures and thus a change of a parameter value reflects a change of the conditions (and vice-versa).
In that sense, methodological predictability *stricto sensu* may not imply a stable variable of the single parameter from one regulatory round to another, thus requiring regulatory discretion sometimes implying “sanity checks”, as historical datasets do not necessarily reflect the future development.
12. **Transparency** helps to obtain acceptance from the industry. In practical terms, this means the use of
 - reliable and well documented data sources,
 - explicit methodologies that can be verified, and
 - clearly explained methodology to stakeholders.
13. BEREC agrees that it is preferable to use publicly available data. BEREC thinks that a well explained methodology helps reducing complexity and thus increases understanding of the regulatory rationale behind the NRA’s decision better as they can replicate the result and capture that it is not arbitrarily derived, but follows the economic logic of the WACC formula.
14. **Consistency** ensures that the calculation of the parameter values is in line with both theory, and empirical findings. The definition presented by the Commission for this principle relates to using the same rules and assumptions and is understood as ensuring consistency both across countries and over time.
15. In this regard BEREC acknowledges that the WACC is not only a matter of wholesale price regulation; it can provide, together with the regulatory framework in charge and the overall remedies imposed a signal directly to investors who invest in multiple EU-coun-

⁹ BEREC Report on Regulatory Accounting in Practice 2017 (BoR (17) 169), Chapter 5 – WACC, available at: https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/7316-berec-report-regulatory-accounting-in-practice-2017.

tries. In such a sense, a more homogenous WACC methodology can increase confidence of investors providing a better signal – in this case limiting the risk of distorting investments in telecommunications infrastructure between member states.

16. Furthermore, BEREC considers that consistency ensures that WACC computation uses:
- proven methodologies that can be verified, and
 - established financial theory and practices.
17. Finally, an aspect of consistency NRAs may consider is relating to consistency across different sectors, which is particularly important for multi-sector regulators. Those regulators could consider taking into account values of country specific parameters calculated for previous WACC values, even for different sectors.
18. The Commission introduces the principle of **efficiency** described as determining a WACC that balances productive, allocative and dynamic efficiency. BEREC's understanding is that the principle of efficiency follows from the efficiency requirement as laid down in Art. 13(2) AD which states that "NRAs shall ensure that any cost recovery mechanism or pricing methodology that is mandated serves to promote *efficiency*¹⁰ and sustainable competition and maximise consumer benefits and especially the reference to the "cost of *efficient*¹¹ service provision" in Art. 13(3) AD. This follows from the fact that the WACC is part of the regulated price as outlined above. Thus the WACC must also fulfil the efficiency requirement which includes all types of economic efficiency. This approach may therefore contradict using only the SMP operator's WACC parameter values. With regard to the applicability of the efficiency principle, we assume it applies to the WACC as a whole, not to each individual parameter.
19. In terms of hierarchy of principles, BEREC thinks that all principles are equally relevant in the WACC estimation (which may imply the need for NRAs to balance them); as an underlying economic principle, "efficiency" might have a greater influence on the judgement of the "final value" of the parameters for checking the methodology, and thus can be positioned as follows:



¹⁰ Emphasis added.

¹¹ Emphasis added.

20. BEREC considers that the adoption of the outlined four principles as high level guidance for the regulatory WACC calculation would not lead to “notional EU” values for every parameter (see below).
21. Over the years BEREC has collected information about the way WACC is estimated by all NRAs in regulated markets. In the Regulatory Accounting in Practice Report 2013 (BoR (13) 110), an extensive survey has been carried out on the subject of WACC confirming that nearly all NRAs use the CAPM (Capital Asset Pricing Model) to evaluate the equity rate of return from which they derive the WACC as a weighted average of the cost of debt and the cost of equity focusing the analysis on the fixed and mobile markets i. e. Market 4/2007 and Market 7/2007.¹²
22. In the Regulatory Accounting in Practice Report 2016 (BoR (16) 159) BEREC decided to update and expand the information collected for the WACC section in terms of quality, quantity and scope, providing an update of the 2013 Annex report as well as providing new benchmarks on WACC parameter estimation and methodologies.
23. Chapter 5 of the 2017 Regulatory Accounting in Practice report surveys WACC values, benchmarking final rates, and methodologies of single parameters within the WACC formula computed by NRAs for the estimation of legacy WACC specifically in market 3a and more in general in fixed markets.¹³ It also provides information about the evolution of the WACC value over time.
24. Different values may be detected among countries. Single parameter analysis was agreed to be relevant in understanding differences in WACC among NRAs. Parameters have been classified among those which may be detected as those that NRAs interpret in light of country specific evidence or, conversely, that are less relevant in explaining differences in WACC values among NRAs. The last classification refers to correlation between single parameters values and final WACC values on an historical basis. Each parameter has been correctly identified in terms of NRAs approach to the estimation. Each single parameter has been analysed, for benchmarking purposes, in terms of methodology used by single NRAs, value evolution overtime and guiding principles. Analysis refers to the general leading principles, in order to depict how those principles are practically taken into account by NRAs in their WACC calculation. For each parameter it is possible to highlight differences in values, differences in methodologies, if any, or evaluating if methodologies are sufficiently aligned and converging. According to this analysis it is possible to highlight the more critical parameters with respect to a likely methodological harmonization process among NRAs.
25. For the Regulatory Accounting in Practice Report 2018 the WACC data has been collected and analysed in order to substantiate BEREC’s views on the WACC determination.

¹² Annex to the 2013 RA Report “Cost of Capital in Europe – Cost of Capital Parameters in 27 European Countries” (Data as of 1st January 2012).

¹³ The information collected and presented in the report refer to market 3a, in some cases due to country specificity issue data provided can refer to fixed market (i.e. market 1, market 3b, market 4). In the text it is highlighted when different data set have been provided by NRAs.

