

Equity Valuation: CTT - Correios de Portugal, S.A.

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Resumo

A presente dissertação identifica e descreve os métodos mais adequados para determinar o justo valor dos CTT- Correios de Portugal, S.A., uma das maiores empresas em Portugal, calcula o preço das ações no final de 2021, e fornece uma recomendação a possíveis investidores.

Uma das muitas razões que tornam os CTT um ativo interessante para estudar está relacionada com o seu processo de privatização, tornando-se em 2014 a primeira empresa portuguesa com 100% do seu capital em “free float” e por, atualmente, os CTT continuarem presentes no Índice PSI20. Outro motivo a destacar são as medidas implementadas pela empresa para a mitigação da propagação do COVID-19 e a consciência da importância dos seus serviços para a economia e sociedade.

Depois de uma pesquisa intensiva sobre os melhores métodos, escolhemos utilizar o método de avaliação do Fluxo de Caixa Descontado, através do Fluxo de Caixa Livre para a Firma e a Avaliação Relativa, com base nos múltiplos de um grupo selecionado. Para finalizar, realizámos uma análise de sensibilidade sobre o impacto de alterações na taxa de crescimento e no custo médio ponderado do capital no valor da ação dos Correios de Portugal, S.A.

Os resultados obtidos através da metodologia da Avaliação Relativa (6,78€) e do Cash Flow Descontado (8,17€) sugerem que a 31 de dezembro de 2021, as ações dos CTT encontravam-se subvalorizadas (4,56€). Para concluir, a nossa recomendação final é que os investidores deveriam ter comprado ou mantido em carteira as ações dos CTT a esta data.

Palavras-chave: Correios de Portugal, Avaliação de Empresas, Fluxos de Caixa Descontados, Avaliação Relativa, Múltiplos

JEL Classification: G30 – Corporate Finance and Governance: General; G32 – Corporate Finance and Governance: Value of Firms

Abstract

The present project identifies and describes the most appropriate methods to determine the fair intrinsic value of CTT- Correios de Portugal, S.A., one of the biggest companies in Portugal, calculates the share price at the end of 2021, and provides an investment recommendation to possible investors.

One of the many reasons that make CTT an interesting asset to study relates to its privatization process, becoming the first Portuguese company with 100% of its capital in "free float" and for continues to be present in the PSI20 Index. Another reason worth mentioning is the role of CTT during this pandemic situation: The company has been implementing several mitigation measures against the spread of COVID-19 and is fully aware of the importance of its services to the Portuguese economy and society.

After conducting extensive research regarding the best methods to value a company, will be applied the Discounted Cash Flow valuation, using the Free Cash Flows to the Firm (FCFF) and the Relative Valuation, based on the multiples of a peer group. To conclude, we will carry out a sensitivity analysis on the impact of the Terminal Growth Rate and Weighted Average Cost of Capital on the company's results.

The results obtained through the Relative Valuation (6,78€) and the DCF method (8,17€) suggest that on 31st December 2021, CTT shares were undervalued (4,56€). Therefore, our final recommendation is that investors should have bought or maintain in their wallet CTT shares at that time.

Keywords: Correios de Portugal, Company Valuation, Discounted Cash Flows, Relative Valuation, Multiples

JEL Classification: G30 – Corporate Finance and Governance: General; G32 – Corporate Finance and Governance: Value of Firms

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Glossary

ANACOM - Autoridade Nacional de Comunicações

APV - Adjusted Present Value

B2B – Business-to-Business

B2C – Business-to-Consumer

Capex – Capital Expenditures

CTT – CTT - Correios de Portugal, S.A.

D&A - Depreciation and Amortization

DCF - Discounted Cash Flow

DDM - Dividend Discount Model

EBIT – Earnings Before Interests and Taxes

EBITDA - Earnings Before Interests, Taxes, Depreciation, and Amortizations

EQV – Equity Value

EV - Enterprise Value

EVA - Economic Value Added

FCFE - Free Cash Flow to Equity

FCFF - Free Cash Flow to the Firm

GDP – Gross Domestic Product

NOA – Non-Operating Assets

NOPLAT - Net Operating Profit Less Adjusted Taxes

PER - Price Earnings Ratio

PQS - Parameters of Quality of Service

TGR – Terminal Growth Rate

TV - Terminal Value

UPU - Universal Post Union

USP - Universal Service Provider

WACC - Weighted Average Cost of Capital

WC – Working Capital

1. Introduction

Equity Valuation is the process of estimating a company's intrinsic value, through the assessment of its historical performance, underlying risks, sources of value creation, and the market and macroeconomic outlook.

The company chosen for this valuation is CTT - Correios de Portugal, SA, one of the biggest companies in Portugal. CTT is a powerful multi-service platform, with the goal of satisfying the needs of citizens and economic agents. The group includes 5 companies: Banco CTT (financial business), CTT Express (Spanish subsidiary of express parcels), Payshop (payment service provider), CTT Expresso (delivery of mail and goods), and CTT Contacto (advertising mail distribution).

The privatization of CTT occurred on the 5th of December 2013 (at the time the State held 70% of CTT's capital), through the dispersion of shares on the stock exchange. In the following year, CTT sold the remaining capital and became the only Portuguese company to be totally private, with 100% of its capital in free float, with a broad shareholder base of institutional and private investors, both Portuguese and foreign.

Although CTT – Correios de Portugal, S.A. has already been evaluated in other projects, its value and position are non-static, so it is necessary and interesting to estimate once again its value (i.e., the true value of a company) and analyze the key areas of the business in this phase of change. Several events are testing the management skills, such as the entry of Correos ES in Portugal, the deep fall results, the announcement of cutting dividends, and finally the COVID-19 pandemic that is having a strong impact on the company's financial position.

This project starts with a literature review section, which provides insight into the most common valuation methodologies. The second section presents an overview of the Postal industry and the company's history plus a summary description of CTT's business segments and its performance. In the following pages, we will start with the valuation of CTT by establishing and explaining all the assumptions and applying the chosen models.

The selected methodology was based on the most appropriate valuation model for the company's characteristics: Discounted Cash Flow Model (Free Cash Flow to the Firm) and the Relative Method (Multiples).

As explained in the next chapter, there is no correct method to produce an exact value for a Company. The methods used can provide slightly different estimates for the CTT value, as valuation is not an objective science and depends on the considered assumptions.

2. Literature Review

One way to master corporate finance is to have the ability to know how to value a company and reach an output as close as possible to the company's intrinsic value. Based on Koller et al. (2010) and Damodaran (2012) there are three approaches to valuation: Discounted Cash Flow Valuation, Relative Valuation and Contingent Claim Valuation.

Holanda et al. (2009) evidence the existence of valuation methods more consistent (robust and suitable) than others for a given situation and company. To increase the quality of the valuation, and since there is not a correct, unquestionable, or perfect model for valuing a company, analysts can use different models and methods together, if all the assumptions, details, advantages, and disadvantages behind each of them and the business that is being valued are well understood (Damodaran, 2007).

2.1. Discounted Cash Flow Valuation

According to Koller et al. (2010), DCF is the most useful methodology for valuing assets and companies. "...The cash flow discounting method is generally used because it is the only conceptually correct valuation method" (Fernández, 2007:14).

DCF valuation can be divided into two categories: cash flows that are available to the firm (enterprise perspective) and cash flows available to the shareholders (equity perspective) (Damodaran, 2007; Koller et al., 2010).

2.1.1. Equity Valuation Models

According to Damodaran (2012), the Equity Valuation approach is divided into two models, the discounted dividend, and the free cash flow to equity. Both models only consider the equity component, i.e., the company's value from the shareholder perspective. There are two sources of income when investing in a share: the dividends that will be paid while keeping it and the difference between the purchase price and the price at which the share will be sold.

2.1.1.1. Dividend Discount Model

The Dividend Discount Model (DDM) is the oldest DCF valuation method and the simplest model for evaluating equity. The premise of this approach is that the value of a share is the current value of the dividends it will generate forever (discounting the expected dividends). The general form of DDM, that determines the value of any asset is the following (Damodaran, 2012):

$$Value\ per\ Share\ (P_0) = \sum_{t=1}^{t=\infty} \frac{E(DPS_t)}{(1+k_e)^t} \quad (1)$$

where,

$E(DPS_t)$ – expected dividends per share in year t ; k_e – equity required rate of return (cost of equity)

Damodaran (2012) also states that, over the years, several versions of the dividend discount model have been developed based on different assumptions for future growth:

The Gordon Growth Model, consistent for companies that have reached certain stability, assumes that dividends will grow at a constant rate forever.

$$Value\ per\ Share\ (P_0) = \frac{E(DPS_1)}{k_e - g} \quad (2)$$

where,

$E(DPS_1)$ – expected dividends per share in year 1; g – perpetual growth rate in dividends

The Two-Stage Dividend Discount Model considers an initial phase where the growth rate is not stable and a successive state where the growth rate is expected to be stable for the long term.

The Three-Stage Dividend Discount Model is used for an initial period of high growth, a subsequent period where growth declines, and a final stable growth phase. It is the most general of the models because it does not impose any restrictions on the payout ratio.

2.1.1.2. Free Cash Flow to Equity (FCFE)

The Free Cash Flow to Equity (FCFE) values the company based on the “potential dividends” rather than “actual dividends” (Damodaran, 2006). This approach represents the amount available (i.e., all cash available after debt payments and reinvestment needs) to distribute among shareholders and assumes that the firm will not accumulate cash in the future (Damodaran, 2012). The following formulas show how to estimate the FCFE.

According to Fernández (2007):

$$FCFE = FCFF - Interest\ Expenses \times (1 - t) + Debt\ Variations \quad (3)$$

Or as per Mota (2020):

$$FCFE = EBIT - Interest\ Expenses - Taxes - \Delta Working\ Capital - Capex\ net\ of\ disposals + \Delta Debt \quad (4)$$

The market value of shares (EQV) considers all free cash flows that are available to shareholders. The projection of these cash flows and the discount of them by a specifically required return on equity (that only reflects the risk of equity) computes the EQV.

$$\text{Equity's Market Value} = \sum_{t=1}^{t=n} \frac{FCFE_t}{(1+k_e)^t} + \frac{TV_n}{(1+k_e)^n} \quad (5)$$

where,

FCFE – Free Cash Flow to Equity in year t; TV_n – Terminal Value in year t

When valuing firms for takeovers or firms where there is a reasonable chance of a change in corporate control, the value from the FCFE model provides a better estimate (Damodaran, 2012).

