Valuation of CTT – Correios de Portugal S.A.

Master Thesis – Equity Valuation

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Abstract

The purpose of this thesis was to evaluate a listed company to demonstrate and use the knowledge gathered during the master. The selected company was CTT – Correios de Portugal, S.A. due to several reasons. Firstly, this is a Portuguese company, with long history and has always played an important role in Portuguese society. Secondly, it has operations in other countries than Portugal. Thirdly, it used to be owned by Portuguese Government and only recently became listed in Lisbon Stock Exchange. Finally, even though the main source of revenues (Mail) is facing severe challenges, as e-substitution and other factors have a negative impact on mail volumes, CTT's bet in the financial services sector, and more recently the Postal Bank, seemed to be good strategy.

Before getting to CTT's value assessment, the author goes through the academic theory on the most relevant valuation methodologies for this valuation exercise. Then, detailed descriptions of the company and postal sector were provided, as well as the assumptions and forecasts. In the end, the author opted for assessing CTT business, excluding the postal bank, with a WACC based discounted cash flow model. Then, decided to value the postal bank separately using a FTE methodology, discounted at cost of equity.

As means of conclusion, the author ends this thesis by presenting a price target and respective recommendation, and comparing his outcome with that of an investment bank's research note (BPI).

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Literature Review

The Importance of Valuation

Valuation is considered to be the heart of finance. Mergers and acquisitions, corporate finance, portfolio management are among the areas where valuation is particularly useful. "Understanding what determines the value of a firm and how to estimate that value seems to be a prerequisite for making reasonable decisions" (Damodaran, 2006).

According to studies, valuation is used for a wide range of purposes (Fernández, Company Valuation Methods. The Most Common Errors in Valuations, 2002):

- In a company buying and selling operations (e.g. highest/lowest price one would pay/sell);
- Value of listed companies (e.g. assess if the stock is underpriced or overpriced);
- Public offerings (e.g. determine the offering price);
- Inheritances and wills (e.g. to compare the shares' value with that of the other asset);
- Compensation schemes based on value creation (e.g. determine the value attributable to the executives);
- Identification of value drivers;
- Strategic decisions on the company's continued existence (e.g. before deciding whether to continue, sell, merge, milk, grow or buy a business);
- Strategic planning (e.g. to measure the impact of the company's possible policies and strategies on value creation and destruction).

It is observable that valuation is becoming more and more important. Some say that "managers must not only have a theoretical understanding of value creation, but must be able to create tangible links between their strategies and value creation" (Koller, Goedhart, & Wessels, 2002). Others even say that "all management decisions, either explicitly or implicitly, are based on some specific science" (Copeland, Koller, & Murrin, 2000).

In the following sections, it will be presented the main valuation models and a brief explanation/description in the most important ones. Then, after a reasoned explication, more emphasis is going to be given to the most relevant models to this thesis.

Valuation Methods

Firm valuation has proven to be a core activity in Finance (Damodaran, 2006).When developing their valuations, analysts have to choose from a wide set of valuation methods. There are innumerous valuation methods, and some say that "*barely a year goes by without a new model being launched and the list is lengthening alarmingly*" (Goldman Sachs, 1999). Regardless of its implicit assumptions, different methods should reach similar values. "Most popular valuation approaches are different ways of expressing the same underlying model" (Goldman Sachs, 1999). Therefore, the choice of which valuation model to use relies on the model that best tackles the imperfection of data.

Consequently, from these countless valuation approaches, **Damodaran and Fernandéz** set these approaches into four different groups.

Main Valuation Models			
Asset-Based Valuations	**Discounted Cash Flow Valuation**	**Relative Valuation (Multiples)**	**Contingent Valuation**
Book Value	Dividends Model (DDM)	Price-to-Earnings Ratio (PER)	Black and Scholes
Adjusted Book Value	Free Cash Flow to the Firm (FCFF)	Enterprise Value to EBITDA (EV/EBITDA)	Investment Option
Liquidation Value	Free Cash Flow to the Equity (FCFE)	EV/EBIT	Expand the project
Substantial Value	Capital Cash Flow (CCF)	EV/Sales	Delay the Investment
	Adjusted Present Value (APV)	Price-to-Book Value (PBV)	Alternative Uses
	Economic Value Added (EVA)	Price-to-Cash Flow Ratio (PCF)	
	Cash Value Added	Others	

The first one, the asset-based valuation, consists on models based on the company's balance sheet and extrapolating the company assets' value. However, these methodologies do not take into the account the decisive factors such as industry current situation nor the company's future evolution therefore it will not be given further details on these models.