26. The 2017 Regulatory Accounting in Practice Report data already showed that main differences in final WACC values were mainly explained with respect to parameters in the WACC calculation that are “country specific” - and not “sector specific” – such as the Risk Free Rate (RFR), Equity Risk Premium (ERP) and Tax, with a less relevant role for parameters such as beta, gearing and debt premium. This, in our view, would not lead to investment distortion (as mentioned in the background document).
27. Data collected and analysed in 2018 (14 out of 32 NRAs provided an updated WACC value in respect to last year for fixed market) shows a tendency of NRAs to address the estimation of the cost of equity according to:
- i) a clear first choice to use “domestic bonds” for estimating the RFR (the number of NRAs opting for this method increases to 21), which might reflect – among other things – an investor’s home-bias (see below section 4.1);
 - ii) an over the years’ increasing preference for estimating Beta (20 NRAs) and Gearing (18 NRAs) through a pure “notional” approach (in order to obtain maximum efficiency) including a certain number of comparable companies;
 - iii) most NRAs base their calculation of the ERP on historical data to calculate – either directly or indirectly – the country-specific ERP¹⁴;
 - iv) a reduction of the number (now only 5) of NRAs which compute the cost of debt merely looking at the SMP operator.
28. The 2018 survey observes for the first time that differences affecting estimation of parameters by NRAs for the WACC applied to fixed and mobile markets are negligible, thus reinforcing the idea of internal consistency.
29. BEREC considers that, among other factors, its annual benchmarking activity through the Regulatory Accounting EWG, is contributing to share knowledge on many aspects of WACC estimation, to highlight common approaches, thus smoothing differences among NRAs.
30. The 2018 data collection provides the opportunity to derive a clearer view about “technical adjustments” applied by NRAs (13 out of 32) for efficiency reasons with respect to the standard estimation of the parameters. They are generally used as a way to better adapt the estimation to country specificities and/or to a forward looking perspective. More relevant technical adjustments relate to a “country risk premium” included in the RFR or ERP (6 NRAs), a “Quantitative Easing (QE) adjustment” applied to RFR, adjustments to RFR in order to get consistency with estimation of ERP based on historical data, or adjustment to take into account country/Eurozone inflation.
31. Analysing the technical adjustments applied according to the methodology in use to estimate the WACC parameters, it can be observed that “technical adjustments” are applied more frequently in cases where RFR and/or ERP are estimated not using a pure “domestic” approach. This element suggests that even if the main methodology for estimating RFR and/or ERP does not follow a country specific approach (towards a notional one), NRAs consider the need to adjust the final estimation of the cost of equity in order to include some “own-country specific” risk. Generally NRAs should be transparent when

¹⁴ The 2018 WACC data shows a small increase in the number of NRAs which chose an “own-country-ERP”.

making technical adjustments and limit themselves to these adjustments.

32. For the beta and gearing estimations, it is possible to show that a notional approach is mostly applied in combination with a price control method based on a BU-LRIC approach in line with the methodology recommended in the Commission Recommendation 2013/466/EU. On the other hand, an SMP beta estimation is used in case an FDC/TD approach for price control is followed.
33. Supported by the evidence collected, BEREC would like to underline that in case the Commission's guidance would suggest to move to a pure notional approach for both RFR and ERP estimation, the effects in terms of final WACC changes with respect to the values currently in force could be quite substantial (most of all if combined with an "SMP beta" estimation). Such a message is by far crucial considering the proposed "principle framework", on which BEREC agrees, and in particular considering the principle of predictability and efficiency which implicitly consider shocks as not proper regulatory outcomes. Furthermore it would contradict the principle of **legal certainty** and hence a stable regulatory environment. This might have a negative effect on investment in electronic communications infrastructure.

3. WACC formula

34. BEREC has no comments on the WACC formula and confirms that the WACC is calculated by NRAs by using the CAP-M formula for the calculation of the cost of equity.
35. However, BEREC thinks that the WACC should be calculated as a pre-tax value (using the domestic corporate tax rate). BEREC wonders why the Commission has not examined taxation in the background document. BEREC would like to stress the crucial role of taxes in affecting real return on capital invested, thus having a stronger impact on investors' choice than other technical parameters of the formula.

4. Initial views on the most appropriate methodology to estimate the WACC

36. Chapter 4 is commenting on the individual parameters following the logic of the background paper.

4.1 Risk-free rate (RFR)

37. The BEREC response is structured in the same way as the background document provided by the European Commission.

Table 1 : EU Commission's proposed method of calculating the risk-free rate (hereafter RFR) versus BEREC's majority opinion - Overview

Part of the RFR	Method proposed by the European Commission	BEREC's majority opinion
Bond	European	Domestic
Bond maturity	10-year	10-year

Sampling period	Weekly	Daily or weekly
Averaging window	5-year	5-year
Averaging methodology	Arithmetic averaging	Arithmetic averaging
Quantitative Easing	Neutral, but NRAs could add from 16 - 80 basis points	None
Other adjustments	Adding 40 basis point if 10-year bond maturity and if DMS is used in the calculation of ERP	Adjustment to ensure consistency with other parameters e.g. the ERP.

Use of an EU RFR value and the choice of EU countries to derive the average EU RFR

38. The European Commission proposes to use a **notional EU value based on the average of the yields on government bonds in several EU member states**, rather than a domestic value. This raises two types of concerns.
39. First of all, concerning the general methodology, BEREC is unsure on how the RFR would be calculated using the notional method proposed by the Commission¹⁵. Indeed, there does not exist a European bond to be used in the calculation. This therefore raises many methodological questions on:
- Which member states should be included in the calculation?
 - Which series of bonds should be included?
 - Do yields of different bonds from different member states weigh the same in the calculation?
 - If not, how should national RFR weights be calculated?
 - When and how should these choices be calculated or modified?
40. Thus, BEREC considers that, even if the calculation is carried out by a single body, **it could be complex to define an objective methodology**. The Commission itself points out that its proposal would be complex and reduce transparency.
41. Second, concerning the substance of the proposal, BEREC's majority opinion is that **using domestic bonds makes more economic sense than using a common EU value** as explained in the following paragraphs.
42. **Investing in a specific country entails taking into account the country risks** (country-specific economic situation, regulatory risks etc.) which are not compensated through cash flows. This is widely recognised by theory, market practice and has been developed in the 2016 Brattle report¹⁶. Using a country-specific "risk-free rate", that is, taking into account a "country-risk premium"¹⁷ in the WACC is reasonable since it will **compensate the investor for specific country and regulatory risks actually borne**. In most cases,

¹⁵ The Commission's background document does not propose a precise method (see p. 3)

¹⁶ 2016 Brattle report: "*Review of approaches to estimate a reasonable rate of return for investments in telecoms networks in regulatory proceedings and options for EU harmonization*" analysis pp21-25 and conclusion: „*Investors in a regulated business must be compensated for regulatory and other country-specific risks not otherwise compensated in the price cap [...] Compensating investors for these risks by offering a premium on the return equal to the country-risk premium seems reasonable*“.

¹⁷ That is, deriving the risk-free rate from the yields on the NRA's 'domestic' bonds; being in most cases the government bonds for the Member State. A "risk-free rate" derived in this way is in practice the sum of a "true risk-free" rate plus a country-risk premium.

this could be achieved by using the country's government bond yields as the "risk-free rates" for the country, excepting some specific circumstances¹⁸.

