ANACOM AUTORIDADE NACIONAL DE COMUNICAÇÕES

DECISION

ABOUT

the cost-of-capital rate for CTT – Correios de Portugal, S.A.

(2018 financial year)

ANACOM

2019

ANACOM AUTORIDADE NACIONAL DE COMUNICAÇÕES

Contents

1. Framework

Pursuant to applicable legislation, CTT – Correios de Portugal, S.A. (henceforth also designated as CTT), as provider of the universal postal service (UPS), is required to have in place a cost accounting system (CAS) that allows the separation of accounts between each of the services and products that make up the Universal Service (US) and those which do not form part of the universal service, so as to allow, in particular, the establishment of universal service net costs (USNC) as well as the separation between costs associated with the various basic operations forming part of postal services (clearance, sorting, transport and distribution)[1] on the basis of consistently applied and objectively justifiable cost accounting principles.

As the National Regulatory Authority (NRA), it is incumbent on ANACOM[2]: (i) to approve the CAS submitted by the USP; (ii) to ensure that its correct application is verified by a competent body, independent of the USP; and, (iii) to publish every year a statement of conformity of the USP CAS and of the results obtained.

The CTT CAS that has been submitted regularly to ANACOM is based on the Fully Distributed Costs (FDC) methodology, thus including all expenses incurred by this operator, plus a reasonable margin of return, which corresponds to the cost-of-capital, thus aiming to meet obligations arising from: (i) legislation in force; (ii) determinations and recommendations issued by ANACOM further to annual audits to the CAS; and (iii) guiding principles defined by this Authority (1996)[3], according to which the sum of allocated expenses (current wording given by the Accounting Standardisation System - ASS - to the concept of costs) in the CTT CAS must correspond to the total of expenses borne, plus a reasonable margin of return.

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1 Article 15 of Law No. 17/2012, of 26 April, in its current wording, and paragraph 1 of Base XIII of the Bases for the Concession, approved by Decree-Law No. 448/99, of 4 November and republished as an Annex to Decree-Law No. 160/2013, of 19 November.

2 Paragraph 4 of article 16 of Law No. 17/2012, of 26 April, in its current wording.

3 Letter ICP-192/96 of 02 February.

Directive 2008/6/EC, amending the Postal Directive (Directive 97/67/EC, of 15 December), in paragraph 3 of part B to Annex 1, lays down also that: "*The calculation*[4] *shall take into account all other relevant elements, including any market benefits which accrue to a postal service provider designated to provide the universal service, the entitlement to a reasonable profit and incentives for cost efficiency*".

In addition, this understanding is also supported by the Postal Law[5], which considers that the USP has the right to obtain a reasonable profit, represented by the cost-of-capital, reflecting the risk incurred in investments made to provide the US (point b) of paragraph 3 of article 19).

The concept of reasonable profit established in the guiding principles of the CTT CAS, in line with the Postal Directive and the Postal Law, has entailed the incorporation of the cost-of-capital, as it reflects the opportunity cost expressed by the rate of return required by investors to finance a given investment, bearing in mind the likely return of alternative investments and a comparable business risk.

In the scope of postal regulation, the European Committee for Postal Regulation (CERP) has strengthened the understanding that WACC (Weighted Average Cost-of-Capital) is the most appropriate method to determine the cost-of-capital[6], as this is a methodology widely used in other fully or partly liberalised sectors, but still subject to regulation (e.g. electronic communications, electricity, gas, etc.)

In the context of postal regulation, the determination of the cost-of-capital rate seeks: (i) to ensure the right incentives to investment on the part of the universal postal service (UPS) provider; (ii) to ensure that there are no market distortions, through discriminatory and anti-competitive practices; (iii) to remove any barriers to the entry of new competitors; and (iv) to protect consumers from excessive prices.

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4 Of the universal service net cost.

5 Law No. 17/2012, of 26 April, in its current wording, transposing Directive 2008/6/EC of 20 February 2008 to the national legal system.