The second one refers to all the cash flow discounting based models (DFC models)." A value of an asset is defined by the present value of the expected cash flows on the asset, discounted back at a rate that reflects the riskiness of these cash flows"(DAMODARAN 2006 and Fernandez). Most authors agree that this approach constitutes the best practice when valuing corporate assets.

Thirdly, commonly known as relative valuation, this group encompasses income statement based methods, which take into account the pricing of comparable assets (normally referred as peers) relative to size of its earnings, EBITDA, EBIT, sales and other multiples based on the company's income statement.

Finally, the fourth group comprises contingent valuation. Essentially, this approach uses option pricing methods to measure the value of the implied assets. Therefore, it is most commonly used to value companies such oil reserves and mines. Nonetheless, CTT's businesses (postal services, express and parcels and financial services) are not aligned with those mentioned and it has no stock options. This group is therefore irrelevant for this thesis.

In the following sections, a deeper theoretical insight will be presented in the most relevant methods. Given the characteristics of CTT, a greater importance will be given to DFC models and relative valuation. These two groups complement each other, as DFC models highlights operational cash flows to investors and multiples provide benchmark and an understanding of the company's strategic position within its industry.

DCF Methods

Damodaran agrees that DFC models "gets the most common play in academia and comes with the best theoretical credentials". The main focus of these models is on "cash flows to equity investors, dividends, or cash flows to equity and debt holders, free cash flow" (Goldman Sachs, 1999). Additionally, as mentioned before, the base of this method is that "the value of an asset is the present value of the expected cash flows on the assets discounted back at a rate that reflects the riskiness of these cash flows" (DAMODARAN). Thus, a DCF model provides a framework for deriving the intrinsic value of the company on a forward-looking basis.

Damoradan (2006) suggest that people invest in companies or assets, because they "expect them to generate cash flows" for them in the future. Plus, according to the widely spread saying that "cash is king", investors care about "real" cash flow rather than accounting figures, i.e. earnings per share.

Again, the base of these models is that the value of an asset is directly correlated with the expected cash flows on that asset. Thus, the higher these cash flows are, the greater the asset is worth.

$$V = (CF1/(1+r)) + (CF2/(1+r)^2) + \ldots + [\ (CFn+RVn) / (1+r)^n\ ]$$

$$RVn = [CFn * (1+g)] / (r-g)$$

Where:

- V = Value of the firm
- CFn = Cash flow generated by the firm in period n
- r = Discount rate
- g = Terminal growth rate
- RVn = Residual value of the company in period n

As the formula above suggests, the value of the company is constituted by two components. First, it estimates the cash flows for a "growth period" and second, it estimates a terminal value. This formula is in accordance with Gordon's growth model, a two-stage model that "allows for an initial phase where the growth rate is not a stable growth rate and a subsequent steady state where the growth rate is stable and expected to remain so for the long term" (Damodaran). This formula derives from the fact that is easier to predict accurately the cash flows for "growth period", and that the residual value is perpetuity with a stable growth rate.

Furthermore, there are different ways of deploying DFC's models. Damodaran (2006) stresses four approaches for DCF models: Discount Rate Adjustment Models (FCFF or FCFE); Certainty Equivalent Models (utility models); Excess Return Models (EVA); and Adjusted Present Value Models (APV).

As mentioned before, "virtually every popular valuation approach is no more than a different way of expressing the same underlying model". This means that under the same assumptions, all models should come up with the same value. According to Fernandez, the difference between approaches relies "only in the cash flows taken as the starting point for the valuation".

In the following sections, a greater insight will be given to the most universally used and relevant methods. These methods are the following: the free cash flow to equity (FCFE), the free cash flow to the firm (FCFF), the adjusted present value (APV) and the economic value added (EVA).

