

# WACC parameters Report 2021

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Body of European Regulators  
for Electronic Communications

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The logo for BEREC (Body of European Regulators for Electronic Communications) features the word "BEREC" in a bold, sans-serif font. The letters "B", "E", "R", and "E" are blue, while the "C" is maroon. A blue curved line underlines the "R" and "E", extending from the bottom of the "R" to the bottom of the "E".

- 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 6th Nov. 2019 is applied by the Commission as of **1st July 2021** to assess notifications of NRAs – the transitional one-year period ended on 30st June 2021.
- 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 **WACC** is used to assess the **cost of capital** as an important part of the efficient cost for access to the legacy network in price control obligation decisions, i.e. is a **cost parameter**.
- As the Notice has not changed, the **WACC parameters Report 2021** follows the **same methodology** as in the 2020 Report providing consistency over time. Thus changes in the results can be attributed to factual developments, mainly Brexit which implies that the EU-ERP for the EU-27 NRAs is calculated without the UK, i.e. EU27-ERP.
- Additionally BEREC calculated a separate EU/EEA-ERP incl. the EU27 plus Norway + Iceland for use only by Nkom + PFS.
- The **Report 2021** 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 WACC calculations.
- The **parameter values** are the result of complex calculations where BEREC can draw on the experiences of last year and improved data quality using the Bloomberg terminals, and the latest Morningstar (DMS) data set for the calculation of the EU-ERP (and EU/EEA-ERP).
- The work has been done carefully and all results were cross-checked, the detailed description of the calculation steps allow NRAs to replicate the results. Thus NRAs + stakeholders can be confident that the results are robust and derived using state-of-the art professional standards.
- In order to allow NRAs to reference the Report 2021, it was published before 1<sup>st</sup> July 2021<sub>2</sub>

# Structure of the WACC parameters report

The structure of the report remained the same as in the Report 2020 and follows the WACC formula; it 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 touches upon taxes and inflation (section 6 of the Notice) and contains a short high level comparison of the Report 2021 with the Report 2020.

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

Countries weight depends  
on data availability for  
equity AND Bond

## EU-ERP estimation

$$ERP_t = \frac{(1 + \text{Equity Annual return}_t)}{(1 + \text{Bond Return}_t)} - 1$$

(logarithm difference)

Equity and bond index weighted average **through 5 years average:**

- **Market cap** (source: Bloomberg) for Equity
- **GDP** (source: Eurostat) for Bond index

Equity Annual return<sub>t</sub> = Weighted average over MC of each Equity annual return for countries available for each year

Bond Annual return<sub>t</sub> = Weighted average over GDP of each Bond annual return for countries available for each year

WE+NO (DMS Morningstar data): Equity and bond time series from index and return (P<sub>t</sub>/P<sub>t-1</sub>-1)

EE: (Bloomberg data) Equity<sub>Annual return</sub><sub>t</sub> = 1/(P/E+)  
Bond<sub>Annual return</sub> Bloomberg Barclays index P<sub>t</sub>/P<sub>t-1</sub>-1

Price over earnings ratio

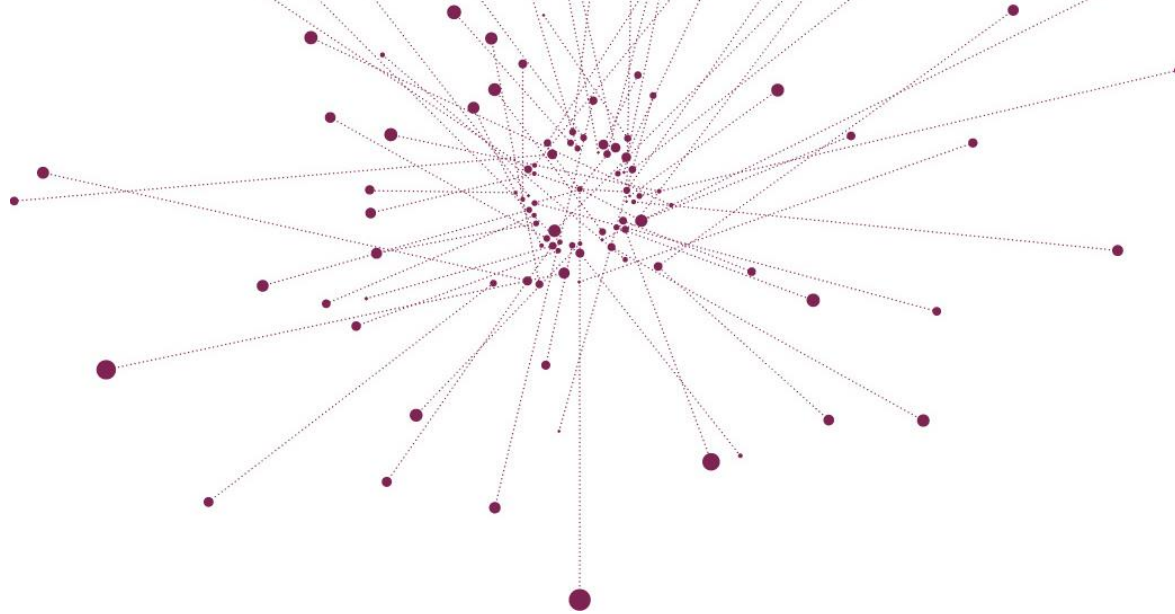
**EU-ERP is the arithmetic mean over 121 years time series data (1900-2020)**