6 "*Recommendation on best practices for cost accounting rules III*" (page 25) - CERP - 7 May 2009.

ANACOM thus considers it essential to define a methodology that allows the establishment, without any accounting and analytical constraints, of the cost-of-capital rate that is appropriate to compensate investments made by regulated postal companies in providing the US, as well as of a mechanism that allows the revision of its parameters and which not only entails a greater update of the cost-of-capital rate in the light of the macroeconomic background in which the USP operates, but also results in increased transparency and regulatory certainty.

By deliberation of its Board of Directors on 02.11.2017[7], ANACOM has defined its methodology for calculating the cost-of-capital rate for CTT, applicable to 2018 and subsequent financial years.

The *ex-ante* establishment of transparent rules governing the determination of the cost-of-capital rate contributes to a predictable environment to which agents may adjust, anticipating and managing their expectations more effectively. Moreover, when ex-ante standards are set out, the need for subsequent investigations, which are typically complex, lengthy, and potentially the matter of disputes, is reduced.

In this context and so as to determine the cost-of-capital rate to be used by the CTT in its CAS, for the 2018 financial year, which appropriately allows a reasonable profit to be obtained, taking account of the risk incurred in investments made to provide the US, ANACOM awarded to Mazars & Associados, SROC, S.A. (henceforth Mazars) the critical revision of the current methodology and the updating of the data necessary to calculate each parament of the capital cost rate, a matter described in this document and which forms part of the report "*Determining the cost-of-capital rate for CTT – Correios de Portugal, S.A.– for the 2018 financial year*", drawn up by Mazars (Annex 1).

2. Cost-of-capital rate

ANACOM's deliberation of 02.11.2017 defined the methodology to be used by the CTT in calculating the cost-of-capital rate for its CAS, and also defined the methodology for

[7] https://www.anacom.pt/render.jsp?contentId=1423147.

determining the various parameters considered, as well as the information sources to be utilised.

2.1. Methodology

The methodology defined in ANACOM's deliberation of 02.11.2017 for calculating the cost of capital, in accordance with its previous determinations, was based on the (pre-tax) formula for the weighted average cost of capital (WACC), on the basis of the capital asset pricing model (CAPM), to calculate the cost of equity.

In addition, it is important to also mention that, as regards the parameters which are calculated based on a benchmarking methodology using comparable companies, the criteria used in the choice of these companies is based on the choice of entities which (i) operate in the postal sector in markets with an equivalent maturity to the domestic market; (ii) have securities traded (shares) in organised stock exchanges; and (iii) have an offer of products and/or services similar to those provided by CTT.

As such, the revision of the eligibility of comparable entities, carried out by Mazars (see Annex I), did not identify: (i) that there were significant changes to the business model of the selected companies, or the lack of at least 80% of the observations which could imply the exclusion of any of these entities, and (ii) any other company which could be considered comparable to be hereby included, therefore concluding that the benchmark to be used should remain unchanged given that defined in ANACOM's deliberation of 02.11.2017[8] (see Table 1):

Table 1. Benchmark of comparable companies

Comparable Company	Country
CTT	Portugal
Royal Mail	UK
Bpost	Belgium
Österreichische Post (Austrian Post)	Austria
Malta Post	Malta
PostNL	The Netherlands

[8] Methodology to calculate the cost-of-capital rate of CTT (2018 and subsequent financial years)

Moreover, as new privatizations of postal operators are expected to take place at the European level, it is understood that, where appropriate, the current benchmark should be revised and updated, not only on account of benchmark companies that for some reason are no longer considered to be comparable, but also to allow the inclusion of other comparable companies that may arise in the meantime, which not only meet the criteria referred to above but which also present a minimum stock listing history (two years) that may dilute any speculative changes in the value of shares in the first months on the stock market.