43. **Using an average European yield would mean levelling the risk across member states which does not seem to make economic sense.** If an average EU yield were used to calculate the RFR, then investors in some member states would be overcompensated and others the opposite, as soon as the yield on government bonds in each EU country is different. This would distort investment incentives seen from the investors' point of view and would thus be against the efficiency principle pointed out by the Commission. Each country is in its own way characterised by a country-specific risk-premium for all national investments. BEREC argues that this characterisation should be reflected in the RFR for each country.
44. **Furthermore, the Commission's proposal seems inappropriate for non-eurozone member states.** Domestic bonds reflect interest rate and inflation expectations for the domestic currency. On this point BEREC refers to Professor *A. Damodaran*: "...the risk-free rate should be in the same currency in which the cash flows are estimated."¹⁹
45. **Therefore, BEREC disagrees with the approach of the Commission to calculate a notional European RFR and suggests using domestic bonds to calculate the RFR** to reflect the specificity of the national market conditions. BEREC finds that this approach is in line with both theory and the method used by the majority of the EU member states today. Still covered by this approach is the practice of some NRAs to use an average based on the domestic bond rate and the government bonds with the lowest yield across the EU.
46. Another reason for calculating with domestic bonds is the home-bias of investors (mentioned already in ch. 2), which is not quantifiable only through the beta parameter as suggested by the Commission.²⁰

Use of 10-year maturity government bond

47. **BEREC agrees with the Commission on using 10-year government bonds.** It is generally recognised²¹ that long term bonds (10/20 years maturity) seem to be a better choice for estimating a country's RFR because they are less volatile, more liquid, and generally consistent with the Equity Risk Premium (ERP) estimation which is proposed by the Commission to rely on a publicly available database on historical ERP, like Dimson, Marsh and Staunton (DMS) time series which is based for some countries on 20-year maturity bonds.

¹⁸ Except when the domestic bond is extremely illiquid or when the domestic bond presents a significant risk of default. See details in Brattle final report, part VI.A.1.a page 26 and following.

¹⁹ *Aswath Damodaran*, Applied Corporate Finance, Johan Wiley & Sons, 2010, third edition, page 102.

²⁰ Oxera, Estimating the cost of capital for Italian electricity and gas networks, <https://www.arera.it/allegati/docs/15/275-15oxera.pdf>.

²¹ On this point, see the BEREC 2017 'Regulatory accounting in practice' report, page 12.

48. In this regard, the Commission states in the background paper²² that if DMS data is used in the calculation of the ERP, then 40 basis points should be added to the RFR if the latter is based on 10-year maturity bond to reflect the average difference in yields between 10-year and 20-year maturity government bonds. The majority of **BEREC members agree to apply such an adjustment to the risk-free rate if the RFR is based on a 10-year government bond and if the ERP is computed with bonds of another maturity.**
49. However, BEREC would like to question the proposed “*the adjustment of around 40 basis points (...) to reflect the average difference in yields between 10-year and 20-year maturity Treasury bonds*”²³.
50. BEREC understands that these two assumptions (40 basis points and 20-years maturity bonds) are derived from the Brattle report²⁴. However, both should be challenged because first, it seems that for many countries DMS do not base their series on 20-year maturity bonds²⁵. Second, calculations done on bonds of European governments using data of the last 5 years show that the spread has been much greater than 40 basis points in most of these countries. Moreover, the Brattle Group report indicates not having “*an estimate for the term premium for Europe*”²⁶. Therefore, the “40 basis point” may not be solid enough and would not satisfy the principle of transparency. BEREC calls for clarification on this point. In addition, if the ERP is indirectly measured through first estimating the total equity market return and then subtracting the RFR, such an adjustment is not required.

Use of 5-year averaging period

51. The European Commission finds a 5-year averaging period appropriate when estimating the RFR.
52. BEREC finds that when looking at the averaging window **some trade-offs between a forward-looking estimation and a reduced volatility of the bond yields needs to be considered.** Some NRAs are focussing more on a shorter averaging window (eg: 3-year) to reflect current data and avoid estimation errors. Others apply longer averaging periods to take into account the duration of economic cycles and ensure stability. Based on this **BEREC suggests using a 3 – 5-year averaging period** reflecting both aspects mentioned above.

The choice of an arithmetic average approach

53. BEREC agrees with using an arithmetic average when estimating the RFR if this choice is transparent and properly justified by the Commission.

²² Whereas Question 26 of the Questionnaire was deleted during the consultation.

²³ See the Commission background document p.4.

²⁴ See Brattle final report, part VI.A.3.a, page 33 and following

²⁵ For instance, in 2006, for some countries DMS calculated the ERP according to various government bond indexes with maturities of over 5, 7 or even 10 years. See *Dimson, Marsh, Staunton 2006, The worldwide equity premium: a smaller puzzle*. For now, the opposite hasn't been demonstrated.

²⁶ *Ibid*, page 36

The use of weekly frequency data

54. The European Commission argues for using weekly frequency data to estimate the RFR.
55. **BEREC considers that daily data would increase reliability and the statistical significance** even though BEREC understands the need for consistency in the calculation of the different parameters.
56. However, BEREC considers that the **difference between using weekly or daily observations in the calculation of the RFR is minimal and will not insist on this point.**

The RFR and quantitative easing (QE) programmes

57. The **Commission is neutral** on whether NRAs should adjust the RFR with regards to QE.
58. BEREC understands that the ECB procurement programme (public sector purchase programme) ran until December 2017.²⁷ BEREC as well is neutral on that point.

4.2 Equity Risk Premium (ERP)**Use of historical series**

59. According to the **European Commission**, the use of historical series is justified since this is more consistent, gives regulatory predictability and is more transparent, compared to other sources such as using survey evidence, a Dividend Growth Model (DGM) or any mix of approaches.
60. Within BEREC, most member states also use historical data when calculating the ERP with data from DMS being the most common.
61. Despite the Equity Risk Premium (ERP) being one of the most important variables in financial economics there is not one model that resolves the puzzle on how to estimate it.
62. **BEREC** agrees with the Commission that the ERP should primarily be based on historical data as it provides information about the returns investors realised in the past. Historical data over a longer period of time reflects a wide range of market conditions. Using a longer period of time, in theory prevents the ERP being distorted by specific circumstances which occurred during a short period of time. An ERP based on long term historical data should therefore provide the best predictor for the expected future return for investors. Moreover, many economists and financial managers are of the conviction that the use of long term historical data is the best available indicator for the ERP.²⁸

²⁷ More information can be found here: <https://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html#pspp>.

²⁸ Brealey, Meyers and Allen, *Corporate Finance*, 10th edition, p.160.