2.1.2. Firm Valuation Models

2.1.2.1. Free Cash Flow to Firm (FCFF)

Luehrman (1997a) considers the Free Cash Flow to the Firm model as the standard one in DCFs analysis. In this approach, it is necessary to discount the cash flow available to all investors using the weighted average cost of capital (a rate that represents the overall risk of the firm).

According to Mota (2020), this is the formula to calculate FCFF:

$$FCFF = EBIT \times (1 - t) + \text{Depreciation and Amortization Costs} - \Delta \text{Working Capital} - \text{Capex} \quad (6)$$

The calculation of the Terminal Value (TV_n) assumes a constant growth from some period onwards. In order to try to get the most realistic value for the company, the inputs (cash flows and discount rates) are carefully estimated (Damodaran, 2012).

$$\text{Value of the firm} = \sum_{t=1}^{t=n} \frac{FCFF_t}{(1+WACC)^t} + \frac{TV_n}{(1+WACC)^n} \quad (7)$$

where,

$FCFF_t$ - Free Cash Flow of the Firm in year t; TV_n - Terminal Value; WACC - Weighted Average Cost of Capital

Terminal Value (TV) represents the value of the firm assuming that cash flows will be produced until perpetuity at a constant growth rate as is shown in the following formula:

$$\text{Terminal Value} = \frac{FCFF_{n+1}}{WACC - g} \quad (8)$$

After calculating the Enterprise Value it is possible to compute the equity value (EQV). As per Mota (2020):

$$EQV = \text{Enterprise Value} + \text{Non Operating Assets} - \text{Debt} \quad (9)$$

2.1.2.2. Adjusted Present Value Models (APV)

While doing an economic valuation, the usage of a unique discounting rate throughout the entire life of the company is a simplifying assumption that considers the company keeps its capital structure at a constant target debt-to-equity ratio (Esty, 1999). Although the WACC can be adjusted yearly to handle variations of capital, the process is complex and, in these situations, Koller et al. (2010) recommend the use of the APV method, which considers multiple discounting rates, leading to a more accurate valuation.

The fundamental idea is that APV analyzes each component of value separately, helping managers investigate not only the company's true value and how much an asset is worth but also the sources of value creation and destruction. According to Damodaran (2012), this is the formula that computes APV:

$$\text{Value of firm} = \text{Value of all equity financed firm} + \text{PV of tax benefits} - \text{PV of Expected Bankruptcy Costs} \quad (10)$$

To Luehrman (1997b), APV always works because it requires fewer restrictive assumptions and consequently less errors. The main limitation of this model is the difficulty to estimate expected bankruptcy costs since it is important to know the concrete values of debt costs in a company and the probability of them occurring (Damodaran, 2007).

2.1.2.3. Economic Value Added (EVA)

In 1982, Stern Stewart and Co. introduced and advocated the Economic Value Added (EVA), which is a specific Excess Return Model. Advanced economies identify EVA as an important financial performance measure and corporate strategy tool (Mamun & Mansor, 2012).

EVA is a method based on the concept of value creation and it is an alternative approach to measure a company's performance, i.e., the profit generated by a firm for a specific period (the difference between returns made on an investment and the cost of the capital invested), and therefore, only represents the periodic total investment in the firm and not the company's value (Ollor & Dagogo, 2009; Damodaran, 2012).

The technique to calculate EVA is the following:

$$EVA = NOPLAT - WACC \times Invested Capital \quad (11)$$

2.2. Relative Valuation

When doing a valuation, forecasters should use the Relative Valuation method as a complement because it generates more accurate outputs and helps to understand if the other approaches were well performed (Fernández, 2001; Koller et al., 2010).

The consistency of this methodology relies on the premise that comparable companies share a similar performance and have identical financial characteristics. For Fernández (2001), the choice of the multiples to use will depend on the industry being analyzed, so it is assumed that companies in the same industry will share the same characteristics but, in the case of that not being verified, Damodaran (2007) suggests trying to find similar firms in terms of valuation fundamentals.

As stated by Fernández (2001), there are 3 groups of multiples: Equity Value Multiples, Enterprise Value Multiples and Growth-Referenced Multiples.

2.3. Contingent Claim Valuation

The Contingent Claim Valuation Model is frequently used when analyzing companies that have in their hands the decision of whether to execute or not an opportunity, i.e., when the company has the right, but not the obligation, of executing a certain action (advance/abandon or invest/not invest in a particular project, based on market evolution) (Luehrman, 1997a; Damodaran, 2012).

Dar and Anuradha (2018) identified the two most popular methods to solve the option pricing problems: The Binomial Model (a simple statistical method) and the Black Scholes Model (which requires a solution of a stochastic differential equation).

To Copeland (2002) this method of option pricing includes the value of flexibility, which is a plus in the valuation of companies and is not considered in the DCF method. The author also mentions the possibility of this method outperforming DCF when it comes to investment decisions, but nowadays, it is only used in certain circumstances.

3. Industry Overview

3.1. Universal Post Union (UPU) and Universal Service Provider (USP)

The Universal Post Union (UPU) is a specialized agency of the United Nations, founded on 9th October 1874, with the Treaty of Bern (signed by 22 countries, including Portugal) that coordinates postal policies and services between nations and the international postal system.

The UPU, currently made up of 192 countries, was created to improve postal development and the quality of its services for customers worldwide. This union encourages collaboration and the development of the international postal sector, focusing on the renewal of the sector's adaptation to regulation, standardization, and cooperation activities.

European countries must guarantee a universal postal service that is permanent and accessible throughout their territory. This postal service is provided (or at least part of it) by one or more companies (public or private entities) designated as universal service providers (USP).

The electronic and postal communications sector in Portugal is supervised and regulated by the Autoridade Nacional de Comunicações (ANACOM), an independent administrative body that counts with the assistance of the Government, e.g., to approve essential measures such as increasing the prices of UPS or the number of infrastructures available to the population.

Nowadays, the primary trend in all Member States is the progressive liberalization of the postal correspondence market. However, postal services used to be national monopolies owned by the State.

In Portugal, the universal service provider is CTT – Correios de Portugal, a monopoly in the postal sector. Any other possible operator would have to make a significant investment to compete with CTT, except the parcel delivery segment, which allows companies in the logistics sector (such as FedEx, DHL, UPS, and MRW) to enter the market and have a large percentage of it.

The concessionaire (CTT) must establish, maintain, and develop the public postal network with certain levels of quality (delivery deadlines, regularity, reliability of services, waiting times in stores) and affordable prices, to respond to the communication needs of people and companies.

3.2. Best performing countries in Postal Services

Annually, the UPU determines the ranking for the Universal Postal Union's Integrated Postal Development Index. It is a composite index that summarizes information about the performance and development of postal operators worldwide.

In the 2021 edition, the index covered 168 countries, with Switzerland, Germany, and Austria in the top 3. Portugal was above most European Union countries in 22nd place (up 49 positions when compared with 2018).

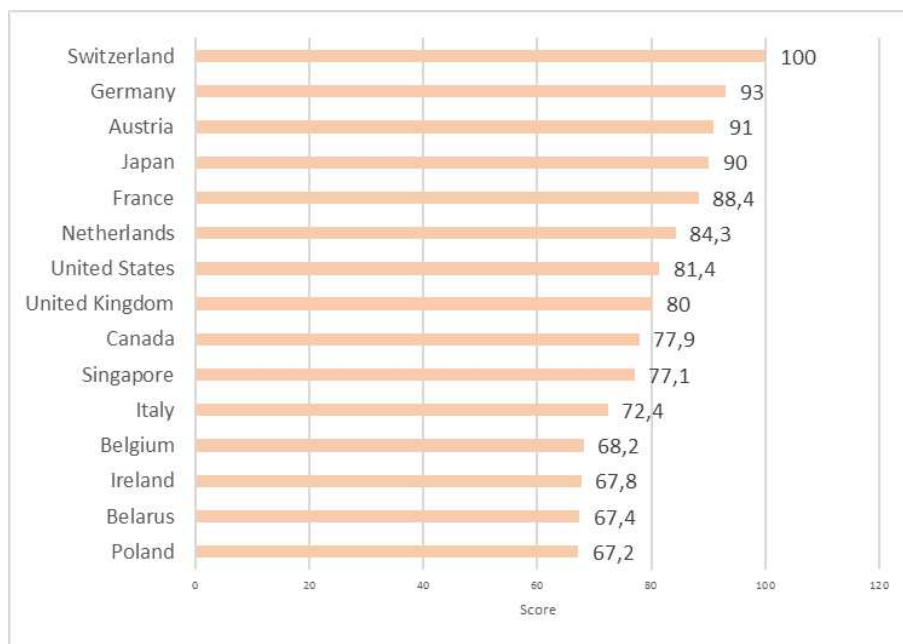


Figure 1: Postal Services Ranking in 2021
Source: Statista website

Since the pandemic was declared, postal operators around the world had to deal with intermittent air traffic, labor supply shortages, and increased operational costs. As they provide essential services, they have also had to continue operating during most lockdowns while at the same time attempting to meet surging demand for the delivery of online shopping transactions.

The position of Portugal reflects the effort that CTT has made since the beginning of the pandemic to keep the logistics operations, distribution of mail, express, and parcels, the network of stores, and Banco CTT always working.

3.3. New Trends

The postal industry has a leading role in society, although in the last decade there has been a significant decrease in the global volume of correspondence. Despite this trend, the

correspondence segment of postal services still represents a large part of this industry's revenues, according to UPU data, around 40 percent of postal income globally.

Since the beginning of the 1980s, constant technological developments have led to the emergence of new communication solutions. Even today, postal services continue to undergo a profound transformation around the world and are constantly shaping their activity with innovative products and services to face new challenges, be more competitive, and meet the high expectations of customers.

The potential for expansion of the international parcels market registered an increased demand, given the development of e-commerce, the reduction of trade barriers, and the general globalization of business and manufacturing.

Overall, mainly due to the strong focus on e-commerce and the diversification of products and services available, postal companies continue to outperform each year.

The Portuguese market follows the path of the international one increasing the delivery services segment in recent years (*Figure 2: Total volume of e-commerce in Portugal*), making the predictions of e-commerce positive (*Figure 3: Evolution of online shoppers in the world*). The main reasons for the change in consumers habits are the end of the crisis, the increase in the percentage of families with internet access, the increase of confidence in the use of the internet (especially for online shopping), as well as the pandemic situation that led to the closing of many CTT stores, providing distance sales.