Notwithstanding the definition, a priori, of the methodology to calculate the cost-of-capital rate, and given that the current macroeconomic context advises a regular revision of parameters, it is considered that the referred parameters require an annual revision, on the basis of the methodology in force, being incumbent on ANACOM to determine the cost-of-capital rate applicable to each financial year, up to the first half of the year concerned, on the basis of the availability of elements required for its determination.

In this respect, in the case of situations where it is not possible to use all data, and respective series, required to determine parameters considered in the calculation of the cost of capital, either due to the absence of available information or to the occurrence of facts that call into question the continuity or validity of the series used, the calculation of the said parameters must, whenever possible, be performed in a way as close as possible to the methodology in force, only introducing the required deviations as necessary to address the absence and/or insufficiency of the information concerned.

In this sense, where it is found that databases that allow for the establishment of parameters show limitations, and that the application of the defined methodology is not possible, there are grounds for the respective change/replacement (only where it is not possible to guarantee the inclusion in the calculation of at least 80% of observations or of sources of information required for the establishment of parameters, considering that all comparable companies continue to comply with the selection criteria), which may be triggered by either party, by 31 May of the year concerned and subsequently submitted to a prior hearing of stakeholders and public consultation, otherwise the calculation of the value will simply be updated to the financial year concerned.

2.1.1. Pre-tax Weighted Average Cost-of-Capital (WACC)

In methodological terms, the WACC corresponds to the weighted average of the cost of equity (Ke) and of the cost of debt capital (Kd).

The current methodology to determine the cost-of-capital, in the CTT CAS, is based on the pre-tax WACC formula, which results from the adjustment of tax in the post-tax WACC formula, the tax expense being incorporated, and allocated to the different products and/or services. The criterion of causality is thus observed in a more appropriate way, in contrast to the post-tax methodology, which allocates the tax expense via common costs.

The WACC pre-tax methodology thus results from the following formula:

$$\mathbf{WACC_{pre-tax}} = \mathbf{WACC_{post-tax}} \times \frac{\mathbf{1}}{(\mathbf{1} - \mathbf{ti})}$$

whereby:

$$\mathbf{CPMC_{pre-tax}} = [\mathbf{K_e} \times (\mathbf{1} - \boldsymbol{Gearing}) + \mathbf{K_d} \times \boldsymbol{Gearing} \times (\mathbf{1} - \mathbf{t_i})] \times \frac{\mathbf{1}}{(\mathbf{1} - \mathbf{t_i})}$$

where:

Ke – represents the actual cost-of-capital, calculated through the Capital Asset Pricing Model method - WACC – (see section 2.1.2 Capital Asset Pricing Model - WACC);

Kd – represents the rate of cost of debt capital, obtained through the sum of the risk-free interest rate and the debt premium;

Gearing – represents the weight of debt capital in the total invested capital; and

t_i – represents the (nominal) corporate income tax rate.

2.1.2. Capital Asset Pricing Model (CAPM)

The establishment of the cost of equity (K_e) is based on the Capital Asset Pricing Model methodology CAPM, using the following formula:

$$Ke = Risk - free\ interest\ rate + \beta \times Risk\ premium$$

where:

Risk-free interest rate (R_f) – corresponds to the rate of return expected by an investor as a result of investments in assets with no associated risk, that is, investments free of uncertainty as to the return to be obtained.

β (Beta) – represents the covariance between a company's equity returns and the stock market as a whole, that is, it reflects the risk of equity in that company compared to the general market risk.

Market risk (R_m) – corresponds to the return expected by an investor when investing in the stock market with a diversified portfolio.

Risk premium ($R_m - R_f$) – corresponds to the differential between the risk of investing in the stock market with a diversified portfolio (R_m) and the investment made in risk-free assets (R_m) thus representing the additional return required by investors for the risk taken, by comparison to the return of the investment in an asset to which no risk is associated.

The CAPM model is the most widely used[9] as it presents a clear theoretical basis and is easy to implement. The model reflects the underlying efficient portfolio theory, according to which, in a market, economic actors will invest in an efficient portfolio, that is, a portfolio that will maximize returns expected for a given level of risk, in the light of the degree of aversion to risk on the part of each actor.

