WACC parameters Report 2020

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Background

- The non-binding **Notice** of the Commission on the calculation of the **cost of capital** for **legacy infrastructure** in the context of the Commission's review of national notifications in the EU electronic communications sector and the Commission Staff Working Document (SWD) OJ 2019/C 375/01 of 7th Nov. 2019 is applied by the Commission as of **1st July 2020** to assess notifications of NRAs.
- The Notice aims to ensure a **consistent** calculation of the WACC by NRAs thereby contributing to the development of the internal electronic communications market.
- The cost of capital is the core element of any regulatory pricing decision NRAs take.

- The **WACC parameters Report 2020** contains for each of the WACC parameters the results of BEREC's calculations following the Notice as closely as possible. NRAs are assumed to take into account those parameter values in their own calculations.
- BEREC worked carefully and cross-checked all results describing in detail the calculation steps so that NRAs can replicate the results and can be confident that they are based on reliable data, robust and derived using state-of-the art professional standards.

- The following slides give an overview of the structure of the report, the main points of the calculations, the results and how "tricky" issues were solved.

- The **2020 Report** is the first report and may be improved in the future yearly update.

- In order to allow NRAs to reference it, it was published before 1st July 2020.

General principles

- In order to get robust results and enable all NRAs to replicate the estimations BEREC follows 3 general principles:

1. Follow the Notice as closely as possible, which mainly refers to the methodologies to be used for the estimations;
2. Be transparent, using public data where possible or using data which is widely accepted, which refers to the data sources to be used for the estimations;
3. Explain every step of the calculation and proceed in a straightforward manner, which refers to the calculations as such.

- For each of the parameters calculated BEREC explains the following:
  - the application of the methodologies according to the WACC Notice,
  - the assumptions and choices made,
  - the data and data sources used,
  - the steps of the calculations,
  - the results.

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Structure of the WACC parameters report

The structure of the report follows the WACC formula and explains how each parameter is calculated:

- Chapter 1 General introduction
- Chapter 2 explains the estimation of the **RFR** (risk free rate).
- Chapter 3 sets out the **peer group** and provides criteria that NRAs can use to remove peer group members to take account of national specificities.
- Chapter 4 explains the estimation of the **debt premium** and the **cost of debt** for each member of the peer group.
- Chapter 5 explains the estimation of the **beta** and **gearing** for each member of the peer group.
- Chapter 6 contains the calculation of the single **EU-wide ERP** which is a key parameter and certainly the most difficult to calculate. Therefore it is put at the end of the Report.
- Chapter 7 summarizes all results in an overview table for easy reference. Furthermore this chapter also touches upon taxes and inflation (section 6 of the Notice) and contains a short section on possible future effects of the corona crisis.

Main points (1)

- BEREC estimated the parameters of the WACC formula:
- WACC = $[(\frac{E}{D+E})$ x (RFR + ß x ERP)] + $[(\frac{D}{D+E})$ x (RFR + Debt Premium)]

- The cut-off date was generally **April 1st 2020**.
- **RFR:** using Eurostat/ECB data for 10-year government bonds with a 5 year averaging window (April 2015 – March 2020) which means the low interest rate period is reflected more (gets more weight)
- The **BEREC peer group 2020** consists of 14 companies of the EU: BT, DTAG, Elisa, KPN, NOS, Orange, Proximus, Tele2, Telecom Italia, Telefonica, Telekom Austria, Telenet, Telia, Vodafone; NRAs can take out companies, but not add others.
- BEREC follows the Notice using the standard approach of the financial market theory known as Capital Asset Pricing Model (CAPM) to estimate the **cost of equity.**
- The **EU-wide ERP** was estimated based on historical time series using the DMS data (in the form of the Morningstar data base) for 13 EU MS; for 12 EU MS a set of shorter time series was put together and returns calculated with the so-called implied pricing method; for 3 EU MS no data was available.
- Calculating an **EU-wide ERP** is the novelty of the Notice and was the most challenging parameter. It assumes that ERPs of national markets are converging as the EU capital market is evolving and ultimately reaching a *common* EU capital market. It assumes an investor with an EU perspective perfectly diversified in the EU, i.e. holding an efficient portfolio of assets in EU member states (no home-bias).