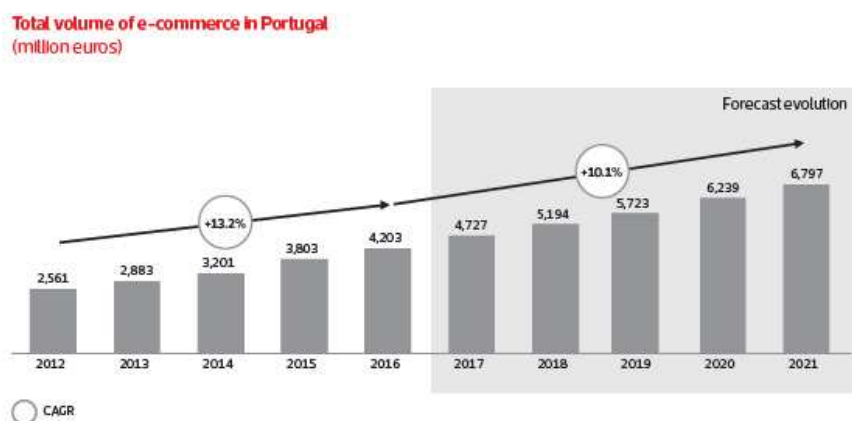


Figure 2: Total volume of e-commerce in Portugal
Source: ANACOM website

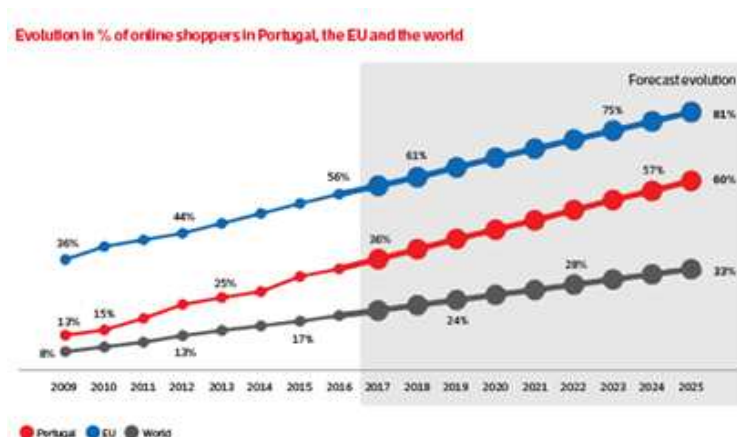


Figure 3: Evolution of online shoppers in the world
Source: ANACOM website

4. Company Overview

4.1. Company History

The history of CTT started with King Manuel I of Portugal that founded the first public mail service in 1520 (now denominated as Correios de Portugal, SA.). Nowadays, CTT and its subsidiaries (“CTT Group” or “Group”) ensure the provision of universal postal service, the provision of postal services and the provision of financial services.

In 2000, CTT and State signed the Universal Postal Service Concession Contract, valid for a period of 30 years which was later reduced (in 2013) to 20 years. This contract obliges CTT to guarantee the exchange of correspondence all over the country. On 6 January 2022, a new concession agreement for the provision of the universal postal service (USP) until 31 December 2028 was signed between the two entities.

The liberalization of the postal market took place in Portugal in 2012, and since then several relevant developments have taken place. CTT entered the Portuguese stock exchange on 5 December 2013, with an Initial Public Offering, through the dispersion of shares corresponding to 68.5% of the respective share capital. In the following year, the remaining capital was sold in the same way (31.5%), making CTT a completely private company, with 100% of its capital in free float. Institutions and individuals invested around 922 million euros in the two privatization phases. This major change in the shareholder structure was a very important moment for CTT, in which new opportunities arose and the company became more autonomous from the State shareholder.

In 2015, CTT launched a simple, competitive, and low-cost offer, the Banco CTT with a mass market concept, opening simultaneously at 52 CTT stores, spread across Portugal on 18

March 2016, having a physical, but also a strong presence in digital channels, thus managing to enhance the service to younger or technology-prone audiences.

4.2. Postal Network

As CTT – Correios de Portugal, S.A. is a universal postal service, the company needs to provide its services in accordance with the parameters of quality of service (PQS) and the performance objectives set by ANACOM. During the pandemic, CTT's activity was significantly impacted. Despite the need for temporary closure or reduction of the opening hours of some postal establishments, CTT adopted a contingency plan to guarantee the continuity of the postal service to the population and economic and social activities.

At the end of 2021, CTT had 2356 postal establishments in operation (*Figure 4: Retail Network of CTT in Portugal*), a number in line with the density objectives of the postal network defined by ANACOM (minimum is 2296). From the end of 2014 until the end of 2021, the company registered an accumulated establishments growth equal to 1.7%, meaning that the number of post offices created during this period exceeded the closed ones.

In the following map, we can see the national coverage of CTT.

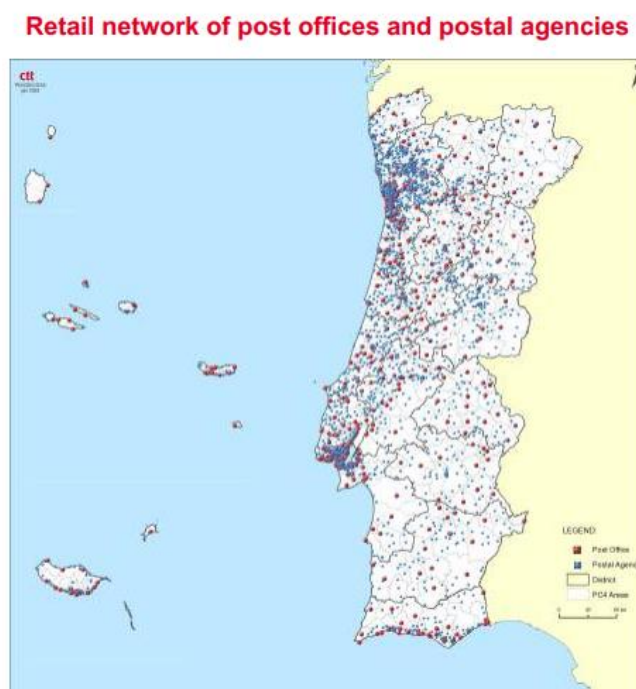


Figure 4: Retail Network of CTT in Portugal
Source: CTT Integrated Report 2021

According to ANACOM and considering the data available for 2020 in the Universal Postal Union (UPU), Portugal is in a favorable position compared with the EU average (excluding Portugal) regarding coverage indices and population density.

Despite most of the activity of CTT being centered in Portugal, the company is also present in Spain and Mozambique. In 2021, CTT consolidated its Iberian presence, investing in the expansion and coverage of its Express and Parcels network and benefiting from the growth of this business in Portugal and Spain (explained in chapter 4.5.2 Express & Parcels). In Mozambique, there was also an increase in business in the health area (collection of biological samples) and banking sector.

4.3. Shareholder Structure

In 2021, CTT's shareholder structure is shown in *Figure 5: CTT Shareholder Structure*. The largest shareholder of CTT is Manuel Carlos de Mello Champalimaud.

	Shares	Share Capital
Manuel Champalimaud, SGPS, S.A.	19 683 269	13,12%
Global Portfolio Investments, S.L.	15 057 937	10,04%
GreenWood Builders Fund I, LP	10 020 000	6,68%
Green Frog Investments Inc	7 730 000	5,15%
Norges Bank	3 105 287	2,07%
Bestinver Gestión S.A. SGIIC	3 024 366	2,02%
CTT, S.A. (own shares)	1 500 001	1,00%
Other shareholders	89 879 140	59,92%
TOTAL	150 000 000	100,00%

Figure 5: CTT Shareholder Structure
Source: CTT Integrated Report 2021

At the end of 2021, the shareholder composition in terms of investor profile is represented in the following graphic.

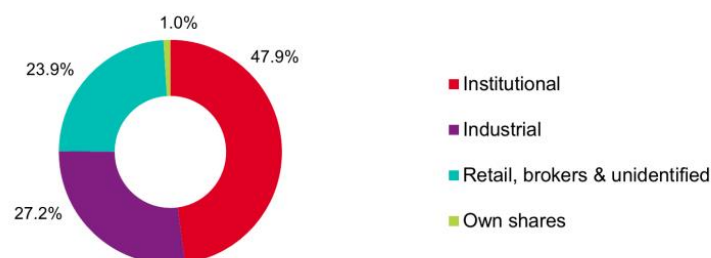


Figure 6: CTT Capital Structure by Investor Profile
Source: CTT Integrated Report 2021

Regarding geographical breakdown, CTT's institutional and industrial shareholders were mainly based in the United States of America (around 32%), followed by Spain and Portugal.

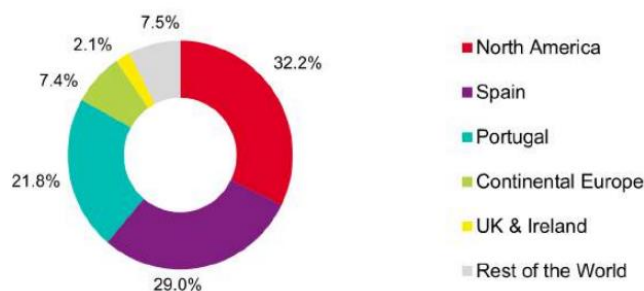


Figure 7: CTT Geographical Breakdown
Source: CTT Integrated Report 2021

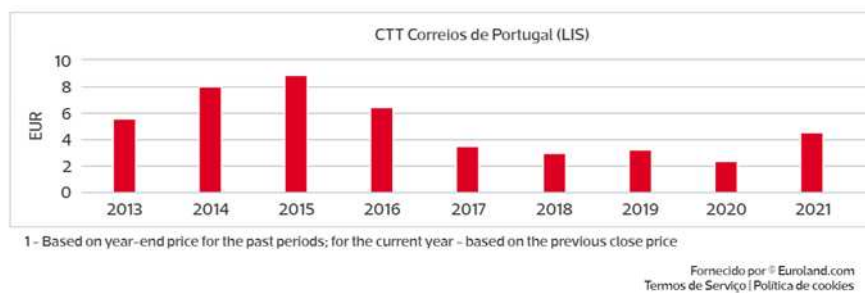
CTT's integrated report states that the number of ordinary shares for 2021 was 150 000 000 (with no different categories), nominative, book-entry, share capital of €75,000,000, representing a par value of €0.50 each share, admitted to trading on the regulated market managed by Euronext Lisbon - Sociedade Gestora de Mercados Regulamentados, S.A.