[9] Graham and Harvey (2001), *The theory and practice of corporate finance: evidence from the field, Journal of Financial Economics*. The survey conducted with 400 Financial Directors showed that % use the CAPM model.

2.2. Methodology to calculate parameters

2.2.1. Cost of equity capital (K_e)

2.2.1.1. Risk-free interest rate (R_f)

The risk-free interest rate (R_f) reflects the return obtained by an investor as a result of investments in risk-free assets, although a certain degree of risk, even if low, may always exist, namely:

a) Market risk: changes in the market rate of return;

b) Liquidity risk: risk related to the inability to sell financial instruments in the short term.

Financial and regulatory practices have generally considered government bonds (GB) to be a reliable and sound parameter to reflect the absence of risk.

In its determination of 02.11.2017, ANACOM established that the risk-free interest rate is determined based on the average of yields of 10-year Portuguese treasury bonds (historical series, based on monthly observations in the course of the two years preceding the year of the decision – source: European Central Bank).

Taking into account the calculation made by Mazars based on the methodology described above, the details of which can be consulted in Annex 1, ANACOM considers that the value to be used regarding the **risk-free interest rate** for the 2018 financial year should be **3.11%** (see Table 2).

Table 2. Risk-free interest rate

	Average
Risk-free rate 2016	3.17%
Risk-free rate 2017	3.05%
2016 and 2017 average	3.11%

Source: European Central Bank

2.2.1.2. Beta (β)

As mentioned earlier, the CAPM methodology is based on the determination of the risk of an asset listed on a stock exchange (share), which considers the systematic (or market) risk plus the specific (or company) risk.

The general market risk (systematic risk) corresponds to the risk related to all aspects (e.g. political, economic, etc.) that are able to change the behaviour of investors, thus representing the risk that is inherent to a portfolio which is already diversified, differing from the individual risk associated with each of the stock-listed securities.

The risk associated with the share is defined by calculating its beta (β) which in the context of the definition of the company's cost-of-capital, corresponds to the equity β, and reflects the sensitiveness of a specific asset to changes in the return of the market portfolio, that is, the company's exposure to the economic cycle.

Given that CTT's regulated activity is not individually stock listed, the determination of 02.11.2017 establishes that β should be determined based on a benchmark of companies with similar activities (see Table 1), a methodology which does not differ substantially from that used by most European countries in this regard.

In this sense, and regarding the definition of the benchmark for comparable companies and the calculation of β, the methodology used reflects the following characteristics:

a) The definition of a set of comparable companies that must form part of the benchmark, through the identification of stock-listed European postal companies, that are comparable to CTT, both as regards the activities developed and the characteristics of the markets where they operate;

b) The use of the Harris and Pringle model[10] to determine the β of the equity of comparable companies. This model allows for the calculation of the unlevered β of the asset, that is, the β without the effect of capital structure, which is later leveraged with the capital structure defined as optimal for CTT;

[10] The Harris and Pringle calculation formula is considered to be the formula that best reflects reality β (Equity) = β (Asset) x (1 + D/E) where: D/E - capital structure.

c) Frequency of observations: β may be estimated through daily, weekly, monthly or quarterly observations. In this scope, similar to the case of the risk-free interest rate, the determination of 02.11.2017 deemed monthly observations to be the most appropriate;

d) Period of time: the use of short series could distort results and suppress relevant information, as more recent observations may involve probable effects that do not properly reflect future expectations. As such, the use of series that are long enough to allow for the correction of effects of short-term volatility are thus recommended. To that extent, the defined methodology established that the series period must accommodate relevant observations that guarantee a robust result, representative of the risks inherent to the company's current structure, and it is clear that European Regulatory Authorities prefer long periods of time. Accordingly, it has been deemed appropriate to use a 5-year period of time, so as to allow an appropriate level of robustness and security of results obtained; and

e) Data on β are taken from Bloomberg as they correspond to values adjusted through the Bayes formula, the so-called adjusted beta[11], which allows the determination of a more robust estimate, that is less volatile to fluctuations.