63. Dimson, Marsh and Staunton (DMS) provide an established method based on historical data of realised ERP of both individual countries as well as a market weighted average of Europe that could be used in the WACC calculation. The data provided by DMS is a suitable source of long term historical data. DMS provide the equity risk premium relative to government bills and government bonds²⁹ for 21 countries (including 17 European countries) over the period 1900-2017.^{30,31} DMS state that such a long period is required, since even over intervals of a decade or more, there can be major performance surprises in which risk premiums are very negative or extremely high. Over longer time horizons, it might be expected that good and bad luck cancel each other out.³² Although DMS data is widely used for calculating the ERP, it is not an uncontested source as the underlying data that DMS ERP is based on is subject to substantial adjustments and assumptions, and some countries have been subject to more adjustments compared to others as there are no perfect data sets for the long time series.³³
64. Despite these caveats, BEREC is of the opinion that DMS is the best publicly available source to calculate the ERP based on historical data. However BEREC is of the opinion that it is appropriate to do sanity checks, such as using a DGM (which in itself builds on a number of assumptions) as there is a possibility that historical data could over- or underestimate the ERP:
- Some dividend growth models currently expect that an ERP should be slightly higher (on average one percent point) than the ERP based on DMS. So the ERP based on DMS might need an upward adjustment.³⁴
 - On the other hand, some argue that an ERP based on DMS might be overestimated since various events in the past will not occur again in the future, although this is difficult to foresee.³⁵ However, it could motivate a higher ERP. This might support a downward adjustment of the ERP based on DMS.
65. There is no reason to assume that one of these adjustments and subsequent assessment might be higher than the other one. Therefore it can be argued that both adjustments cancel out each other.
66. Surveys could also be a source to estimate a forward looking ERP. Financial experts often give no clear opinion on the long term future and their opinions are mostly dependent on the current state of the market and could therefore be too optimistic. Furthermore,

²⁹ There are some exceptions, like for Denmark, DMS uses real estate bonds and not government bonds. The Danish real estate bonds are liquid, but it can be argued, that they are not comparable to data for the other countries. DBA therefore uses DMS data for a peer group of countries except Denmark combined with surveys (to reflect future ERP) which include data from Denmark.

³⁰ DMS publishes its Credit Suisse Global Investment Yearbook each year.

³¹ For Austria and Germany, statistics are based on 115 years, excluding 1921-22 for Austria and 1922-23 for Germany due to extraordinary circumstances.

³² Credit Suisse Global Investment Returns Yearbook 2017, Dimson, Marsh, Staunton.

³³ Dimson, Marsh, Staunton 2006, The worldwide equity premium: a smaller puzzle.

³⁴ See for example The WACC for Dutch Postal Services, Brattle, 8 November 2017, p. 7.

³⁵ See The WACC for Dutch Postal Services, Brattle, 8 November 2017, p. 8. Brattle states: “*These events include the favourable resolution of many risks that were present in the last century, which led to unusually high real dividend growth rates, the reduced risk of holding shares due to advances in technology which made diversification easier, real exchange rate gains which would not be expected to be repeated. See Credit Suisse Global Investment Returns Yearbook – Slide Deck, February 2017, p. 16.*”

the questions of these surveys are most of the time too unclear to base any conclusions on.³⁶

67. BEREC agrees with the Commission that the ERP should primarily be based on historical data (which needs to be of sufficient quality, i.e. with modern indexation methods), but is of the opinion that these arguments about the ERP are relevant to consider as a sanity check, as a technical adjustment or as a replacement if necessary since the NRAs should have some flexibility to take into account technical adjustments or models appropriate for the particular member state.

On which data should the ERP be based?

68. The Commission's working hypothesis is that a common (notional) EU value should be applied to estimate the ERP, by using the DMS European ERP, calculated as an arithmetic average, consistent with the calculation of the RFR in order to provide regulatory predictability.
69. In theory there should be a connection between the risk free rate (RFR) and the ERP, which is why the Commission suggests a common EU RFR and ERP. However, BEREC does not see this as an absolute condition. The majority of member states favour domestic 10-year government bonds to calculate the risk free rate. The calculation of the ERP could therefore be based on the appropriate government bonds in relation to the target market.
70. The Commission background document use ERP values from 2010 where the combined EU value is 5.2 percent. Consequently, the Commission argues that the European ERP taken from DMS is in line with the Brattle report and what most European NRAs currently use. However, the ERP value derived from DMS varies over time and the 2016 value for Europe is 4.4 percent, 0.8 percentage points lower compared to 2010. DMS data covering the period 1900-2016 show quite a large range of values for the implied market return within Europe as the following graph illustrates.³⁷ This implies that one single ERP for all member states hardly capture the relevant level of excess return that investors require on national markets.

³⁶ Brattle, Calculating the Equity Risk Premium and the Risk-free Rate, 26 November 2012, paragraph 4.5. See also Damodaran, 2015, p. 96 and 104.

³⁷ The implied market return is calculated as the ERP obtained from DMS for the different countries plus a five year average for 10-year national government bonds.

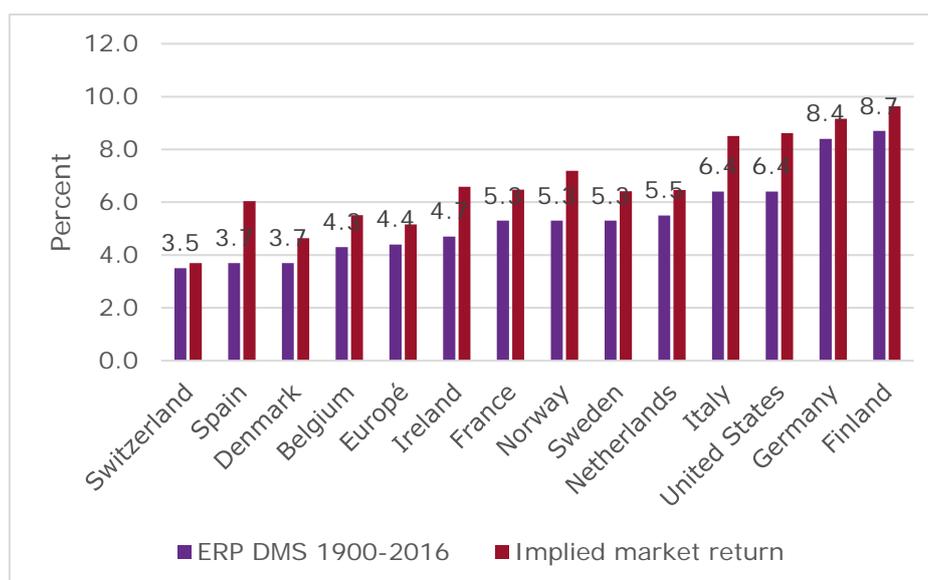


Figure 1: ERP and implied market return (RFR plus ERP DMS)