FCFE AND DDM

According to Damodaran (2006), one of the methods consists in valuing just the equity part of the company, which is also commonly known as Equity Valuation. In these models, the valuation of equity is given by "discounting the expected cash flows to these investors at a rate of return that is appropriate given the equity risk in the company" (Damodaran, 2006). The author defines the value of equity as a function of free cash flow for the equity, which is defined as:

FCFE = Net Income + Depreciation – CAPEX – Change in Non-Cash Working Capital – (New Debt-Debt Repayments)

Following the basic DFC model and using it for this approach, the value of equity is given by:

$$\textbf{Ve} = (FCFE1/(1+Re))+(FCFE2/(1+Re)^2)+\ldots+((FCFEn+RVn) / (1+r)^n)$$

$$\textbf{RVn} = [FCFEn * (1+g)] / (Re-g)$$

Where:

- FCFEn = Free Cash Flow to Equity in period n
- RVn = Residual Value of the company in year n
- Re = Cost of equity
- g = Growth rate

By discounting the expected cash flows to equity after interest payment and debt cash flows, this model is particularly valuable in "project and trade finance, mergers and acquisitions, buyouts, and joint ventures and alliances" (Leuhrman, What's It Worth? A General Manager's Guide to Valuation, 1997).

Another model that is very commonly used is the **Dividend Discount Model (DDM)**. Here, the value of equity is the present value of future dividends, discounted at the cost of equity rate. According to Damodaran (2006), this model is based on the idea that investors buy company stocks expecting to receive dividends during the period they hold the stock, also getting a positive return from selling those stocks at a price higher than the buying price. Thus, the theory in this methodology implies that the value of a stock corresponds to the present value of future dividends discounted at a rate (cost of equity) and assumes an infinitive life for the public traded firm. The formula for this model is described below

Equity Value per Share = $(DPS1/(1+Re))+(DPS2/(1+Re)^2)+\ldots+((DPSn+RVn) / (1+Re)^n)$

RVn = $[DPSn * (1+g)] / (Re-g)$

Where:

DPSn = Dividend per share in period n
RVn = Residual Value of the company in year n
Re = Cost of equity
g = Growth rate

FCFF

This approach advocates that "the value of a firm can be written as the present value of its after-tax operating cash flows" (Modigliani & Miller, 1958), and "enterprise valuation values the entire business, with both assets in place and growth assets" (Damodaran, 2006). Therefore, the same author explains that the value of the firm equals the present value of the future cash flows to the firm, discounted at the weighted average cost of capital (WACC). Using this rate means that the increase in risk due to debt and tax benefits of debt are taken into account. Other discount rates are suitable for this model, but WACC is the most preferably used one. Hence, the enterprise value (EV) is obtained as follows:

Equity Value = $(FCFF1/(1+WACC))+(FCFF2/(1+WACC)^2)+\ldots+((FCFFn+RVn) / (1+WACC)^n)$

RVn = $[FCFFn * (1+g)] / (WACC-g)$

Where:

FCFFn = Free Cahs Flow to Firm in period n
RVn = Residual Value of the company in year n
WACC = Weighted Average Cost of Capital
g = Growth rate

It is important to define what free cash flow to the firm is. Damodaran (2006) and Fernandez (2007) define free cash flow to the firm as follows:

Operating Income (EBIT)
-Normalized tax on EBIT
=NOPAT (EBIAT)
+ Depreciation and Amortization
=Cash Flows from Operations
-Change in Working Capital
-Capital Expenditures
=Free Cash Flow to the firm

Then, special attention has to be paid to the normalized tax on EBIT. The tax rate used should be the effective company rate, rather than the marginal tax rate. Yet again, according to the previous formula, FCFF is basically achieved by subtracting the change in working capital and capital expenditures to the net operating profit after taxes (NOPAT).

As mentioned before, although WACC is not the only discount rate suitable for this model, it is the most used one. Yet, it is important to define this concept. Being the cost of capital for the firm, it is the minimum rate of return that both shareholders and lenders require. The weighted average cost of capital is the "average of the return required by shareholders (Re) and the after-tax return demanded by creditors (Rd), weighted by the respective portions of equity and debt in the enterprise" (Vernimmem, Quiry, Le Fur, Dallocchio, & Salvi, 2005).