In this context, β is determined through the simple average of the β established for the different benchmark companies (see Table 1), which correspond to their adjusted beta, from Bloomberg – historic series for the 5 years preceding the year of the decision, based on monthly observations, with each of the β extracted from the Bloomberg data unleveraged from the financial structure of the company they concern, and subsequently leveraged using the Harris & Pringle formula (β equity capital = β asset x (1 + D/E[12])), using the capital structure (gearing) defined for the year concerned (see Table 9), which must take account of the accounting value of its equity.

[11] The beta of a company may be presented as an adjusted beta or as a raw beta. Raw (or historical) beta is based on the comparison of the asset return with the market return. The adjusted beta is an estimate for the future asset return compared to the market return. It results initially from historical data, with an adjustment being performed, assuming that the asset beta taken into account will always tend towards the average return provided by the market. The calculation formula for the purpose of the determination of the adjusted beta is: adjusted beta = 0.67 x (raw beta) + 0.33 x 1 (market beta).

[12] D/E - Debt/Equity or gearing, corresponds to the capital structure given by the ratio between debt capital and equity.

Taking into account the calculation made by Mazars based on the methodology described above, the details of which can be consulted in Annex 1, ANACOM considers that the value to be used regarding **β** for the 2018 financial year should be **0.726** (see Table 3).

Table 3. Beta

Comparable companies	Equity Beta 5 years (Harris & Pringle Formula)
CTT	0.914
Royal Mail	0.478
Bpost	0.874
Österreichische Post (Austrian Post)	0.772
Malta Post	0.705
PostNL	0.612
Average	**0.726**

Source: *Bloomberg*

2.2.1.3. Risk premium ($R_m - R_f$)

By definition, the risk premium corresponds to the differential in terms of return required to invest in a given asset, in a given market, compared to the return of the investment in a risk-free asset.

$$\textbf{Risk premium} = R_m - R_f$$

where:

R_m – represents the expected return of an investment in the stock market in a diversified portfolio;

R_f – represents the risk-free interest rate.

It is not a consensual task, either in methodological or in conceptual terms, to determine the risk premium expected from the stock market. The analysis of its behaviour is complex, given that both the risk premium, and factors that determine it, are not directly observable, changing over time according to the behaviour of investors towards risk and to their

perception of the risk of the asset concerned. As such, like other European Regulatory Authorities, ANACOM decided in prior determinations on the methodology to calculate the cost-of-capital in the scope of the electronic communications regulation, that the definition of the risk premium should be based on an *ex-post* methodology and the use of a benchmark.

The methodology defined by ANACOM favoured observations based on longer series, as supported by Damodaran in the research carried out on this subject[13], which states that observations based on longer series (25 to 100 years) exceed the advantages of more relevant observations, associated with shorter and more recent periods, by allowing a lower standard error, their consistency tending to increase with the extension of the period considered.

As such, given that the risk premium is an exogenous parameter, and aiming to maintain regulatory consistency, ANACOM established that it should be determined on the basis of the methodology previously defined by this Authority for calculating the cost-of-capital to be considered in electronic communications regulation, such that the risk premium is determined based on a simple average between the *ex-ante* data (Damodaran, Pablo Fernandez and Dimson, Marsh and Staunton - DMS), covering expectations for Portugal and calculated based on the most recent available publications in the year preceding the decision.

Taking into account the calculation made by Mazars (Annex 1), based on the methodology described above, ANACOM considers that the value to be used regarding the **risk premium** for the 2018 financial year should be **6.22%** (see Table 4).