4.4. Stock Exchange Performance

In 2020, due to the uncertainty caused by the pandemic, CTT Administration canceled for the first time the payment of dividends from the previous year.

The dividend paid by CTT in May 2021 (related to the 2020 financial year) was equal to €0.085 per share, being selected at the Euronext Lisbon Awards with the Equity Champion – SME, as the company which generated the highest return for its shareholders during the year 2021 (showing a return of 98.0%). These values can be justified by the dynamism of Express & Parcels due to the constant growth of e-commerce, as well as the continued good performance of Banco CTT.

The following figure shows CTT's history share price from 2013 until 2021 and the volatility of share price during the year 2021. In terms of price appreciation, CTT rose 95,74% (on 31 December 2020 the share price was 2,35€), resulting in a share price of 4,56€ on 31 December 2021.

Annual Close Prices ¹

04/01/2021 - 31/12/2021

■ CTT Correios de Portugal (LIS) Open: 2.38 | High: 5.21 | Low: 2.33 | Close: 4.56

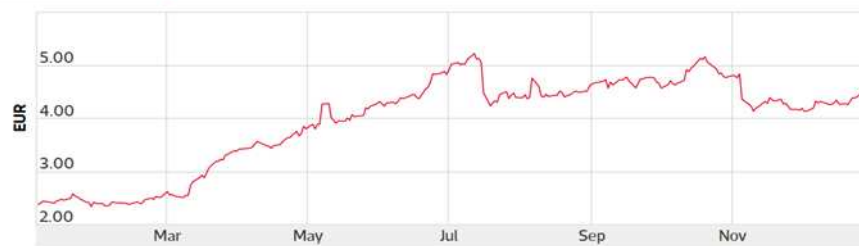


Figure 8: CTT Annual Close Prices and Shares Volatility
Source: CTT Integrated Report 2021

4.5. Business Segments

Company	
ctt	CCT – Correios de Portugal, S.A. - Mail distribution company inside and outside Portugal
Subsidiaries	
bancoctt	Banco CTT: Banking services;
ctt Express	CTT Express: Company specialized in courier service and urgent mail transport;
payshop	Payshop: Company provider of payments services (household bills such as water, electricity, telephone, and gas);
ctt expresso	CTT Expresso: Company specialized in courier service and transport of urgent mail;
ctt contacto	CTT Contacto: Company specialized in the distribution of advertising mail.

Figure 9: CTT and Subsidiaries
Source: CTT Website

In 2021, every business segment of CTT grew, resulting in an operating income of 847 900 000€, more 13,8% compared to 2020, with the remarkable performance of the Express and Parcels business (grown by 62 700 000€, 32, 5%), followed by Mail and Others (+18 300 000€, 4.3%), Banco CTT (+16 800 000€, 20,4%) and Financial Services and Retail (+4 800 000€, 11,0%).

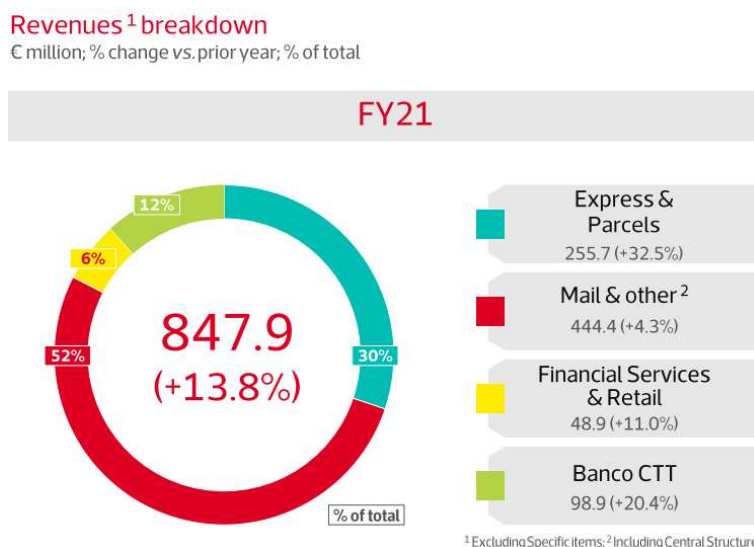


Figure 10: CTT Revenues Breakdown
Source: CTT Full Year 2021 Results Presentation

4.5.1. Mail

As a Universal Postal Service provider, CTT's activity is intrinsically social, all residents in Portugal are potential customers, receivers, and/or senders.

The mail segment covers the entire Portuguese territory, it represents the Company's core, contributing 52% of 2021 revenues, and consists of transportation, treatment, and distribution, locally and internationally, of addressed mail (transactional, advertising, and editorial mail), the unaddressed mail and philately.

This business unit and all its types of products were quite affected by the lockdown provoked by COVID-19, resulting in the closure or reduction of the opening hours of CTT post offices, lower demand for B2C services, as well as a decrease in the activity of customers in the B2B segment. During this period, advertising mail was also greatly affected leading to the divestment of customers, in some cases with full suspension of sending and campaigns. The international mail volumes were also negatively impacted due to the rather restrictive measures imposed by the pandemic both in international outbound mail and in international inbound mail (e.g., constraints in air cargo transportation).

With the lifting of pandemic restrictions and some innovation efforts carried out by CTT, in 2021 the operational income of mail registered an increase in units compared to 2020 (Appendix A: CTT Mail Volumes).

The main reasons that allowed to achieve these results were the contribution of the business solutions segment, following the acquisition and consolidation of NewSpring Services and a commercial positioning focused on the commercialization of outsourcing services and other

projects and contracts. These led to the growth in the mail segment and outgoing international mail and ultimately to the increase of CTT's wallet share with its mail customers.

On the other hand, the growth registered in these business lines was partially penalized by the revenues decrease from international inbound mail, which was greatly impacted by the entry into force (as of 1 July 2021) of the regulation that abolished VAT exemption, i.e., all shipments originated from non-EU countries are now subject to customs clearance.

CTT is carrying out transformation initiatives to drive revenue sustainability and at the same time trying to improve its image with the public. Some of the initiatives so far revolve around reducing dependence on traditional mail services, making available to customers more environmentally friendly mail products, and offering a 100% ecological product, known as "green mail". Despite all CTT's efforts, the company previewed for 2022 a decline in mail volumes.

4.5.2. Express & Parcels

The restrictions imposed on most sectors of the economy due to the COVID-19 pandemic led to the reduction in B2B traffic in the first half of 2020 and strong growth in e-commerce activities in the sectors of food, sports and leisure, education and culture, and consumer electronics (B2C) which, combined with the commercial dynamism that characterizes CTT, resulted in high volume growth.

CTT has been benefiting from the growth of this business segment in Portugal and Spain, consolidating its Iberian presence, through investments in the Spanish market, either in new installations (expansion of Express and Parcels network), or in software, reflecting more efficiency in the delivery service. In 2020, the company opened 20 new sorting centers, renovated the main ones in Madrid, Barcelona, Valencia, and Murcia, and acquired new software tools to optimize parcel deliveries. These decisions made an impact on productivity, service quality, and reduction of delivery costs, and boosted the volumes of Courier, Express, and Parcels (CEP), making CTT Express a reference operator in the Iberian urgent parcels market.

The revenues of this business segment totaled 255 700 000€ in 2021, an increase of 62 700 000€ (+32.5% YoY). In Portugal, Express & Parcels' revenues stood at 135 100 000€, growing 17 100 000€. Revenues in Spain were recorded at 117 300 000€ in 2021, growing by 45 000 000€ (+62.3% YoY).

For the year 2022, the Company is focused on harnessing the full potential of e-commerce in Portugal and Spain, expanding its integrated Iberian presence. The Company's ambition for its operation in Spain is to become the reference operator for Iberian shipments.

4.5.3. Banco CTT

CTT is considered a benchmark banking institution for Portuguese families, with more than 600 000 clients with open bank accounts, of which 56 000 were opened during the last year. These numbers contributed to achieving the award as leader of the National Customer Satisfaction Index (ECSI 2020 award). The main driver for this growth was the partnership with Sonae Financial Services (in April 2021) which resulted in Banco CTT as the sole lender for the Cartão Universo loan book.

Banco CTT reached a profitability milestone, consolidating net profit for the first time in 2020, even with the pandemic's impact. Interest from consumer credit grew by 4 300 000 (+12.7% YoY), as a result of the increase in car loans and leasing, leading to a decrease in mortgage loan interests, due to the focus on products with greater risk-adjusted profitability. Commissions received in this business unit, in particular, the commissions received from accounts and cards, savings products, and payments, reached 39 300 000€, up by 5 800 000 versus 2020 (+17.5% YoY).

As usual, to obtain and maintain sustainable clients, CTT also applied to this business segment an eco-friendly initiative, the production of debit cards using 100% recycled plastic.

4.5.4. Financial Services

The state of emergency and its restrictive procedures strongly influenced the performance of financial services in 2020. The pandemic measures generated a preference for liquidity over medium/long-term financial investments, reduced post office opening hours, and caused access limitations to CTT Retail Network.

In 2021, Financial Services & Retail recorded an increase in revenues of 4 800 000€ (+11.0% YoY), representing 48 900 000€. Financial services (excluding Retail) obtained the higher weight in revenues, registering a rise of 200 000 €. This growth was driven by revenues from public debt certificates (Savings Certificates and Treasury Certificates Savings Growth) and other savings and insurance products (capitalization insurance and others).

CTT's insurance segment increased its distribution network, reflecting a significant growth potential for the company. With the aim of expanding the range of products available, CTT continued to develop its savings offering and non-life insurance, which includes auto, health,

personal accident, and third-party liability products. Revenues from Retail products and services (excluding other revenues) reached 17 600 000€ in 2021, an increase of 35.2%, which was supported by the distribution of lotteries and "scratch cards" throughout the Retail Network. Contrarily, merchandising product sales declined by 40.5%, heavily influenced by the decrease in personal protective equipment sales.

5. Company Valuation

The valuation of Correios de Portugal was based on the information available in the integrated company report that discloses the yearly results until the 31 of December 2021, presenting, whenever available, aggregates of CTT, S.A., and all its subsidiaries.