Regarding its definition and formula, there is no consensus. However, the most commonly used formula:

WACC = Re * (E/ (E+D)) + Rd * (1-t) * (D / (D+E))

Then, Fernández (2007) suggests another formula:

WACC = Ru * [1 – (D*t)/E+D)]

And, Haris and Pringle (1985), and Ruback (1995) advocate the following formula:

WACC = Ru * [(D*T*Rd) / (E+D)]

The weighted average cost of capital is a tax-adjusted discount rate that is, by far, the easiest one to calculate. However, "it is suitable only for the simplest and most static of capital structure" (Leuhrman, What's It Worth? A General Manager's Guide to Valuation, 1997).

APV

Undoubtedly, DCF methodologies have proved to be "the best practice for valuing companies" and "accepted as the standard over 20 years", but using the weighted average cost of capital as the discount rate, some argue, "is now obsolete" (Leuhrman, 1997). The same author suggests that the Adjusted Present Value (APV) model is the alternative because it is "especially versatile and reliable, and will replace WACC as the DCF methodology of choice among generalists" (Leuhrman, What's It Worth? A General Manager's Guide to Valuation, 1997). As an advocate of this model, he adds that "APV always works when WACC does, and sometimes when WACC doesn't, because it requires fewer restrictive assumptions" and that "APV is less prone to serious errors than WACC" (Leuhrman, Using APV: A Better Tool for Valuing Operations, 1997). Furthermore, this model allows managers to understand where the value comes from and how much the business is worth.

In this model, instead of capturing the leverage effects in the discount rate, it will first compute the value of the firm as if it had no debt. Then, it will figure the effects of debt and the consequent effects of bankruptcy risk. The value of the company can be expressed as follows (Damodaran, 2006):

+ Value of firm with 100% equity financed
+ Present value of Expected Tax VBenfefits of Debt
- Expected Bankruptcy Costs
= Value of Firm

Assessing the value of the company without leverage is possible just by calculating the present value of the expected free cash flows to the firm, discounted at the unlevered cost of capital rate.

$$\mathbf{Vu} = [FCFF1/(1+Ru)] + [FCFF2/(1+Ru)^2] + \ldots + [(FCFFn+TVn)/(1+Ru)^n$$

$$\mathbf{TVn} = [FCFFn * (1+g)]/(Ru - g)$$

The second stage consists in calculating the present value of the tax benefits of debt. Debt payments are tax-deductible, and therefore, constitute a benefit for the company.

$$\mathbf{VTS} = \text{SUM}\ [\ (t * Int * Dn) / (1+ Rd)\ ]$$

However, there is no consensus on which is the right discount rate. There are different points of view and arguments regarding this controversial component.

Myers (1974), Leuhrman (1997) and Damodaran (2006) agree that the discounted rate should be the cost of debt (Kd), while earlier Miles and Ezzell (1980, 1985) suggest discounting at the cost of debt rate (Rd) in the first year and, thereafter, at the rate of unlevered cost of capital (Ru). However, the double-rate argument is only valid for companies with a permanent debt-to-equity target.

Fernández (2004) argues that VTS should be calculated as the difference between value of levered firm (VL), including tax benefits, and the no-debt value of the same firm. Plus, he reasons that "the value of tax shields should be equal to tax rate times the value of debt". However, this approach "arrives at a much higher value for the tax savings than in the conventional approach" (Damodaran, 2006).

The third and last part of the APV model consists in valuing the negative effects of leveraging, commonly known as the costs of financial distress (COFD). This effect derives from the risk of default as consequence of having debt.

PV of Expected Bankruptcy Costs = Probability of Bankruptcy * PV of Bankruptcy Costs = $\pi\alpha$*BC

However, this formula carries estimation complications, as none of these components are easy to estimate directly. As a consequence, the author suggests two ways to overcome this inconvenience. One is by estimating a bond rating, where a default probability is associated with a certain debt level. The second is looking at the firm's characteristics at each level of debt, and based on this data estimate the probability of default by mean of a statistical approach. Finally, the author's studies state that bankruptcy costs normally range from 10% to 25% of firm value (Damodaran, 2006).