71. *Stehle* argues when setting the German WACC that due to the importance of data quality when calculating historic ERP, only DMS data from the United States, United Kingdom and Germany should be used³⁸. As the historic assumptions affect the different countries ERP's some amount of care should be taken before using the DMS off the shelf ERP numbers.
72. It is not without a challenge to establish a common ERP. It calls for a regulatory judgement which could be achieved by using DMS ERPs from a basket of relevant countries and from that number establish a range from which a country specific ERP could be derived depending on country specific factors.
73. From an investor point of view there is plenty of evidence that supports a bias in favour of domestic equities despite known benefits of diversification.³⁹ This could support the idea that domestic indices therefore provide appropriate estimates of domestic equity risk and should at least partially be included in the ERP. There is also evidence of strong co-movements between national stock markets in developed countries.⁴⁰ An investor without geographical constraints would not invest in a market in which the risk adjusted return would be lower. This means that the geographical scope could stretch from a specific country, the Eurozone, the entire European continent or even a global scope including the United States to serve as a relevant estimate for the EU ERP.
74. The fact that a large number of member states are not included in the DMS data, and that there is a wide spread for DMS data between the different European countries in combination with BEREC's consideration that domestic government bonds should be

³⁸ R. Stehle 2016, Setting the Telecom WACC: Procedures and Estimates of the German Network Regulator Bundesnetzagentur.

³⁹ L. Tesar, I. Werner 1995, Home Bias and High Turnover, *Journal of International Money and Finance* 14 (4): 467–492; K. French, J. Poterba 1991, Investor Diversification and International Equity Markets. *American Economic Review* 81 (2): 222–226.

⁴⁰ Meric, Ilhan, Lan Ma Nygren, Jerome T. Bentley, Charles W. McCall (2015), "Co-movements of US and European stock markets before and after the 2008 global stock market crash", *Studies in Business and Economics*, vol. 10, issue 2, p 83-98.

used to calculate the risk free rate provide support of an EU basket approach which also could include United States as well as other relevant countries. In order to capture the relevant risk and thereby bridging the gap between the realised ERP that DMS provide, a regulatory judgement might be necessary to estimate the level of the expected ERP in the forward looking calculation of the WACC. This would enable NRAs to take full responsibility for the applied value on ERP if it was to be challenged by stakeholders and subject to legal processes.

Which calculation method to use (arithmetic, geometric etc)

75. Within the ERP puzzle the question of arithmetic and geometric averages is a well-studied topic. The EC favours the use of an arithmetic average as it provides transparency, is widely used and easy to understand. BEREC is of the view that both geometric and arithmetic average could be used in the calculation of the ERP. The arithmetic mean will always be equal to, or higher than a geometric average as negative numbers have less of an effect, illustrated by the fact that the average difference for DMS data is 80 basis point for the period 1900-2016. The implication of research, which captures qualities of the different averaging methods, is that the true market risk premium could lie between the arithmetic and geometric averages.⁴¹
76. The majority of the member states use arithmetic average in calculating the ERP, but some countries use a mix. Only two NRAs use a pure geometrical average. There is an abundance of scientific research that can support the use of either method, or a mixture, when calculating the ERP. Given that there is neither theoretical nor practical evidence for a specific method, BEREC is neutral with regard to the averaging method, but is of the opinion that NRAs should use a consistent averaging method across parameters.

4.3 Beta and gearing parameters

The Commission's proposals

77. The Commission proposes that beta should be estimated over a five-year period using weekly data and a European market index (consistent with the Commission's proposed use of a European RFR and ERP). The Commission also proposes that beta estimates should be based mainly on the domestic SMP operator but "subject to the values" of EU benchmarks. The Commission considers that estimating domestic betas could be less complex than EU benchmark betas. The Commission proposes that benchmark companies should meet certain eligibility criteria, including having investments in electronic communications infrastructure; shares that are liquidly traded; main operations in EU member states; an investment grade credit rating and no substantial M&A activity over the estimation period. The Commission does not consider that Vasicek, Blume, Bayesian or any other adjustments should be made to the beta estimates.
78. The Commission proposes that gearing should be estimated over a five-year period using the book value of debt. It considers that debt should only include long term debt

⁴¹ Indro and Lee 1997, Biases in arithmetic and geometric averages as estimates of long run expected return and risk premium.

(including finance leases) saying that in general short-term debt can be offset by cash. The Commission also said that NRAs could consider whether pension liabilities should be included in the debt estimation.

79. The Commission considers that the task of selecting EU benchmark companies and estimating betas and gearing could be done by BEREC or the Commission to minimise complexity and enhance transparency.

BEREC's response

Beta estimation

Base beta on a benchmark group of European telecoms companies or on SMP operator

80. In the absence of a pure play operator providing relevant regulated services, BEREC agrees that, when estimating betas, weight could be placed on the betas of a benchmark group of European telecoms companies or the domestic SMP operator's beta.⁴²
81. However, the choice of approach depends on domestic circumstances and the NRA's broader approach to regulating prices. For example, in some circumstances it may be appropriate to place more weight on the domestic SMP operator's beta where a significant proportion of its business is regulated, where the approach to setting prices is based on the SMP operator's costs or where there are particular risk factors that the regulator wants to take into account.⁴³ In other circumstances it may be appropriate to estimate the beta by reference to benchmark operators – for example where there are several operators with SMP (e.g. in mobile termination markets), the domestic SMP operator is not listed or where its regulated activities represent a small proportion of the business and, where a sample of companies could provide a more robust estimate of the beta or where the NRA's approach to setting prices is based on the costs of a hypothetical operator.
82. BEREC understands the Commission's proposal is that the beta is based mainly on the domestic SMP operator, but this should be cross-checked against the beta range of a pre-defined set of EU benchmarks. In general, BEREC considers that more weight should be placed on the betas of benchmark companies which may better approximate the systematic risk of the relevant services. Anyhow there may be circumstances where weight could also be placed on the beta of the domestic SMP operator. BEREC therefore proposes that beta should be based on EU benchmarks, with NRAs required to clearly explain where they have departed from this principle – this might include, for example, where a beta disaggregation approach is adopted (see below).

⁴² Table 4 of the WACC section of BEREC's 2017 'Regulatory accounting in practice' report (2017 BEREC report) shows that most NRAs currently use one of these two approaches, or a combination of both; the data for 2018 shows a slight trend towards using benchmarking.