The chosen models for the valuation of CTT were the FCFF method and Relative Valuation. Before applying the FCFF model, we needed to define several assumptions in line with the reality worldwide and the industry in which CTT operates. This chapter contains the rationality of the assumptions since they directly affected the obtained results.

The cash flows were projected considering a five-year horizon (2022-2026). After this period, we assumed a terminal growth rate based on the expected inflation in the Portuguese economy.

In order to calculate CTT share's price with the Relative Valuation Model it was necessary to define companies with similar characteristics (peer group) and the multiples to use (PER and Enterprise value/ EBITDA).

In conclusion, a sensitivity analysis was conducted to observe the share price behavior with other terminal growth rate and WACC conditions.

5.1. Valuation assumptions

5.1.1. Revenues

The first assumption we had to make was regarding the projection of CTT revenues since this rubric has a meaningful impact in other assumptions dependent of this item.

When analyzing the reports of CTT, we could see that even with the pandemic situation, due to CTT business segments being essential for the population, the company revenue continued to increase over the years. As already explained in chapter 4.5 Business Segments, and as we can see in *Figure 11: Evolution of Mail Market Volumes in Portugal*, the evolution of mail market consists in a decrease in the use of mail and, on the other hand, an increase in

the Parcels business segment, being the segment that contributes the most to the growth of CTT revenues (*Appendix B: CTT's Revenues Decomposition*).

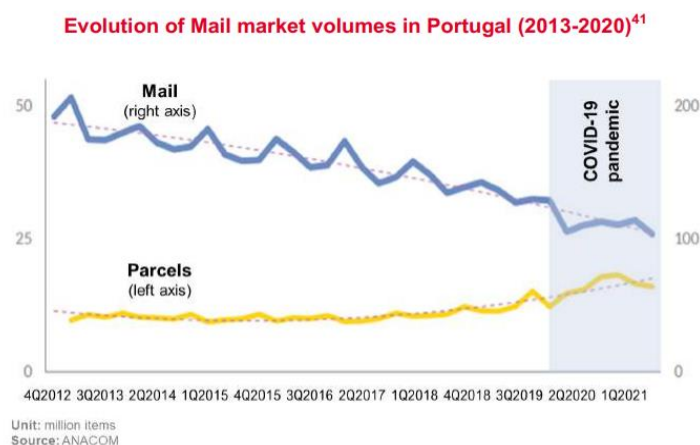


Figure 11: Evolution of Mail Market Volumes in Portugal
Source: ANACOM

Although the effects of the pandemic were still being felt in 2021, the restrictions towards mobility, postal traffic seems to have started a process of recovery from the shock caused by the pandemic. This recovery should be established in 2022.

Despite possible variations in income due to the pandemic, CTT is a company at a mature stage, therefore very sharp fluctuations from those registered until 2019 are not expected. The growth rate for the forecasted revenues (2022 to 2026) was computed using the average growth rate for the last 4 years (2017-2020) to reflect the impact of the pandemic.

	2016	2017	2018	2019	2020	2021
Revenues Growth	-	2,50%	-0,87%	4,56%	0,67%	13,77%
Revenues Recurring	696 823 000,00 €	714 278 000,00 €	708 034 000,00 €	740 286 000,00 €	745 240 000,00 €	847 870 000,00 €
Average Growth Rate	-		1,71%			-

Table 1: CTT Revenues 2016-2021
Source: CTT Integrated Report from 2016 to 2021, Own Calculations

	2021	2022E	2023F	2024F	2025F	2026F
Revenues Growth	-			1,71%		
Revenues	847 870 000,00 €	862 400 626,79 €	877 180 276,55 €	892 213 217,01 €	907 503 789,00 €	923 056 407,75 €

Table 2: CTT Forecasted Revenues
Source: CTT Integrated Report 2021, Own Calculations

5.1.2. EBITDA

For the projection of EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortizations), we used the EBITDA margin as the projection driver since after analyzing

CTT's past financials, it was possible to observe that the sales cost increased proportionally as the revenue increased (*Appendix C: CTT's Operating Costs*).

In 2020 and 2021, EBITDA margin values were very similar, hence choosing to use the EBITDA Margin of 2021 (13,93%) for the following years. In the table below, we can see CTT's EBITDA.

	2020	2021	2022E	2023F	2024F	2025F	2026F
Revenues	745 240 000,00 €	847 870 000,00 €	862 400 626,79 €	877 180 276,55 €	892 213 217,01 €	907 503 789,00 €	923 056 407,75 €
EBITDA Margin	13,91%	13,93%	13,93%	13,93%	13,93%	13,93%	13,93%
EBITDA	103 627 000,00 €	118 099 000,00 €	120 122 957,08 €	122 181 600,34 €	124 275 524,21 €	126 405 333,34 €	128 571 642,70 €

Table 3: CTT's EBITDA Projections
Source: CTT Integrated Report 2021, Own Calculations

5.1.3. Depreciation & Amortization

According to the CTT's Integrated Report of 2021, we acquired the information that depreciation and amortization were positively impacted in 2021 by the review of the useful life of some assets, reduced by 6,6% when compared with 2020, totalizing up to 58 000 000€.

For the projection of CTT's Depreciation & Amortization (D&A), we took a similar approach to the one used in EBITDA's calculations. In the table below, we can observe the projection of CTT's Depreciation & Amortization costs by assuming an equal ratio (6,84%) from 2021 to 2026 and by applying this ratio to the projected revenues.

	2021	2022E	2023F	2024F	2025F	2026F
Revenues	847 870 000,00 €	862 400 626,79 €	877 180 276,55 €	892 213 217,01 €	907 503 789,00 €	923 056 407,75 €
Depreciation & Amortization/Revenues	6,84%	6,84%	6,84%	6,84%	6,84%	6,84%
Depreciation & Amortization	58 006 442,00 €	59 000 544,82 €	60 011 684,38 €	61 040 152,65 €	62 086 246,60 €	63 150 268,29 €

Table 4: CTT's Depreciation & Amortization Projections
Source: CTT Integrated Report 2021, Own Calculations

5.1.4. Capital Expenditures

In Appendix D: Calculation of CTT's Non-Current Assets, we considered the absence and existence of Banco CTT, being possible to observe its impact on the increase of the value of non-current assets through the heading "credit to banking". We also considered that the behavior of revenues and the value of non-current assets were related and therefore, we calculated the Non-Current Assets/Revenues ratio of 2021 and applied it to the following years, thus allowing us to calculate the expected value of non-current assets for those years.

The annual variation of non-current assets is called net CAPEX and adding this value to the depreciation & amortization calculated for the period 2022-20261, the CAPEX value per

¹ The value of CAPEX for 2021 was taken from CTT Integrated Report

year of the CTT group was obtained. In the table below, we can see the projection of CTT's CAPEX by applying the driver, therefore adding 1,953 to the revenues.

	2021	2022E	2023F	2024F	2025F	2026F
Revenues	847 870 000,00 €	862 400 626,79 €	877 180 276,55 €	892 213 217,01 €	907 503 789,00 €	923 056 407,75 €
Non Current Assets/Revenues	1,953	1,953	1,953	1,953	1,953	1,953
Non Current Assets	1 656 295 676,00 €	1 684 680 940,62 €	1 713 552 666,25 €	1 742 919 189,74 €	1 772 788 990,84 €	1 803 170 694,64 €
Net Capex		28 385 264,62 €	28 871 725,62 €	29 366 523,49 €	29 869 801,11 €	30 381 703,80 €
Depreciações	58 006 442 000,00 €	59 000 544 822,28 €	60 011 684 380,26 €	61 040 152 646,12 €	62 086 246 595,79 €	63 150 268 294,72 €
Capex	36 146 649,00 €	59 028 930 086,91 €	60 040 556 105,89 €	61 069 519 169,61 €	62 116 116 396,90 €	63 180 649 998,52 €

Table 5: CTT Forecasted Capex
Source: CTT Integrated Report 2021, Own Calculations

We can see that CAPEX values increased yearly, in accordance with CTT's investment strategy in the different business segments.

5.1.5. EBIT

EBIT calculation was simple since for this component we just subtracted the depreciation & amortization values in each year from the EBITDA. In the table below, we can see EBIT values.

	2021	2022E	2023F	2024F	2025F	2026F
EBITDA	118 099 000,00 €	120 122 957,08 €	122 181 600,34 €	124 275 524,21 €	126 405 333,34 €	128 571 642,70 €
Depreciations & Amortization	58 006 442,00 €	59 000 544,82 €	60 011 684,38 €	61 040 152,65 €	62 086 246,60 €	63 150 268,29 €
EBIT	60 092 558,00 €	61 122 412,26 €	62 169 915,96 €	63 235 371,57 €	64 319 086,74 €	65 421 374,41 €

Table 6: CTT EBIT Calculation
Source: Own Calculations

In this assessment, we were not as optimistic about the company's future results as CTT was in the integrated report, resulting in a lower value for EBIT as the one predicted by CTT. The company expects a recurring EBIT between 65 000 000 € and 75 000 000 € in 2022, although in our assessment, EBIT for that specific year was substantially lower, amounting to 61 122 412€.

5.1.6 Working Capital

In CTT reports we could extract information including or excluding Banco CTT, but since we were analyzing CTT's group, we wanted to consider the impact of Banco CTT in our values.

Through the calculation of working capital with the effect of Banco CTT for 2020 and 2021, the current assets that more impacted the value of the working capital were "Credit to banking clients" and "Other banking financial assets", regarding current liabilities the "Banking clients' deposits and other loans" had a considerable weight (Appendix E: Calculation of CTT's Working Capital).

The total value of the asset “Cash and Equivalents” was not considered, having been accounted based on the integrated report of CTT 2021, a part corresponding to the demand deposits at Bank of Portugal (mandatory deposits to satisfy the legal requirements of minimum cash reserves), cash and sight deposits, since the remaining amount is not considered necessary for the company's core operations, being considered as a non-operating asset.

The weight of working capital/revenue in 2021 was considered a projection driver for the following years, enabling the calculation of working capital and net working capital. In the table below we have the information available from 2020 to 2026.