Alternatively, a valuation model isolates excess return cash flows and normal return cash flows. The difference between them is that "earning the risk-adjusted required return(cost of capital or equity) is considered a normal return cash flow but any cash flows above or below this number are categorized as excess returns" (Damodaran, 2006). Therefore, this return can

either be negative or positive. The author suggests that the value of a business with this model is given as follows:

Value of Business = (Capital Invested in Firm Today)+(Present Value of Excess Return Cash Flows From Both Existing and Future Projects)

From a broad number of variations of this model, this literature review is going to focus only on the most used one – Economic Value Added (EVA). This variant is "a measure of the surplus value created by an investment or portfolio of investments" (Damodaran, 2006). This measure is calculated as follows:

Economic Value Added = (Return on Capital Invested – Cost of Capital)* Capital Invested
= After-Tax Operating Income – (Cost of Capital)*(Capital Invested)

The author argues that EVA is "a simple extension of the net present value rule". Therefore, the net present of a business is computed as follows:

NPV = ∑ [EVAt/(1+Kc)^t]

Valuation of Financial Institutions

The valuation of financial institutions is a sensitive task. As it will be described later in this dissertation, Portuguese authorities attributed CTT a bank license and CTT will open a postal bank by the end of year 2015. Therefore, this section will summarise the main methodologies to value financial institutions, highlight its differences from other "normal" businesses and

The valuation of financial services companies – banks, investment banks, insurance companies, securities brokerage, investment firm, is a very complex task. The table below summarises the main characteristics of financial institutions

Financial Institutions

There are four **key differences** between financial services firms and the other firms in the market:

- Operate under strict **regulatory constraints** in terms of how they manage their business and how much capital they need to set aside (ratios) to keep operating;
- **Accounting rules are different** for recording earnings and asset values
- **Debt** is more likely to be considered a raw material, rather than a source of capital;
- **Defining reinvestment** (net capital expenditures and working capital) maybe impossible to compute and so cash flows are difficult to predict too.

The unique characteristics of banks make their valuation a different exercise from valuing other companies, as highlighted by Damodaran (2009).

Given these constraints, commonly used frameworks based on the firm's value, by discounting expected after tax cash flows prior to debt payments at the weighted average cost of capital, are obviously useless for banks as debt and debt payments cannot be easily recognized. Instead, Damodaran (2009) argues the best approach is to discount cash flows to equity at a cost of equity rate. Furthermore, the main value drivers are the cost of equity, which derives from the riskiness of the firms' investments, and the return on equity, which is impacted by both the company's business choices and regulatory restrictions.

DDM Model

Further to the presentation of the DDM model in previous sections, it is important to highlight that the discount rate (Re) reflects the higher risk associated with the equity stake of the business. Also, that the assumptions regarding the expected future growth of earnings and payout ratios (Damodaran 2006) will have a crucial impact on the long term growth date of dividends in the DDM methodology. Also, as Vernimmen (2005) points out, DDM is difficult to put in practice since the growth rate of dividends is the main variant influencing the final value of equity, which is highly dependent on external economic factors.

Flow to Equity Model

Further to the presentation of the FCFE model shown in previous section, this model measures the current value of shareholder's equity by estimating future cash flow to the equity, after

paying back debt obligations and respective expenses, and also by retaining/reinvesting in company's activity the remaining amount sufficient to keep running the business.

On the one hand, it is difficult to identify what belongs to capital expenditures, working capital and debt payments in financial institutions. On the other hand, Damodaran (2009) argues it is possible to predict cash flows but the reinvestment has to be defined in a different way:

FTE (Financial Firms) =Net Income – Reinvestment in Regulatory Capital

The author argues that reinvestment in banks does not translate into form of plant, equipment or other fixed assets, but instead should translate in regulatory capital, in other words, the capital rations required by the regulatory authorities. To estimate the reinvestment part of the equation, one has to take into account two factors: the book equity capital ratio and profitability of the activity (net income).

Additionally, other authors (Koller, Goedhart and Wessels (2005)) suggest that other formulas to calculate the FCFF:

FTE (Financial Firms) =Net Income – Increase in Equity + Other Comprehensive Income

The reasoning behind this theory is that net income is the amount available to equity holders. However, as they claim, it is not considered a cash flow, so the bank will need to raise equity in order to grow and make more loans in the future. And, by increasing equity it means that the institution is not paying out what can afford with the objective of reinforcing ratios. Then, by other comprehensive income they consider noncash items.

Choice of Methodology

In this exercise, the methodology used for valuing CTT's postal bank was the FTE model, rather than DDM. Given the postal bank will only start operations by the end of 2015 and is only expected to breakeven after few years, makes the usage of DDM model hard to apply. On the other side, FTE seems the most appropriate approach given the postal bank's initial stage.