⁴³ For example, Ofcom places weight on the BT beta (domestic SMP operator) because it incorporates the betas of regulated activities, many of BT's activities are regulated and it includes the systematic risk of BT's pension scheme. See paragraph A20.12, https://www.ofcom.org.uk/__data/assets/pdf_file/0020/112493/wla-statement-annexes-17-27.pdf (2018 Ofcom WLA Statement).

83. Under the Commission's proposals, it is not clear what it expects NRAs to do if the domestic SMP operator beta cannot be estimated (e.g. where it is not listed) or where it is outside the beta range of EU benchmarks (i.e. it is not clear to BEREC how the Commission expects the cross check to work in practice). It also is not clear whether the Commission considers if weight should be placed on the domestic SMP operator beta even where it does not meet the eligibility criteria it proposes for the EU benchmark group.⁴⁴ BEREC asks the Commission to clarify its position and to ensure its guidance is sufficiently detailed.
84. BEREC disagrees that domestic betas are less complex to estimate than EU benchmark betas – it is reasonably straightforward to estimate betas, but judgement is required when selecting parameter values as set out below. To ensure the approach to estimating betas is transparent, we consider the calculation should be easy to understand and replicate, and, as far as possible, be based on publicly available information.

Time horizon and sampling frequency

85. The 2017 BEREC report indicates that NRAs typically estimate beta using time horizons of between 1 and 5 years combined with daily or weekly sampling frequencies.⁴⁵ 2018 data collection confirms this main implementation approach.
86. BEREC recognises that beta estimates are sensitive to the choice of time horizon and sampling frequency and that it is necessary to strike a balance between stability (which might suggest longer time horizons), statistical robustness (which might suggest shorter sampling frequencies), consistency (which might suggest a time horizon consistent with the RFR) and the extent to which the data provides a guide to setting a forward-looking WACC (which might suggest shorter time horizons). In striking this balance, NRA's approach to setting beta may change over time and between decisions.
87. BEREC considers that a 5-year time horizon could provide stability and consistency with other parameters, but there may be circumstances where NRAs need to consider other time horizons to set an appropriate forward-looking beta.⁴⁶ We therefore propose that NRAs should clearly explain where they have departed from the use of a 5-year time horizon. BEREC does not consider that the Commission has clearly explained its preference for weekly data over other sampling periods. For example, using daily data would provide more observations and lower standard errors in the beta estimates. Given that sampling frequencies can have a significant effect on beta estimates, we believe that it is more important for NRAs to be consistent within their calculations on whether using daily or weekly data.

Choice of EU benchmark group

⁴⁴ For example, if the domestic SMP operator's shares are not liquidly traded.

⁴⁵ 2017 BEREC report, Table 4 and Figure 20. Some NRAs used monthly sampling with 5 year time horizons. A first analysis of the 2018 data shows that – as in 2017 – only 3 NRAs use 5 year weekly betas, the Commission's preferred methodology.

⁴⁶ For example, a financial crisis could affect beta estimates several years after the event – NRAs may wish to consider different time horizons to set a reasonable forward-looking beta.

88. The Commission's eligibility criteria for selecting benchmark companies broadly aligns with that set out in the 2017 BEREC report.⁴⁷ BEREC considers that additional criteria could include a) ensuring that the company does not represent a significant proportion of the market index, b) an analysis of the business activities of each company⁴⁸ and c) the inclusion of more companies from Europe and, potentially, outside of Europe. It was not clear whether the Commission's list of companies was illustrative (such that NRAs could select their own benchmark companies using these criteria) or whether it was proposing that these were the only benchmarks NRAs should consider. BEREC considers that an illustrative list would be the best option, with NRAs able to choose those benchmark operators most comparable to the relevant market. BEREC also would like to note that the same benchmark group should be used across the parameters if data is available.

Adjustments to equity betas

89. As noted in the 2017 BEREC report, some NRAs make adjustments to the equity beta and some do not.⁴⁹ We agree that equity betas should not generally be adjusted, but where NRAs consider an adjustment is necessary, they should clearly explain the reasons for this.

Choice of market index to estimate the equity beta

90. NRAs currently use a mix of domestic, European and global indices.⁵⁰ There are good reasons for using different indices, e.g. evidence on the extent of investor diversification⁵¹, the size of the index⁵² and consistency between the currency of the operator and the index and between the geographic focus of the index and ERP. BEREC considers that the Commission's proposal to use a European market index is most compelling for eurozone companies, but that NRAs should be able to use alternative indices where this is supported by evidence (e.g. investor home bias). In any case the index used should be consistent in terms of geographic region with the (benchmarking) data used for estimating beta.

Gearing estimation

91. We agree that for the purposes of de-levering the equity beta to estimate an asset beta, the time horizon for estimating gearing should be consistent with the time horizon for the equity beta – e.g. 5 years in the case of the Commission's recommendation. However, there may be circumstances where future gearing is expected to be different to historic gearing, so NRAs should be able to consider different time horizons for this purpose. As with beta estimation, BEREC considers more weight should be placed on the gearing of EU benchmarks rather than the domestic SMP operator (which may not have a typical

⁴⁷ See page 29, 2017 BEREC report.

⁴⁸ For example, the extent to which it is active in fixed line versus mobile operations.

⁴⁹ See page 36, 2017 BEREC report; this fact seems unchanged according to a first analysis of the 2018 data.

⁵⁰ See Table 4 and page 36, 2017 BEREC Regulatory Accounting Report.

⁵¹ For example, there is continued evidence of investor 'home bias', where the majority of investments are made in the investors home country.

⁵² For example, it may be inappropriate to use an index where the SMP operator represents a large proportion of that index.

gearing structure), with NRAs required to explain where they have departed from this principle. In any case, the determination of gearing should be consistent with beta estimation in terms of the weight placed on EU benchmarks and the domestic SMP operator.

92. In terms of the gearing calculation:

- BEREC agrees that book values can serve as a proxy for the market value of debt;
- BEREC agrees that debt should include long term debt including long term finance leases;
- BEREC considers that NRAs should have flexibility to consider how to take account of short term debt and cash;⁵³
- BEREC agrees with the Commission's proposal that NRAs could consider whether it is appropriate to include pension liabilities in the debt calculation.⁵⁴

4.4 Cost of debt

The Commission's proposal

93. Section 4.4 of the Commission document proposes that “[...] *the cost of debt would be estimated using: the corporate bond of the SMP operator, but subject to the condition that the yield on this bond is within those estimated for a benchmark of peer EU companies.*”

94. The Background document suggests using a corporate bond with a 10 year maturity, weekly frequency data, with an averaging period of five years to calculate the cost of debt. This would have to be compared with EU peers (presumably with similar data sets). It is unclear where this data would be publically available and hence there may be a lack of transparency in deriving this value.