	2020	2021E	2022F	2023F	2024F	2025F	2026F
Revenues	745 240 000,00 €	847 870 000,00 €	862 400 626,79 €	877 180 276,55 €	892 213 217,01 €	907 503 789,00 €	923 056 407,75 €
WC/Revenues	-2,130	-2,202	-2,202	-2,202	-2,202	-2,202	-2,202
WC	-1 587 670 895,00 €	-1 866 656 185,00 €	-1 898 646 566,03 €	-1 931 185 191,82 €	-1 964 281 458,09 €	-1 997 944 921,56 €	-2 032 185 302,74 €
Δ WC	-	-278 985 290,00 €	-31 990 381,03 €	-32 538 625,79 €	-33 096 266,27 €	-33 663 463,47 €	-34 240 381,19 €

Table 7: CTT Working Capital Projections

Source: Own Calculations

The net working capital in the period 2021-2026 was negative, the company's current assets were less than its current liabilities, justified by the entry of money, mainly because of Banco CTT (the rubric “Banking clients’ deposits and other loans” presents very high values) and the investments made by CTT (this conclusion agreed with the values obtained for CAPEX).

5.1.7. WACC Components

5.1.7.1. Equity Market Value

The market value of Equity was obtained by multiplying the number of CTT outstanding shares by the respective price. CTT website stated that on 31st December 2021 the share price was 4,56€ and the number of outstanding shares was 150 000 000, with this information we were able to calculate a market value of equity equal to 684 000 000€.

	2021
Share's price	4,56 €
Number of Shares	150 000 000
Equity Market Value	684 000 000,00 €

Table 8: CTT Equity Market Value

Source: CTT Website, Own Calculations

5.1.7.2. Debt Market Value

To obtain the market value of debt, we took from the 2021 CTT Annual Report the book value of the financial debt of CTT, distributed in *Table 9: CTT Financial Debt (Book Value)*.

	2021
Bank loans	62 161 852,00 €
Lease liabilities	87 174 586,00 €
Non-current liabilities	149 336 438,00 €
Bank loans	22 169 000,00 €
Confirming	1 500 152,00 €
Lease liabilities	28 113 860,00 €
Current liabilities	51 783 012,00 €
Debt (book value)	201 119 450,00 €

Table 9: CTT Financial Debt (Book Value)
Source: CTT Integrated Report 2021

Considering the information related to CTT's book value of debt and applying the formula below, a market value of debt equal to 224 056 431,14 € was obtained (Appendix F: Calculation of CTT's Market Value of Debt).

$$\text{Market Value of Debt} = I_E \times \frac{1 - \left(\frac{1}{1+k_d}\right)^t}{k_d} + \frac{BV_D}{(1+k_d)^t} \quad (12)$$

where,

I_E – Interest Expenses; BV_D – Book Value of Debt; t – Weighted Average Maturity of Long Term Debt

5.1.7.3. Cost of Equity

To determine the cost of equity we applied formula 13 after gathering all the inputs. According to the Statista website, the risk-free rate of investment in Portugal in 2021 was 1,40% and the market risk premium in 2021 for Portuguese companies was 6,80%. Given that CTT is a quoted company, for its levered beta, we consulted on 18th September 2022 Yahoo Finance website and found the beta (5Y Monthly) standing at 1,03.

$$\text{Cost of Equity } (k_e) = R_f + \beta \times (R_m - R_f) \quad (12)$$

where,

R_f - Risk Free Rate; R_m - Expected Return of the market; β - Stock's sensitivity to the market return

In the table below, we can see a compilation of all the inputs and the value obtained for the cost of equity.

	2021
Risk Free Rate	1,40%
Beta	1,03
Market Risk Premium	6,80%
Ke	8,40%

Table 10: CTT Cost of Equity
Source: Statista Website, Yahoo Finance Website, Own Calculations

5.1.7.4 Cost of Debt

To estimate the cost of debt, we used 2 different ways, for a matter of prudence, the selected rate was the highest one.

The first method was based on the remuneration of the issued secured debt, consulted on the CTT Integrated Report 2021, allowing us to calculate the average spread. After consulting the value of Euribor 1M on the 31 of December 2021 and discounting the corporate tax rate given by the Portugal government which is equal to 21% (remains the same since 2015), we obtained a cost of debt of 1.54%.

Remuneration	2021 Spread
Euribor 1M	-0,58%
Euribor 1M+0,085%	0,09%
Euribor 1M+1,6%	1,60%
Euribor 1M+3,75%	3,75%
Euribor 1M+0,7%	0,70%
Euribor 1M+0,8%	0,80%
Euribor 1M+1,35%	1,35%
Euribor 1M+2,85%	2,85%
Euribor 1M+3,68%	3,68%
Euribor 1M+5,49%	5,49%
Euribor 1M+5%	5,00%
Average spread	2,53%
rd	1,95%
Cost of Debt	1,54%

Table 11: CTT Cost of Debt (1st way)

Source: CTT Integrated Report 2021, Euribor Website, Own Calculations

The other way to calculate the cost of debt was based on the value of interest expense, consulted in CTT Integrated Report 2021. By applying the formula 14, we obtained a cost of debt of 3,35%, a higher value than the previous one, therefore this was the rate that we used in our analysis.

$$\text{Cost of Debt } (k_d) = \frac{I_E}{BV_D} \times (1 - t_c) \quad (134)$$

where,

t_c - Corporate Tax Rate

	2021
Interest Expenses	8 532 413,00 €
Debt (book value)	201 119 450,00 €
Corporate Tax Rate	21,00%
Cost of Debt	3,35%

Table 12: CTT Cost of Debt (2nd way)

Source: CTT Integrated Report 2021, Euribor Website, Own Calculations

5.1.7.5. WACC

The Weighted Average Cost of Capital (WACC) was obtained through the calculation of all the previous elements (cost of equity, cost of debt and CTT's capital structure). By applying formula 15 a WACC of 7,16% was estimated. In the table below we can see a compilation of all the inputs for the WACC value.

$$WACC = \frac{D}{D+E} k_d(1 - t_c) + \frac{E}{D+E} k_e \quad (145)$$

where,

D - Market Value of Debt; E - Market Value of Equity; k_e - Cost of Equity; k_d - Cost of Debt

	2021
Cost of Debt	3,35%
Cost of Equity	8,40%
Market Debt Value	224 056 431,14 €
Market Equity Value	684 000 000,00 €
E/(D+E)	0,753
D/(D+E)	0,247
WACC	7,16%

Table 13: WACC Calculation

Source: Own Calculations

5.1.8. Perpetuity Growth Rate

When applying the FCFF model, we assumed that cash flows will be produced at a constant growth rate until perpetuity. This constant growth rate is the terminal rate that can be obtained by applying the following formula:

$$TGR = ((1 + \text{Expected Inflation}) \times (1 + \text{Expected GDP Growth Rate}) \times (1 + \text{Adjustment Factor})) - 1 \quad (16)$$

Given that Correios de Portugal operate mainly in Portugal, we only considered the expected inflation (1,30%) and GDP growth rate (1,90%) in this country for the year of 2026.

It is necessary to remember that CTT is not a monopoly in the parcel delivery sector, therefore, it is expected that despite the volume increase in this segment, the competition in the

future could be greater, and consequently, translating into a possible lower volume of growth for CTT.

In this analysis, we considered that CTT can keep up with the inflation rate but grows at a lower pace than expected for the market in 2026 (1,90%). In the table below, we can see how the TGR was obtained.

	2026F
Expected Inflation Rate	1,30%
Expected GDP growth rate	1,90%
Adjustment Factor	-1,85%
TGR	1,32%

Table 14: Calculation of Terminal Growth Rate
Source: Statista Website, Own Calculations

5.1.9. Non-Operating Assets

In calculating the NOA through CTT's balance sheet, we had to take into account that 115 900 801,00 € of the value of Cash and Cash Equivalents were already considered as working capital, since CTT requires a certain value of cash to be operational.

	2021
Non Current Assets	302 155 446,00 €
Financial assets at fair value through profit or loss	2 261 947,00 €
Debt securities at amortized cost	294 986 658,00 €
Debt securities at fair value through other comprehensive income	4 906 841,00 €
Current Assets	827 332 963,00 €
Financial assets at fair value through profit or loss	24 999 138,00 €
Debt securities at amortized cost	39 173 861,00 €
Debt securities at fair value through other comprehensive income	1 188 069,00 €
Cash and cash equivalents	761 971 895,00 €
Non Operating Assets	1 129 488 409,00 €

Table 15: Calculation of Non-Operating Assets
Source: CTT Integrated Report 2021, Own Calculations

5.1.10. Debt

After calculating the enterprise value, we needed to subtract the company's debt. This debt value was computed based on the current and non-current liabilities that were not considered as working capital.

	2021
Non-current liabilities	705 281 916,00 €
Medium and long term debt	149 336 438,00 €
Employee benefits	260 805 742,00 €
Provisions	14 679 520,00 €
Prepayments	272 088,00 €
Other banking financial liabilities	277 760 616,00 €
Deferred tax liabilities	2 427 513,00 €
Current liabilities	51 783 012,00 €
Short term debt	51 783 012,00 €
Total Debt	757 064 928,00 €

Table 16: CTT Debt

Source: CTT Integrated Report 2021, Own Calculations

5.2. Discounted Cash flow Valuation: Free Cash Flow to the Firm

For the annual calculation of the Free Cash Flow to the Firm, we applied formula 6. As previously explained, the FCFF model assumes the perpetuity of the firm and can be calculated by applying the formula 8.

In the table below, we have detailed information on the calculation of FCFF, Enterprise Value, and Equity value. To calculate CTT's Enterprise Value we discounted all expected future FCFF and terminal value at the WACC rate, resulting in 853 094 635,70 €. The equity value of CTT was calculated by adding the value of Non-Operating Assets and subtracting the Debt.