Bulgaria	SOFIX Index
Croatia	Crobex Index
Cyprus	CYSMMAPA Index
Czechia	PX Index
Greece	ASE Index
Hungary	BUX Index
Iceland	Icexi index
Latvia	OMX Riga Index
Lithuania	OMX Vilnius Index
Luxembourg	LUXX Index
Poland	WIG Index
Romania	BET Index
Slovakia	SKSM Index
Slovenia	SBITOP Index

Country	Geometric mean%	Arithmetic mean%	Available years weight
Austria	2.5	21.1	100% (121/121)
Belgium	2	4.1	100% (121/121)
Bulgaria	7.94	8.59	12.40% (15/121)
Croatia	3.6	4.29	12.40% (15/121)
Cyprus	27.4	29.26	4.96% (6/121)
Czechia	2.68	3.12	12.40% (15/121)
Denmark	3.3	5	100% (121/121)
Estonia			
Finland	5.2	8.8	100% (121/121)
France	2.9	5.2	100% (121/121)
Germany	4.8	8.1	98.34% (119/121)
Greece	6.4	7.8	16.53% (20/121)
Hungary	2.96	3.76	16.53% (20/121)
Ireland	2.6	4.5	100% (121/121)
Italy	2.7	6.1	100% (121/121)
Latvia	8.83	9.64	13.22% (16/121)
Lithuania	3.74	4.47	13.22% (16/121)
Luxembourg	2.58	2.83	4.13% (5/121)
Malta			
Netherlands	3.2	5.4	100% (121/121)
Poland	1.10	1.73	16.53% (20/121)
Portugal	5.1	9.1	100% (121/121)
Romania	10.6	13.3	12.40% (15/121)
Slovakia	2.36	2.65	13.22% (16/121)
Slovenia	3.88	4.34	13.22% (16/121)
Spain	1.3	3.3	100% (121/121)
Sweden	3.2	5.4	100% (121/121)
EU-ERP	4.18	5.50	
Norway	2.5	5.3	100% (121/121)
Iceland	2.78	2.99	9.09% (11/121)
EU/EEA-ERP	4.18	5.48	

2021 value increases mainly due to «Brexit effect»

- The WACC methodology as provided for in the Notice and the BEREC WACC parameters Report carefully balance consistency, transparency and continuity, i.e. aiming to reflect market realities of 27 EU Member States as well as the convergence towards an EU-wide capital market. The WACC Notice aims to harmonize the methodology, not the WACC values.
- BEREC considers that the appropriate value of the **EU-ERP** is **5.50% (AM)** slightly increasing from last year's value (5.31% (AM)) which is due to the **one-off effect of BREXIT**.
- The EU/EEA-ERP is 5.48% (AM), i.e. nearly the same as the EU-ERP.
- The BEREC peer group 2021 is almost identical to last year, only BT drops out and as companies of the EU/EEA area could be included as long as they meet the eligibility criteria, Telenor replaces BT, all other peers remain in the peer group of 14 companies.
- ETNO criticizes the methodology of the Notice as well as the BEREC WACC parameters Reports trying to prove that the parameter values estimated were too low in the view of ETNO.
- However, in BEREC's view the results based on the application of the WACC Notice reflect properly the market reality, i.e. the fundamental factors driving the cost of capital:
- For the calculation of the cost of equity the Notice foresees a **CAPM** approach based on **long term historic data series (DMS)** to catch long term trends of returns rather than reflecting short term investor expectations and to smooth out short term volatilities;
- The CAPM assumes a **rational investor** acting in an **efficient capital market** which is the state of the art approach to estimate the cost of equity (as a fair reward for taking the risk to invest) and thus provides *objective* results of expected returns based on the comprehensive historic data series;
- BEREC points out the advantages of this *evidence-based approach* instead of relying on „survey data“ of investors' *subjective* expectations.
- Using the same methodology as previously allows to catch the effect of the continued low interest period which is reflected in low(er) risk free rates for nearly all Member States.
- NRAs are using their judgment when setting the WACC and taking into account the results of BEREC's estimation leads to predictable and consistent WACC values across the EU



Thank you!

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# 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, which refers to the data sources to be used for the estimations;
  3. Explaining every step of the calculation and proceeding 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.