Main points (2)

- **Debt premium/cost of debt:** For each peer group member pairs of corporate and government bonds of the member state where the company has its headquarters with a residual maturity of 10 years (or as closely as possible) were built to calculate the debt premium as the Notice foresees that the cost of debt is derived by summing up the debt premium with the *domestic* RFR (and not vs. a synthetic RFR).
- Weekly data was used and the debt premium calculated as the arithmetic mean of the 5 year averaging window (identical to the one used for the RFR)
- **Beta/Gearing:** Following the CAPM beta and gearing were calculated for each member of the peer group assuming an **efficient investor** as the Notice/textbook foresees it and using the same 5 year averaging window:
    - Estimate the equity beta for each company of the peer group;
    - Estimate the gearing level for each company in the peer group;
    - Derive the asset betas from each company in the peer group, including the SMP operator (using the equity beta and gearing level for each company);
    - Relever the asset beta to obtain the final equity beta.

Main points (3)

- **ERPs and EU-wide ERP:** As foreseen in the Notice BEREC used historical returns time series; however the DMS data over 120 years (1900 – 2019) was available only for 13 EU MS: AT, BE, DK, FI, FR, DE, IR, IT, NL, PT, ESP, SWE, UK (EU MS until 31/01/2020).
- For 12 EU MS only shorter time series were available (because in most of these EU MS no capital market existed over the period of the planned economy). For BG, HR, CY, CZ, EL, HU, LV, LT, PL, RO, SK, SI shorter time series were built and the ERP estimated with the implied pricing method.
- For 3 EU MS no data was available: EE, LU, MT.
- To build an **EU index**, the equity component was derived by weighting with **market capitalisation** of each country and using a **GDP** weight for the bond component:
    - As due to limitations in data availability no year-by-year weighting was possible, BEREC applied a 5-year averaging window (2014-2018);
    - This leads to a “fixed weightings along the years” instead of the rebalancing used by DMS and implies a slight (non-material) upward bias;
    - To be able to use both data series in one EU index, BEREC applied an “**available years weighting**” whereby shorter time series have a lower weight.
- The result is that the single **EU-wide ERP** is between the geometric mean (GM) as the lower boundary and the arithmetic mean (AM) as the upper boundary: EU-wide ERP = 4.18% (GM) – 5.31% (AM)

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Overview of results

Chapter	Parameter	Results	Reference (Table)
Chapter 1	Introduction WACC formula		
Chapter 2	**RFR**	RFR for each EU member state	Table 2
Chapter 3	**Peer group**	BEREC Peer Group 2020 comprising 14 companies	Table 3
Chapter 4	**Debt premium,** **Cost of debt**	Debt premium, Cost of debt for each of the 14 companies of the BEREC Peer Group	Table 4
Chapter 5	**Equity beta, Gearing,** **Asset beta**	Equity beta, Gearing, Asset beta for each of the 14 companies of the BEREC Peer Group	Table 6
Chapter 6	**ERP**	EU-wide ERP	Table 10 + 11
Chapter 7	Summary	All WACC parameters as calculated by BEREC	Table 12 + 10

Solving “tricky“ issues

- BEREC Peer group 2020
  - How to ensure it is representative for the whole EU?
    Solution: starting from the illustrative table and applying the adjusted criteria plus looking at the STOXX Total Market Telecommunications index – BEREC‘s peer group 2020 represents ar. **80% by market capitalisation** of this index

- Equity Risk Premium (ERP)
  - How to estimate a single EU-wide ERP?
  - How to „merge“ long time series for 13 EU MS (from Morningstar) with short time series for 15 EU MS (calculated bottom-up)? Solution: „***Available years weighting***“
  - How to explain the resulting margin of 4.18% (GM) – 5.31% (AM)?

- BEREC considers that the single **EU-wide ERP** is in the margin of **4.18% (GM) – 5.31% (AM)**. In BEREC‘s view this fulfills the purpose of the Notice as it unifies the ERP estimation of NRAs. Furthermore it reflects the fact that the EU capital market is not yet fully completed .

- Given that the margin is so narrow, it also implies that national ERPs will **converge** more when NRAs start applying the EU-wide ERP compared to the current situation with the standard deviation expected to go down considerably.

- Recognizing that the Notice favours the AM, NRAs not using the AM would need to provide an explanation justifying their result, although within the margin.

Relevant documents

- Notice: https://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:52019XC1106(01)&from=EN

- SWD: https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=62834

- BEREC WACC parameters Report 2020 (BoR (20) 116: https://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/9364-berec-report-on-wacc-parameter-calculati_0.pdf

Thank you!

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