	2021	2022E	2023F	2024F	2025F	2026F	2027F
	0	1	2	3	4	5	6
EBIT	60 092 558,00 €	61 122 412,26 €	62 169 915,96 €	63 235 371,57 €	64 319 086,74 €	65 421 374,41 €	-
Taxes	12 619 437,18 €	12 835 706,57 €	13 055 682,35 €	13 279 428,03 €	13 507 008,22 €	13 738 488,63 €	-
NOPLAT	47 473 120,82 €	48 286 705,69 €	49 114 233,61 €	49 955 943,54 €	50 812 078,53 €	51 682 885,78 €	52 362 537,98 €
Net capex	-	28 385 264,62 €	28 871 725,62 €	29 366 523,49 €	29 869 801,11 €	30 381 703,80 €	0,00 €
Δ WC	-	-31 990 381,03 €	-32 538 625,79 €	-33 096 266,27 €	-33 663 463,47 €	-34 240 381,19 €	0,00 €
FCFF	-	51 891 822,09 €	52 781 133,78 €	53 685 686,31 €	54 605 740,89 €	55 541 563,17 €	52 362 537,98 €
Terminal Value	-	-	-	-	-	896 265 898,13 €	-
FCFF+TV	-	51 891 822,09 €	52 781 133,78 €	53 685 686,31 €	54 605 740,89 €	951 807 461,31 €	-
Enterprise Value	853 094 635,70 €						
Non Operating Assets	1 129 488 409,00 €						
Debt	757 064 928,00 €						
Equity Value	1 225 518 116,70 €						
Share Price	8,17 €						

Table 17: Calculations of FCFF, EV, EQV and Share Price

Source: Own Estimates

We can see that the FCFF during the analyzed period was increasing positively, which translates that the company has collected enough revenue to cover its costs. To obtain the price of CTT's shares, we divided the Equity Value of CTT by the 150 000 000 outstanding shares, given a share price of 8,17€, higher than the market price of 4,56€.

5.3. Sensitivity Analysis

The accurate calculation of a company shares price is challenging since all the assumptions made had an impact on the final forecast. This sensitivity analysis has as its goal to understand the meaning of how the value of the shares varies according to changes in key variables.

The analysis was based on a fluctuation of both cost of capital and the terminal growth rate, since these were two of the variables that most influenced the results.

CTT is a company in a stable industry at a mature stage, so WACC ranged $\pm 0,50\%$ (between 5,16% and 9,16%) and g ranged $\pm 0.25\%$ (between 0,32% to 2,32%). In our model, we estimated a TGR of 1,32% and a WACC of 7,16% which led to a share price of 8,17€, a higher price than the market value.

		WACC								
		5,16%	5,66%	6,16%	6,66%	7,16%	7,66%	8,16%	8,66%	9,16%
TGR	0,32%	9,58 €	8,92 €	8,37 €	7,91 €	7,52 €	7,18 €	6,88 €	6,62 €	6,39 €
	0,57%	9,90 €	9,18 €	8,58 €	8,09 €	7,66 €	7,30 €	6,99 €	6,71 €	6,47 €
	0,82%	10,25 €	9,46 €	8,81 €	8,27 €	7,82 €	7,43 €	7,10 €	6,81 €	6,55 €
	1,07%	10,65 €	9,77 €	9,06 €	8,48 €	7,99 €	7,58 €	7,22 €	6,91 €	6,64 €
	1,32%	11,10 €	10,11 €	9,33 €	8,70 €	8,17 €	7,73 €	7,35 €	7,03 €	6,74 €
	1,57%	11,61 €	10,50 €	9,64 €	8,95 €	8,37 €	7,90 €	7,49 €	7,14 €	6,84 €
	1,82%	12,20 €	10,95 €	9,98 €	9,22 €	8,59 €	8,08 €	7,64 €	7,27 €	6,95 €
	2,07%	12,88 €	11,45 €	10,36 €	9,52 €	8,83 €	8,27 €	7,81 €	7,41 €	7,07 €
	2,32%	13,69 €	12,02 €	10,80 €	9,85 €	9,10 €	8,49 €	7,98 €	7,56 €	7,19 €

Table 18: Sensitivity Analysis with TGR and WACC
Source: Own Estimates

In this analysis, it is perceived that the share price value varies from 6,39€ to 13,69€, remaining consistently above the market value on December 31 of 2021 (4,56 €). The cases in which the share would have a fair value lower than the estimated are highlighted in red. It is also possible to notice that both variables significantly changed the share price and that they behave inversely, since the CTT share price reached its maximum value as the TGR increased and the WACC decreased.

5.4. Relative Valuation: Multiple Analysis

In order to compare and complement the results of the FCFF method, a relative valuation analysis was carried out. It is important to keep in mind that this type of analysis, unlike the DCF Model, does not incorporate the company's future results as it only considers past results.

Since the company operates under a monopoly, there are no direct competitors for CTT in Portugal. For peer group selection (similar companies), we chose some comparable companies based on:

- Area of activity (postal sector);
- Geography (European companies);
- Size (large).

The table below dates to 2021 given that we are determining CTT's share price relative to that year.

Company	Country	P/E	EV/EBITDA
Royal Mail	United Kingdom	5,84	4,09
Deutsche Post	Germany	13,79	8,18
Poste Italiane	Italy	9,51	26,63
PostNL	Netherlands	8,48	5,94
Bpost	Belgium	6,11	3,59
Oesterreich Post	Austria	16,77	5,49
CTT	Portugal	17,69	1,82
Industry Average		11,17	7,96
Comparable Average		10,08	5,46
Net income		38 404 113,00 €	
EBITDA		118 099 000,00 €	
Enterprise Value		-	644 584 342,00 €
Equity Value		387 241 472,75 €	1 017 007 823,00 €
# CTT Shares		150 000 000	
Share's Price		2,58 €	6,78 €

Table 19: Multiples Calculation
Source: TradingView Website (date to 2021), Own Calculations

5.4.1. Price Earnings Ratio (PER)

The P/E is based on an equity approach and is a financial ratio that relates the share price to earnings per share. The ratio P/E has units of years, which can be interpreted as the number of years of earnings to pay back the purchase price, or a measurement of what the market is willing to pay for the current operations as well as the prospective growth of the company.

The average P/E ratio was 11,17, which means that, on average, a company that operates in the postal sector has an equity market value of 11,17x earnings.

CTT had the highest value for PER, equal to 17,69, this situation generally means increased demand because investors expect earnings growth and are willing to potentially overspend today based on future earnings. With this PER value, investors also considered CTT's share less risky than the sector, this means, CTT has a lower beta. We can confirm this statement by analyzing CTT's beta and industry's beta (1,03 vs 1,06) (Appendix G: Calculation of the Postal Industry Beta). We could not find available information for the beta of the Postal industry, therefore, for its computation, we took the beta of the chosen companies (peer group) from the Finbox website and calculated the average value.

The PER multiple value was 10,08, multiplying the peer's average P/E ratio by CTT's Net Income of 2021 and after dividing by the number of outstanding shares resulted in a price of 2,58€ per share, a lower value than the actual share close price of 4,56€ at the end of 2021, which means that under this method, CTT's shares were overvalued.

5.4.2. Enterprise Value/ EBITDA (EV/EBITDA)

This multiple is based on the enterprise value of the company and is very useful as it ignores the financial structure. This ratio must be low, which means that the company generates more resources (EBITDA) per unit of company value (Enterprise Value).

About this multiple, we considered Poste Italiane an outlier since the index was very high compared to other companies. We reached an average EV/EBITDA ratio of 5.46, higher than CTT's EV/EBITDA ratio, possibly meaning the company's undervaluation.

After making the necessary calculations to achieve the company's Equity Value, we obtained a price of 6,78€, which is higher than the market value in 2021.

6. Conclusion

The major purpose of this project was to estimate the fair share price of Correios de Portugal, S.A. and give the shareholders a recommendation to buy, maintain or sell the company's shares.

In the literature review, different theoretical models were studied, and there is not a single ideal model of valuation. CTT is in a mature stage with a stable financial structure, so for this valuation, we chose the Discounted Cash Flows Method, using Free Cash Flow to the Firm Model and complemented with the Relative Valuation Method, more precisely the Multiples, a simple method that directly compares the company with its competitors.

Regarding Relative Valuation, we chose the multiples Price-to-Earnings ratio and Enterprise Value to EBITDA to perform the valuation, based on comparing a Peer Group with the company under analysis. Notice once more that the choice of the multiples and the Peer Group (the obtained results are more accurate as the more similar the selected companies are) could lead to different valuation results.

In the graphic, we can interpret the results obtained for CTT share price through each valuation methodology.

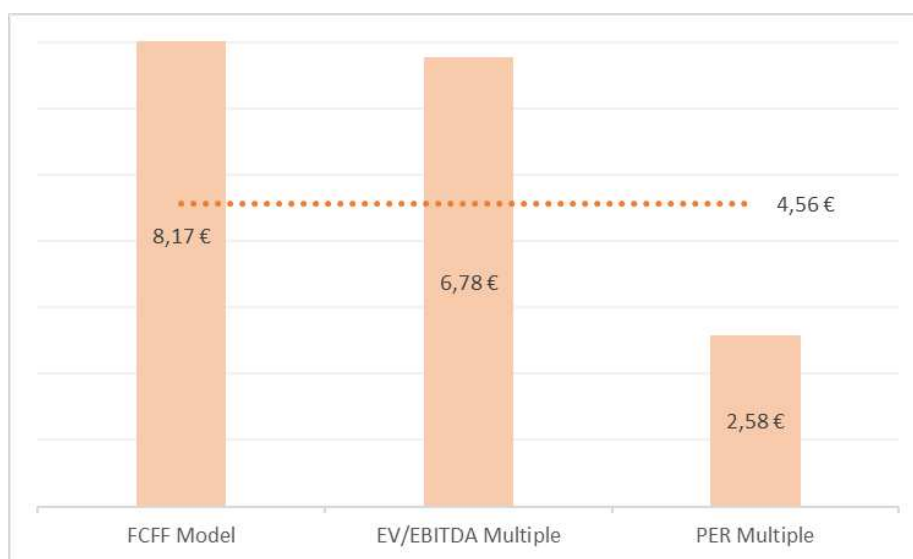


Figure 12: Comparison of CTT Share Price
Source: CTT Annual Report 2021, Own Calculations

The disparity in the results obtained by the different valuation methodologies is not significant, despite giving us the idea that the market saw the company with less value than projected in this valuation. The prices according to the FCFF model and by the EV/EBITDA multiple are in line, only the share price under the PER multiple had a lower value than the market valuation.

Therefore, we conclude that CTT share price is undervalued, since 2 of the 3 obtained prices are above the market value recorded on December 31, 2021. Our final recommendation is that investors should maintain in their wallet or buy CTT shares at 4,56€ when they are worth between 6,78€ (Relative Valuation) and 8,17€ (FCFF Model).

The main limitation of this project was the formulation of the assumptions, which needed to consider not only the impact of Covid-19 but also the unpredictable future of the postal sector in order to properly apply the FCFF model, which mainly focuses on forecasting the future cash flow.