Further Components

Cost of Capital

It was mentioned before, that the cost of capital "represents the minimum necessary rate of return for both shareholders and creditors" (Vernimmen, 2005). It is a function of the cost of equity, the risk-free rate, the betas of the company and the market risk premium. In the following sections, a greater analysis will be presented on these components.

Cost of Equity

The cost of equity is defined as the return that shareholders demand as reward for holding the asset and bearing its risk. There are several ways to estimate this measure, however Capital Asset Pricing Model (CAPM) has been the most used one. Therefore, the cost of equity is a function of the beta of the company and the risk free rate. According to CAPM theory," the expected cost of return of any security equals the risk-free rate plus the security's beta times the market risk premium" (Copeland, Koller, & Murrin, 2000):

$$\mathbf{E\ (Re)} = Rf + \beta e\ (Rm - Rf)$$

Where:

- Rf = Risk-free rate
- Rm = Market Return
- βe = Asset risk
- Rm – Rf = Market Risk Premium

It is possible to state that the expected return of an asset is linearly correlated with the beta of the asset.

Risk-Free Rate

The risk-free rate is the return an investor would expect to obtain when investing in an investment with no risk. In other words, it has to meet two conditions: no default risk and no reinvestment risk. Therefore, theoretically risk-free rate corresponds to the return of a security with a beta of zero. However, this method is complex and costly. As a consequence, the risk-free rate is commonly obtained by comparison with government bonds.

Beta

"Beta represents a stock's incremental risk to a diversified investor, where risk is defined by how much the stock co-varies with the aggregate stock market" (Koller, Goedhart, & Wessels, 2002). Put differently, the beta measures how much the stock and the market change together. As it is impossible to calculate this figure, one has to estimate the beta. Usually, analysts perform regression analysis of the returns of the stock against the stock index. Beta is measures the sensitivity of the security's return to the returns of the market portfolio (Vernimmem, Quiry, Le Fur, Dallocchio, & Salvi, 2005). Accordingly, if β=0, the stock is uncorrelated with the market return, and the market portfolio is known to have a beta equal to 1. Stocks with betas higher than one are considered as more volatile stocks, and companies

with betas below 1 are considered to be less volatile. Generally, beta is obtained with the following formula:

$$\beta e = COV(Rt, Rm) / \delta m$$

Where:

- Rt = Return on asset
- Rm= Return of the market portfolio
- δm = Variance of the market portfolio

Then, in order to reflect the investors' uncertainty about future cash flows, the estimation of Beta should be in terms of future estimations. However, these figures are quite hard to estimate, so normally analysts use proxies. Widely used among the financial analysts, Bloomberg and other sources offer reliable estimates based on historical data. However, as said before, historical data does not reflect what the current and future situation of companies.

Other authors, they agree on using these published estimates and they support the usage of an industry average (Copeland, Koller, & Murrin, 2000). They also suggest that as "measurement errors tend to cancel out, this method is more stable and reliable than using individual company betas".

When using published estimates, one should use the following formula to obtain the unlevered beta:

$$\beta u = \beta l / [1 + (1 - Tt) * (D/E)]$$

Where:

- βu = Unlevered Beta
- Bl = Levered Beta
- t= Nominal tax rate
- D/E= Debt to equity ratio

Market Risk Premium

The market risk premium, as its own name suggests, is given by the difference between the expected market return and the risk-free rate. It seems simple but this concept causes a lot of controversy because "expected future returns are unobservable" (Bruner, Eades, Harris, & Higgins, 1988). Therefore, the main discussion is whether to use geometric or arithmetic mean. The latter "estimates the rates of return by taking a simple average of the single periods rates of return" (Bruner, Eades, Harris, & Higgins, 1988), while the former "is the internal rate of return between a single outlay and one or more future receipts" (Copeland, Koller, & Murrin, 2000). According to its supporters, if the distribution of returns is stable and returns are independent, then arithmetic mean is the best estimator. On the opposite side, geometric defenders argue that its estimator provides a better estimate for long periods of time and that it is not influenced by the measurement period. Fortunately, both groups suggest a risk

premium rate ranging from 5% to 6%. However, common practice is to set the market risk premium between 6 to 8%.