95. A complication could arise in the benchmarking of “peer EU companies” as there may not be a like-for-like basis of comparison. Some companies may be strictly infrastructure providers.

96. Others may provide fixed and mobile services. Others may be part of a group of companies trading in both telecommunication and non-telecommunication services.

BEREC's comments

97. BEREC understands the proposal by the Commission which considers SMP corporate bonds to be at the basis of the calculation.

⁵³ The Commission's proposal seems open to considering how to treat short term debt and cash. For example, short term debt could be significant for some operators and it may not always be appropriate to assume that cash is available to reduce debt.

⁵⁴ E.g. Ofcom recently considered this issue and concluded that while pension schemes represented a future operating liability they were not akin to financial gearing and it therefore excluded pension obligations from the gearing calculation. (See paragraphs A20.133 to A20.138 of Ofcom 2018 WLA Statement.)

98. While most operators issue corporate bonds, not all of the bonds have a 10-year maturity which means that in practice this proposal of the Commission is difficult to implement. This implies that the data has to be interpreted with some flexibility, e.g. the proposal to consider a 5-year-averaging window and 10-year bond maturity should be properly adapted to take into account data availability.
99. However, some operators do not issue corporate bonds, or the information may not be available for free online. This lack of publically available information would affect the principle of transparency.
100. Where corporate bonds are not traded publically the use of the operator's credit rating to estimate the debt premium could be an alternative approach. This could be done by collecting credit rating from an operator's website and then comparing this with the credit risk premium in a general table from Professor *Aswath Damodaran*⁵⁵ or by reference to yields on an index of bonds with a similar credit rating.
101. It would therefore be preferable to allow the flexibility to use this alternative method in the future where the need arises.
102. When setting cost orientated prices in regulated markets the costs are based on a hypothetical efficient operator. It would therefore make sense to use the same assumption for the cost of debt. It would therefore also make sense to have a target debt rating (s) (for different services). A target debt rating(s) could be based on market ratings for telecommunications companies. Once a target debt rating(s) is decided upon the debt premium could be determined using the spread between the target debt rating and the risk-free rate. The debt premium could then be adjusted by country for country and industry risk as outlined next.

Calculating using risk free rate and debt premium

103. The formula for the cost of debt is given in section 3 of the Background paper as:
 $RD = RFR + Debt\ Premium.$
104. However the section on the cost of debt looks to estimate the cost of debt using corporate bonds.
105. Adherence to the four regulatory principles would be more likely through calculating the cost of debt using the risk free rate and a debt premium. Specific debt related matters could then be addressed through the debt premium.

Debt premium

106. There is no mention in the background paper on how the cost of debt might be estimated. This would need to be made transparent if the cost of debt was to be estimated using the risk free rate and the debt premium.
107. The debt premium can be considered as being for

⁵⁵ http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ratings.htm.

- Industry specific⁵⁶ risk.
108. It may be inappropriate to use the same debt premium for different telecommunication service providers as each may have a different risk profile. For example, the risk profile of a mobile operator may be different to that of a fixed line infrastructure provider or an operator offering both fixed and mobile services.
109. Within fixed line services there may be varying degrees of risk. The rollout of fibre within urban centres where there may be alternatives available is likely to have a different risk profile to the rollout of fibre to more remote regions in countries where there is limited competition and some form of state intervention is considered necessary.
110. Section 5 in the background document covers this to some extent when it talks about disaggregating the cost of debt. However it is unclear as to how this might be done.

4.5 Inflation

111. According to the well documented and widely accepted *Fisher Equation*, the inflation rate is used to determine a real WACC (impact on inflation is removed) from the estimated nominal WACC (including the effect of inflation). To ensure a consistent approach RFR and inflation rate have to be based on the same time horizon⁵⁷.
112. The BEREC opinion compared to the method proposed by the European Commission is summarised in the table 2 below.

Table 2 Commission's proposed method of calculating the inflation rate vs BEREC opinion

	Method proposed by the European Commission	BEREC opinion
Inflation rate	European average	Domestic
Approach	Forward-looking forecast	Forward-looking based on historic data
Observed time frame	5 year	10 years

Use of an EU inflation rate

113. The **European Commission** proposes to use an EU-wide average value. This would be consistent with the Commission's suggested approach to determine RFR and ERP.
114. BEREC agrees with the Commission that it is obligatory to use a consistent approach to determine RFR and inflation rate. However, to ensure consistency with BEREC's pre-

⁵⁶ Country specific risks are addressed as part of the estimation of the RFR (see above Section 4.1).

⁵⁷ Prof. Stehle „Setting the Telecom WACC: Procedures and Estimates of the German Network Regulator Bundesnetzagentur“, November 2016

ferred method to determine the RFR using domestic bonds it would follow that the inflation rate is also determined using domestic indicators⁵⁸. A domestic approach would ensure that national values are used to estimate inflation. Thus the consistency principle is supported and no distortions are caused for non-eurozone countries.

Use of a 5-year inflation forecast average

115. The **European Commission** favours a forward-looking approach by arguing that investors will consider expected inflation over the lifetime of the bond, not historic (backward-looking) inflation. The Commission suggests that the forecast period used should be in line with the maturity of the bonds used to estimate the RFR, i. e. 10 years. However since there are no such long-term inflation forecasts, the ECB's five year inflation forecast is deemed to be appropriate.
116. **BEREC** does not fully agree with this approach. The estimation of the implicit GDP price inflator is dependent on many assumptions (such as private consumption, exchange rates, interest rates, public finance, customs charges, labour cost, industry performance etc.) and therefore contains many elements of uncertainty. The Commission does not provide a reference for the ECB's five year HICP (Harmonised Index of Consumer Prices) forecast; it is assumed that they refer to the ECB's SPF, which only includes the Eurozone⁵⁹. It is unclear to BEREC how this forecast could be applied to non-eurozone countries.
117. BEREC believes that, in line with the principle of predictability, a forward looking approach based on historic data to estimating inflation would be more appropriate as it minimises uncertainty. BEREC agrees with the Commission that the average should match the bond maturity used for the RFR, i. e. 10 years.
118. To create more consistency between member states BEREC suggests that eurozone NRAs consider using a harmonised method (i. e. HICP⁶⁰) for estimating country specific inflation.