[13] *Damodaran, Aswath, "Equity Risk Premiums", Stern School of Business.*

Table 4. Risk premium for 2018

Risk premium for 2018		Amount
Damodaran	*Portuguese market risk premium*[14]	7.96%
Pablo Fernandez	*Market Risk Premium and Risk* rate used for 59 countries in 2018 Pablo Fernandez, Alberto Ortiz and Isabel F. Acin – IESE Business School April 4, 2018.[15]	7.20%
DMS	*Credit Suisse Global Investment Returns Yearbook 2018*	3.50%
	Risk Premium for 2018 (Average)	**6.22%**

2.2.2. Cost of debt capital (K_d)

2.2.2.1. Debt premium

The cost of debt capital rate reflects the interest rate for financing medium- and long-term debts. Taking into account the methodology defined by ANACOM, the calculation of that rate is carried out based on the risk-free interest rate added from the debt premium.

The debt premium is the additional return regarding the rate corresponding to the risk-free investment, requested by the company's creditors which reflects the company's ability to meet debt liabilities, which is usually reflected in its rating.

Given this, the methodology for calculating the cost-of-capital for CTT, determined by ANACOM, considers that the debt premium to be used in determining the cost of debt capital should be obtained by using the Bloomberg Value Curve tool, considering the "EUR Industrial BBB-, BVAL Yield Curve 10Y (BVSC0517)" curve, and determined based on the average of the said yields in the two years preceding the year of the decision.

Taking into account the calculation made by Mazars (Annex 1), based on the methodology described above, ANACOM considers that the value to be used regarding the **debt premium** for the 2018 financial year should be **1.522%** (see Table 5).

[14] http://www.stern.nyu.edu/~adamodar/pc/datasets/ctryprem.xls

[15] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3155709

Table 5. Debt premium

	31.12.2016	31.12.2017	Average 2016/2017
EUR Industrial BBB-, BVAL Yield Curve 10Y (BVSC0517)	1.429%	1.614%	1.522%

Source: *Bloomberg*

2.2.2.2. Tax Rate

The cost-of-capital incorporated in the results of the CTT CAS, and further to previous determination by ANACOM, was calculated on the basis of the legal tax rate, as this rate, compared to the effective rate, is less subject to fluctuations, given that its variation is due only to changes at the level of fiscal legislation, and is not influenced by management decisions that are able to significantly affect its volatility, which brings about greater regulatory predictability.

Therefore, and given that the use of the legal tax rate allows for:

a) avoiding any of the frequent and significant fluctuations of the effective tax rate, resulting mainly from annual corrections for the purpose of the basic taxable amount, as well as of variations in deferred taxes;

b) decreasing complexity when establishing the tax rate to be considered (compared to the effective rate);

c) increasing regulatory predictability; and

d) determining a fixed and exogenous value to the regulated company, which is easily observable,

and, given that the tax rate is currently made up of three different components: (i) corporate income tax rate (IRC) (ii) state surtax rate; and (iii) municipal surtax rate, ANACOM determined that the methodology for calculating the CTT cost-of-capital rate, applicable for the 2018 and following financial years, should result from the sum of the values of each of the components that currently comprise it, obtained through the application of the methodology described below:

(i) corporate income tax rate (IRC)

The corporate income tax rate (IRC) must correspond to the rate in force for the financial year concerned for which the cost-of-capital is being determined.

As such, and taking into account the methodology described above, which establishes the use of the nominal rate of IRC in force for 2018, ANACOM considers that the (IRC) income tax rate to be considered should be 21%.

(ii) State surtax rate

The State surtax rate, due to legislative amendments in the last few years, has been progressively determined according to the company's taxable profits, with a 3% rate being levied in 2018 on the taxable profit in excess of 1,500,000 Euros and up to 7,500,000 Euros, a 5% rate on taxable profit between 7,500,000 and 35,000,000 Euros and a 9% rate for taxable profit over 35,000,000 Euros[16].

As such, ANACOM determined that the State surcharge rate to be applied corresponds to the rate resulting from the application of the legislation in force for the year concerned to the average of positive taxable profits of the three-year period preceding the year of application or, given the possibility that in this time period there were no taxable profits recorded, thus considering a State surcharge rate of 0%.