Relative Valuation

As an income statement based valuation method, relative valuation values a company by taking into account how similar companies are priced in the market. Put differently, in relative valuation "we are making a judgment on how much an asset is worth by looking at what the market is paying for similar assets" (Damodaran, 2006).

Damodaran (2002) highlights several reasons for relative valuation's popularity: it can be accomplished with only few assumptions and quicker than DFC models; easier to prepare and present to customers; and reflects the current trend of the market. Furthermore, "if a truly comparable publicly traded firm or transaction were available, if the basis of substitutability could be determined, and if the multiple could be estimated reliably, then the method of multiples could be clearly superior to discounted cash flow analysis" (Baker & Ruback, 1999). Another group of author even state that "a properly executed multiples analysis can make financial forecasts more accurate" (Goedhart, Koller, & Wessels, 2005).

Another author suggests that "multiples are useful in a second stage of valuation" (Fernández, 2001). In other words, relative valuation should be used in order to complement other valuation methods, namely DFC methods which are considered to be the most accurate and flexible methods. Relative valuation enable analysts to "understand mismatches between its performance and that of its competitors" (Goedhart, Koller, & Wessels, 2005).

According to Damodaran (2006), there are three steps in relative valuation. The first consists in finding comparable assets. The second is "scaling the market prices to a common variable to generate standardized prices that are comparable". Finally, the third is to adjust for differences across those assets.

Furthermore, in order to get a better relative valuation, one should bear in mind four principles (Goedhart, Koller, & Wessels, 2005): Use peers with similar prospects for ROIC and growth; use forward-looking multiples; use enterprise-value multiples; and adjust enterprise-value-to-EBITA multiple for non-operating items.

Before going into detail on the most commonly used multiples, it is important to highlight the main drawbacks of relative valuation. Goedhart, Koller and Wessels (2005) point out some of limitations. First, they argue that even companies in the same industry and with same characteristics may not be the best comparable. Secondly, that there is a very wide range of multiples, each one leading to contradictory conclusions. Finally, that each company requires its own multiples. Put differently, depending on the company, a particular multiple might or might not be the most appropriate one.

Peer Group

The peer group is the set of comparable companies that one needs in order to perform a conclusive relative valuation. Therefore, the criteria used to choose these companies are extremely important.

Most of the times it is easy to pick companies from the same industry, but these are not sufficient or may mislead valuation. Some authors advocate that "a comparable firm is one with cash flows, growth potential, and risk similar to the firm being valued" (Damodaran, 2006). Others, as mentioned before, prefer "peers with similar prospects of ROIC and growth" (Goedhart, Koller, & Wessels, 2005). On the other hand, majority of author argue that comparable firms are those other firms in the same business. Damodaran (2006) explains that this leads analysts to a trade-off, where "defining an industry more broadly increases the number of comparable firms, but it also results in a more diverse group of companies".

Market Multiples

The number of multiples is countless. The applicability of a multiple to a company depends on the company itself, the industry and the type of valuation. In order to simplify this literature review, it will only approach those that most regularly used, applicable to this company and those that are going to be used further on CTT's valuation.

Price-Earnings Ratio (PER)

Price-Earnings Ratio (PER), as an equity value multiple, is one of the most used multiples by analysts. It enables analysts to verify the relation between the price of the stock today and its profits. It takes into consideration both the company's risk and the EPS's growth. The main drivers of this multiple are risk, the expected growth and payout. Price-Earnings ratio is calculated as follows:

$$\text{PER} = \frac{\text{Market value per share}}{\text{Earnings per share}}$$

Enterprise Value Multiples – EV/EBIT

Enterprise value multiples return the relationship between the enterprise value and other components such EBIT, EBITDA, sales, book value and so on. The most commonly used ones are EV/EBIT and EV/EBITDA.

Regarding the EV/EBIT, it links the value of the company with the earnings before interest and tax (EBIT). It allows analysts to compare companies regardless of their capital structure.

$$\text{EV/EBITDA} = \frac{\text{Enterprise Value}}{\text{EBIT}}$$

Enterprise Value Multiple – EV/EBITDA

As an enterprise value multiple, EV/EBITDA offers a similar valuation as the previous multiple, but its differences make it more trustful. There are several reasons for this multiple to be preferred. The first is that as this multiple looks at the value of company and its cash flows, it also compares companies with different leverage levels. Secondly, this multiple can be used even for firms that are reporting net losses.