Another limitation identified was the inclusion of Banco CTT in our analysis, so for future investigations we suggest a valuation by segment, isolating Banco CTT from the remaining CTT businesses and a new equity valuation when more information about the market and CTT is available.

7. Bibliographic References

7.1. Academic Materials and Books

- Bernstrom, S. (2014), *Valuation: the market approach*. John Wiley & Sons.
- Copeland, T. (2002), Ascensão das opções reais: uma maneira de levar em conta a flexibilidade na gestão financeira. *HSM Management*, 6(31), 132-136.
- Damodaran, A. (2006), *Damodaran on valuation: Security Analysis for investment and Corporate Finance*, John Wiley & Sons, Inc.
- Damodaran, A. (2007), *Valuation Approaches and Metrics: A Survey of the Theory and Evidence*, Now Publishers, Inc.
- Damodaran, A. (2012), *Investment valuation: Tools and techniques for determining the value of any asset* (Vol. 666), John Wiley & Sons, Inc.
- Dar, A. A., & Anuradha, N. (2018), Comparison: binomial model and Black Scholes model. *Quantitative finance and Economics*, 2(1), 230-245.
- Esty, B. C. (1999), Improved techniques for valuing large-scale projects, *The Journal of Structured Finance*, 5(1), 9-25.
- Fernández, P. (2001), Valuation using multiples. How do analysts reach their conclusions? *IESE Business School*, 1, 1-13.
- Fernández, P. (2007), Company valuation methods. The most common errors in valuations, *IESE Business School*, 449, 1-27.
- Holanda, F. M. de A., Albuquerque, L. S., Marques, J. R. de C., & Cavalcante, P. R. N. (2009), Avaliação de empresas: uma abordagem das diversas metodologias, *Revista Ciências Administrativas*, 13(1).
- Koller, T., Goedhart, M., & Wessels, D. (2010), *Valuation: Measuring and Managing the Value of Companies*, (5th Edition), New Jersey: John Wiley & Sons, Inc.
- Luehrman, T. A. (1997a), What's it worth? A general manager's guide to valuation, *Harvard business Review*, 75(3), 132-132.
- Luehrman, T. A. (1997b), Using APV: A better tool for valuing operations, *Harvard business review*, 75(3), 145-145.
- Mamun, A. & Mansor, S. (2012), EVA as Superior Performance Measurement Tool, *Modern Economy*, 3, 310-318.
- Mota, A. (2020), *Company Valuation*. Working paper. ISCTE Business School.

Nassaka, D., & Rottenburg, Z. (2011), Analysis of corporate valuation theories and evaluation of ISS A. S, Augus.

Ollor, W. G., & Dagogo, D. W. (2009), The effect of venture capital financing on the economic value added profile of Nigerian SMEs. African Journal of Accounting, Economics, Finance and Banking Research, 5(5).

Vlaović-Begović, S., Momčilović, M., & Jovin, S. (2013), Advantages and limitations of the discounted cash flow to firm valuation. Škola biznisa, (1), 38-47.

7.2. Reports

Código do Imposto sobre o Rendimento das Pessoas Coletivas (CIRC)

CTT Integrated Report 2017

CTT Integrated Report 2018

CTT Integrated Report 2019

CTT Integrated Report 2020

CTT Integrated Report 2021

CTT FY21 Results Presentation

7.3. Internet References

ANACOM, [Moni_Densidade_2021.pdf \(anacom.pt\)](#), 22/03/2022

ANACOM, [ANACOM - ANACOM divulga dados sobre a rede postal e os indicadores de qualidade dos CTT em 2021](#), 15/06/2022

Finbox, [Beta \(5 Year\) For CTT - Correios De Portugal, S.A. \(CTTP.Y\) | finbox.com](#), 18/09/2022

Observador, [Novo contrato de concessão aos CTT garante “continuidade” com “ajustamentos” – Observador](#), 09/05/2022

Statista, [Average market risk premium Portugal 2021 | Statista](#), 01/06/2022

Statista, [Average risk free rate Portugal 2021 | Statista](#), 01/06/2022

Yahoo Finance, [CTT - Correios De Portugal, S.A. \(CTT.LS\) Stock Price, News, Quote & History - Yahoo Finance](#), 18/09/2022

8. Appendix

Appendix A: CTT Mail Volumes

	2020	2021
Transactional mail	447 200 000	415 700 000
Advertising mail	39 700 000	39 900 000
Editorial mail	30 000 000	29 000 000
Addressed mail	516 900 000	484 600 000
Unaddressed mail	412 300 000	449 900 000

Source: CTT's Annual Report of 2021

Appendix B: CTT's Revenues Decomposition

	2017	2018	2019	2020	2021
Mail	527 495 000,00 €	498 747 000,00 €	490 919 000,00 €	426 096 000,00 €	444 438 000,00 €
Express & Parcels	134 596 000,00 €	148 906 000,00 €	152 415 000,00 €	193 000 000,00 €	255 688 000,00 €
Financial Services & Retail	55 180 000,00 €	26 773 000,00 €	34 054 000,00 €	44 043 000,00 €	48 877 000,00 €
Bank	18 548 000,00 €	33 608 000,00 €	62 897 000,00 €	82 102 000,00 €	98 867 000,00 €
CTT Cenntrol Structure	108 968 000,00 €	-	-	-	-
Intragroup eliminations	-130 509 000,00 €	-	-	-	-
Revenues	714 278 000,00 €	708 034 000,00 €	740 285 000,00 €	745 241 000,00 €	847 870 000,00 €

Source: CTT's Annual Report of 2017 to 2021

Appendix C: CTT's Operating Costs ²

	2017	2018	2019	2020	2021
Staff costs	241 600 000,00 €	332 900 000,00 €	344 100 000,00 €	338 600 000,00 €	346 900 000,00 €
External suppliers & services	340 100 000,00 €	257 600 000,00 €	264 700 000,00 €	254 100 000,00 €	327 400 000,00 €
Impairments & provisions	-	-	-	15 300 000,00 €	11 400 000,00 €
Other costs	26 400 000,00 €	27 100 000,00 €	30 000 000,00 €	33 600 000,00 €	44 100 000,00 €
Operating Costs (EBITDA)	608 100 000,00 €	617 600 000,00 €	638 800 000,00 €	641 600 000,00 €	729 800 000,00 €

Source: CTT's Annual Report of 2017 to 2021

Appendix D: Calculation of CTT's Non-Current Assets

	2020		2021	
	Without Banco CTT	With Banco CTT	Without Banco CTT	With Banco CTT
Non Current Assets	515 088 923,00 €	1 500 444 610,00 €	530 311 354,00 €	1 656 295 676,00 €
Tangible Fixed Assets	294 989 377,00 €	294 989 377,00 €	296 287 578,00 €	296 287 578,00 €
Intangible Assets	58 016 961,00 €	58 016 961,00 €	63 507 247,00 €	63 507 247,00 €
Goodwill	70 201 828,00 €	70 201 828,00 €	81 471 314,00 €	81 471 314,00 €
Investment in Joint Ventures	2 925 100,00 €	2 925 100,00 €	17 992,00 €	17 992,00 €
Other Non-Current Assets	1 063 789,00 €	1 063 789,00 €	1 772 136,00 €	1 772 136,00 €
Credit to Banking	-	985 355 687,00 €	-	1 125 984 322,00 €
Deferred Tax Assets	87 891 868,00 €	87 891 868,00 €	87 255 087,00 €	87 255 087,00 €
Δ Non-Current Assets	-	-	15 222 431,00 €	155 851 066,00 €
Revenues	-	745 240 000,00 €	-	847 870 000,00 €
Non-Current Assets/Revenues	-	2,013	-	1,953

Source: CTT's Annual Report of 2021, Own Calculations

² 2017-2019 Excluding impairments & provisions

Appendix E: Calculation of CTT's Working Capital

	2020		2021	
	Without Bank	With Bank	Without Bank	With Bank
Current Assets	200 445 351,00 €	620 720 263,00 €	245 384 908,00 €	786 931 416,00 €
Inventories	6 601 999,00 €	6 601 999,00 €	6 872 274,00 €	6 872 274,00 €
Accounts receivable	153 616 009,00 €	153 616 009,00 €	160 930 050,00 €	160 930 050,00 €
Credit to banking clients	-	107 925 845,00 €	-	415 924 171,00 €
Income taxes receivable	-	-	8 268,00 €	8 268,00 €
Prepayments	6 498 759,00 €	6 498 759,00 €	8 725 934,00 €	8 725 934,00 €
Other current assets	33 728 584,00 €	33 728 584,00 €	68 848 382,00 €	68 848 382,00 €
Cash and equivalent	-	282 892 554,00 €	-	115 900 801,00 €
Other banking financial assets	-	29 456 513,00 €	-	9 721 536,00 €
Current Liabilities	498 439 346,00 €	2 208 391 158,00 €	505 053 394,00 €	2 653 587 601,00 €
Accounts payable	375 562 902,00 €	375 562 902,00 €	350 304 332,00 €	350 304 332,00 €
Banking clients' deposits and other loans	-	1 688 465 160,00 €	-	2 121 511 345,00 €
Employee benefits	18 630 568,00 €	18 630 568,00 €	21 090 144,00 €	21 090 144,00 €
Income taxes payable	1 340 420,00 €	1 340 420,00 €	11 611 897,00 €	11 611 897,00 €
Prepayments	3 412 059,00 €	3 412 059,00 €	3 452 240,00 €	3 452 240,00 €
Other current liabilities	99 493 397,00 €	99 493 397,00 €	118 594 781,00 €	118 594 781,00 €
Other banking financial liabilities	-	21 486 652,00 €	-	27 022 862,00 €
Working Capital	-297 993 995,00 €	-1 587 670 895,00 €	-259 668 486,00 €	-1 866 656 185,00 €

Source: CTT's Annual Report of 2021, Own Calculations

Appendix F: Calculation of CTT's Market Value of Debt

	2021
Interest Expenses	8 532 413,00 €
Debt (book value)	201 119 450,00 €
Weighted Average Maturity	17
Cost of debt	3,35%
Debt Market Value	224 056 431,14 €

Source: CTT's Annual Report of 2021, Own Calculations

Appendix G: Calculation of the Postal Industry Beta

Royal Mail	1,52
Deutsche Post	1,10
Poste Italiane	1,03
PostNL	1,34
Bpost	1,37
Oesterreich Post	0,32
CTT	1,03
Average Beta	1,10

Source: Finbox Website, Own Calculations