As such, and based on the state surtax identified in the CTT Financial Statements, for the last three years (2015-2017), and given the calculation made by Mazars based on the methodology described above (Annex 1), ANACOM considers that the taxable profits referring to each of the said tax years, as well as the State surcharge rate applicable to the 2018 financial year, should correspond to 72,810 thousand Euros (See Table 6) and 6.81% (see Table 7), respectively.

[16] Article 87-A of Law no. 82-B/2014, of 31 December.

Table 6. CTT taxable profit (2015-2017)

Year	Taxable profit (Thousand euros)	State Surtax effective rate
2015	86,536	
2016	70,196	
2017	61,697	
Average	**72,810**	**6.81%**

Source: Calculations by Mazars on the basis of CTT's Financial Statements (2015-2017).

As such, based on the methodology described above, ANACOM considers that the tax rate to be considered in calculating the cost-of-capital for the 2018 financial year should incorporate a **State surtax rate** of **6.81%** (see Table 7).

Table 7. State surtax rate

Taxable Profit bracket	State surtax rate	Taxable Profit bracket ('000 Euros)	Surtax rate	Average State surtax rate
Up to 1,500,000 Euros	0 %	1,500	0	
From 1,500,000 Euros to 7,500,000 Euros	3 %	6,000	180	
From 7,500,000 Euros to 35,000,000 Euros	5 %	27,500	1,375	
Greater than 35,000,000 Euros	9 %	37,810	3,403	
		(1) 72,810	**(2) 4,958**	**(2)/(1) 6.81%**

Source: Calculations by Mazars on the basis of CTT's Financial Statements (2015-2017).

(iii) municipal surtax rate

As far as the municipal surtax is concerned, as this is an exogenous parameter to the company, given that it does not result from the value of its taxable profits in each financial year, the determination of 02.11.2017 established that, given the variety of municipal locations with different municipal surtax rates, and for the purpose of simplifying the process of the calculation and determination of the value, that the municipal surtax should correspond to the maximum value established by law for the year concerned.

As such, and based on the methodology described above, ANACOM considers that the **tax rate** to be considered in calculating the cost-of-capital rate for the 2018 financial year should be **29.31%** (see Table 8), according to the calculations made by Mazars (Annex 1).

Table 8. Tax Rate

Tax Rate	
Article 87 of the CIRC[17] - Corporate Income Tax Rate (IRC)	21.00%
Article 87- A of the CIRC - State surtax rate	6.81%
Municipal surtax	1.50%
Tax Rate	**29.31%**

2.2.3. Gearing

The company's financial structure (gearing), reflected by the weight of debt capital in the total of invested capital, plays an important role in the determination of WACC.

The choice of the optimal relationship between equity capital and debt capital, in order to optimise the WACC, is known as the optimum capital structure.

As such, ANACOM's determination of 02.11.2017, which defined the methodology to be used in calculating the cost-of-capital rate for CTT established that the gearing to be used in its determination should result from a reference capital structure and, as such, result from a benchmark of comparable companies, both at the level of services provided and of markets where they operate. (see Table 1).

Therefore, ANACOM determined that the establishment of the gearing to be used to calculate CTT's cost-of-capital should result from the average gearing value of each of the referred companies of the said benchmarking for the 5 years preceding the year of the decision, taking into consideration their Report and Accounts as made available by Bloomberg.

Thus, taking into account the calculation made by Mazars (Annex 1), based on the methodology described above, ANACOM considers that a **gearing** of **9.82%** should be used (see Table 9).

[17] CIRC – Corporate Income Tax Code (*Código do Imposto sobre o Rendimento das Pessoas Coletivas*).

Table 9. Gearing

Comparable companies	Average Gearing (2013-2017)
CTT	0.73%
Royal Mail	9.97%
Bpost	7.45%
Österreichische Post (Austrian Post)	0.78%
Malta Post	0.00%
PostNL	40.01%
Average 2018	**9.82%**

Source: Calculation by Mazars on the basis of Bloomberg's financial statements

2.3. Basis of remuneration of the cost-of-capital

The cost-of-capital is calculated as the product of the WACC rate and the basis of remuneration, the latter being particularly relevant, as it must reflect the investment made by the operator in the development of its operational activity.