5. Distinction between electronic communications services

The Commission's proposals

119. The Commission proposes to differentiate the WACC between regulated services by disaggregating the domestic SMP operator's beta and cost of debt, because:

⁵⁸ See BEREC argumentation in point 4.1

⁵⁹ ECB Survey of Professional Forecasters (SPF) is a quarterly survey of expectations for the rates of inflation, real GDP growth and unemployment in the euro area (3rd quarter 2018: 56 participants).

⁶⁰ ECB definition: in the euro area, consumer price inflation is measured by the Harmonised Index of Consumer Prices (HICP). It measures the change over time in the prices of consumer goods and services acquired, used or paid for by euro area households. The term "harmonised" denotes the fact that all the countries in the European Union follow the same methodology. This ensures that the data for one country can be compared with the data for another.

- It is likely to ensure greater consistency between the WACC estimated for individual services and the company's average overall WACC;
- It is likely to provide greater regulatory predictability compared to an approach using financial modelling to differentiate between services;
- It is likely to be a more efficient estimate of the risk of the company's activities; and
- It is likely to be a simpler and more easily understood approach than one based on financial modelling, thereby being more transparent to stakeholders.

BEREC's response

120. It is important to recognise that some NRAs currently calculate different betas for different markets, differentiating in particular between fixed and mobile activities. This may require a beta disaggregation approach where one company is the SMP operator in several markets, but different betas could also be obtained using different benchmarks (in this example a benchmark group of fixed line operators and a benchmark group of mobile operators). In this section we focus on the Commission's proposals regarding beta disaggregation and cost of debt disaggregation.

Beta disaggregation

121. Ideally, beta should reflect the systematic risk specific to each regulated service. Unfortunately, identifying betas specific to each regulated service is difficult given the absence of "pure-play" listed companies providing the regulated services in question. As such, NRAs often assume that the beta for regulated services can be approximated by reference to the betas for a benchmark group of telecoms operators or the domestic SMP operator (as noted in Section 4.3).

122. BEREC agrees that, in some circumstances it may be possible to estimate a more robust beta for the regulated services of interest. This may be the case where:

- there are a priori reasons for thinking that the systematic risk faced by the regulated services in question is different from that faced by the domestic SMP operator or benchmark telecoms operators for which beta estimates can be estimated; and
- there is evidence which can be used to assess variations in systematic risk, e.g. the existence of benchmark firms that are close to pure play comparators or other quantitative analysis which could inform adjustments to beta.

123. In the absence of "pure-play" benchmarks, disaggregating the domestic SMP operator's beta may allow the NRA to obtain a better estimate of the beta associated with regulated services where these conditions are met. One NRA considers that a disaggregation approach is arguably more appropriate where a significant part of the domestic SMP operator's business is regulated, since this means a greater proportion of the systematic risk measured by the beta relates to regulated services.⁶¹ Where it is not possible to robustly

⁶¹ For example, Ofcom disaggregates the BT beta and regulated services represent around 66% of BT's returns and 41% of its capital employed. See footnote 249 of annex 20 to Ofcom's 2018 WLA Statement.

estimate the domestic SMP operator's beta, it needs to be considered, if a disaggregation approach is appropriate.

124. Disaggregation would typically apply to the domestic SMP operator's asset beta and would be informed by the asset betas of a range of different benchmark companies.⁶² While disaggregation of the asset beta is possible, it is more complex than applying a single asset beta to all regulated services and it relies on regulatory judgement and the availability of information on:

- asset betas for relevant benchmark companies,
- which activities can sensibly be grouped together for the purpose of disaggregation,
- the relative weights of each disaggregated part.⁶³

125. Therefore, BEREK considers that it may be possible for some NRAs to disaggregate the domestic SMP operator's asset beta where information and conditions permit, but it is a more complex approach which will not be appropriate in all circumstances. BEREK does not consider that the Commission should require NRAs to distinguish between different regulated services using a beta disaggregation approach.

Cost of debt disaggregation

126. In principle, a firm facing lower systematic risk will face a lower cost of raising debt finance (for a given level of gearing) than a firm facing higher systematic risk. Therefore, where it is possible to disaggregate the domestic SMP operator's asset beta to account for differences in systematic risk, BEREK agrees that it may be appropriate to also take account of any effects differences in systematic risk would have on the cost of debt.

127. Differences in the cost of debt could be estimated by considering differences in assumed credit ratings for the disaggregated parts of the domestic SMP operator's business. Like beta disaggregation, this approach relies on regulatory judgement and the availability of evidence on credit ratings to inform the cost of debt disaggregation. Evidence from Ofcom's disaggregation of BT's debt premium indicates that this may not have a significant effect on the overall WACC estimate.⁶⁴

128. Therefore, like beta disaggregation, BEREK considers that it may be possible for some NRAs to disaggregate the domestic SMP operator's cost of debt where information permits, but does not consider that the Commission should require NRAs to do this.

129. In line with the principle of consistency BEREK would consider it useful to have general principles in case NRAs choose to disaggregate the beta and the cost of debt.

⁶² For example, Ofcom disaggregates the BT asset beta into three parts. The asset beta of each part is informed by asset betas for benchmark utility companies, telecoms operators and international ICT providers. Using asset betas means differences in gearing across benchmark companies do not affect the disaggregation estimates.

⁶³ For example, the weightings used by Ofcom are informed by metrics related to EBITDA and share of enterprise value.

⁶⁴ In its 2018 WLA decision, Ofcom applied a debt premium of 1.0% to the lowest-risk disaggregated part of BT and 1.1% to the medium-risk part of BT – i.e. a difference of only 0.1%. With gearing at around 30%, this difference in debt premium would only have a small effect on the WACC for each disaggregated part.

6. Appropriate transition period

130. As outlined above BEREC agrees with the general principles and the analysis of the 2018 data collected from NRAs shows a continuing trend of NRAs' convergence in the methodological approach. However, NRAs need some flexibility to take account of national specificities. In light of these four principles and the flexibility needed, BEREC asks the Commission to reconsider its proposal for a transitional period of three years. In particular more emphasis should be given on ensuring predictability and consistency within the parameter calculation which would generally lead to a longer transitional period. Also, the cycle of the market reviews should be taken into account. BEREC is confident that following the general framework set out with the four principles the trend towards convergence in the methodological approach will be reinforced as NRAs (will) follow them systematically when calculating the WACC, but this process requires sufficient time.
131. In any case BEREC asks the Commission to take account of the impact of changes to the WACC values related to the methodological proposals by the Commission. The importance of the WACC in the regulated price implies a high sensitivity to changes.
132. BEREC would also like to state that it is ready to cooperate with the Commission on the text of the guidance given the complexity of the WACC calculation.