In this scope, the Postal Law provides in point b) of paragraph 3 of article 19 that the calculation of the US net cost must take into account "*the entitlement of the universal service provider (USP) to a reasonable profit, represented by the cost-of-capital related to investments required to provide the universal service (US), which must reflect the risk incurred*".

Therefore, ANACOM's determination of 02.11.2017, which defined the methodology for calculating the cost-of-capital rate, established that there should be a direct relationship between the capital invested by the USP and the investment made in non-current assets required for the development of its activity, which results in a more appropriate reflection of the opportunity cost incurred by its investors.

Given that CTT's costing model is based on the methodology of fully distributed expenses, it was deemed reasonable that the methodology defined considered that the basis of remuneration incorporate the total value of the average non-current asset (associated with regulated and non-regulated activity), in CTT's financial statements, as the calculated cost-of-capital is allocated to regulated products, in the proportion and only for non-current

assets involved in its provision, on the basis of the activity based costing (ABC) methodology, that aims to create a direct relation between the allocation of expenses and activities required for the sale and/or provision of a product/service.

As such, the calculated cost-of-capital is then allocated proportionally to the different cost centres, taking into account net average assets (resulting from the sum of average net tangible and intangible assets) allocated to each cost centre.

Therefore, the defined methodology established that the basis of remuneration to be used in the calculation of CTT's cost-of-capital should correspond to the non-current asset, namely items of tangible and intangible assets allocated to CTT's operational activity, excluding assets held for sale, reflecting a more direct remuneration of the investment made by the operator in the scope of its operational activity.

Any other asset classified by CTT to be investment and which in its view must be remunerated, should be submitted to ANACOM, duly justified, so that the grounds for its inclusion in the basis of remuneration can be validated.

2.4. Definition of the cost-of-capital rate

The prior adoption of a clear methodology and the consequent *à priori* definition of the value of the cost-of-capital rate promotes regulatory predictability and market transparency.

Therefore, and taking into consideration the parameters obtained in the previous points, applying the pre-tax formula for weighted average cost of capital[18], ANACOM considers that the **cost-of-capital rate**, applicable for the 2018 financial year, should be **10.1845%** (see Table **10**).

[18] $WACC_{pre-tax} = [Ke \times (1 - G) + Kd \times G \times (1 - ti)] \times \frac{1}{(1-ti)}$

Table 10. Cost-of-capital rate (2018)

Parameters	2018
Risk-free interest rate	3.11%
Beta	0.726
Risk premium	6.22%
Gearing	9.82%
Debt premium	1.522%
Tax rate	29.31%
Cost of equity	7.63%
Average 2018	**10.1845%**

Given the methodology described above and the calculation shown in the previous point, it is determined that, for the CTT CAS results for 2018, **the cost-of-capital rate of 10.1845%** should be used.

3. Conclusion

Given the methodology described above and the calculation shown in the previous point, it is determined that, for the CTT CAS results for 2018, the **cost-of-capital rate of 10.1845%** should be used.

Annex I List of acronyms and abbreviations

ABC	Activity based costing
NRA	National Regulatory Authority
CAPM	Capital asset pricing money
CDS	Credit default swaps
CIRC	Corporate Income Tax Code
USNC	Universal service net cost
WACC	Weighted Average Cost-of-Capital
FDC	Fully distributed costs
IRC	Corporate income tax
GB	Government Bonds
USP	Universal postal service provider
CAS	Cost Accounting System
ASS	Accounting standardisation system
US	Universal service
WACC	Weighted Average Cost-of-Capital

Annex II: List of operators

CTT	CTT – Correios de Portugal, S. A.

Annex III: List of other bodies/organisations

ANACOM	National Communications Authority
CERP	European Committee for Postal Regulation