According to Damodaran (2006), the main drivers of this multiple are expected growth, reinvestment rate, risk, return on capital and tax rates. Therefore, it is usually calculated with the following formula:

$$\text{EV/EBITDA} = \frac{\text{Enterprise Value}}{\text{EBITDA}}$$

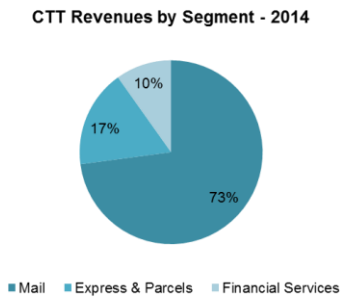
CTT

Company Overview

CTT – Correios de Portugal, S.A. is a Portugal-based company, market leader of Portugal's physical communications market, internationally recognised for its quality of service and innovations.

In summary, the company started its operations in 1520, when the king D. Manuel I ordered the creation of a public mail system. Then in 1969, it was transformed into a public company under the name of Correios e Telecomunicações de Portugal. Later on 1992, the company started to be a joint-stock company entirely owned by the Portuguese state. More recently, in 2013, Portuguese state decided to privatise the company and on December 5th 2013 sold 70% of their holdings with an IPO and in September 2014 concluded the privatisation process by selling the remaining stake in the company to institutional investors. At the end of this process, CTT became the first Portuguese company 100% free-floating.

CTT works in three different business segments: Mail, Express & Parcels, and Financial Services. In the past, there used to be a fourth business segment, Business Solutions, which was merged with Mail segment in 2014. As per the chart below, the Mail segment is the one with the greatest weight on CTT's total revenues.



CTT Figures by the end of 2014	
Post Offices	623
Postal Agencies	1694
PayShop Agencies	3876
Postal Delivery Offices	262
Postal Delivery Routes	2659
Fleet	2478
Number of Employees (FTE)	12523

Source: CTT

The table above summarises some of CTT's figures by the end of 2014 in terms of agencies and staff.

CTT's strategy also comprises running businesses abroad, namely in the Business Solutions (Mail segment) and Express & Parcels segments. CTT is currently operating in Spain, through its subsidiary Tourline Express, already in the top 10 in the Express & Parcels market, with a market share of 5% in 2013, according to a parcels business study performed by DBK Informa. In Mozambique, CTT is present since October 2010 in the Express & Parcels business with CORRE – Correio Expresso de Moçambique, whose capital is 50% held by CTT and the remaining capital share owned by Empresa Nacional de Correios de Moçambique. CTT has the ambition to be the market leader and become one of the main players in the international flows to/out of Mozambique.

In terms of financial data, in the fiscal year of 2014, CTT had c. €718.8m in revenues, from which more than 70% are related to Mail & Business Solutions segment. By deducting the operating costs, CTT remained with an EBITDA of c. €195.6m, which yields an EBITDA margin of 27.2% in 2014. With an EBIT margin of 18.8% in 2014, the company finished the year with an EBIT of 135 million euros and a net profit of 77 million euros. Since the privatisation, CTT has been characterised it dividend, distributing dividends of 40 cents per share in 2013 and 46.5 cents per share in 2014.

For more information on shareholder structure and stock price performance, please refer to appendix A.

As a final remark, it is important to mention that, according to the Portuguese Postal Law, CTT is the exclusive provider of the Universal Postal Obligation (UPO) until 31st December 2020, date when other entities can be chosen to provide these services. This means that, during this period, the transactional mail, editorial mail and certain parcels can only be executed by CTT. However, according to the Portuguese law decree 160/2013, 19th November 2013, if CTT continues to comply with quality requirements as well as pricing decisions, postal density and protection of customers' privacy there is no reason why it would lose its licence. In additional to UPO, it has been granted to CTT the exclusive right to issue stamps bearing the name "Portugal".

Macroeconomic Overview

International

According to International Monetary Fund (IMF[1]), the world economy grew by 3.4% in 2014, 0.1% above the year of 2013. World trade of goods and services grew by 3.5% and 3.4% in 2013 and 2014 respectively. IMF forecasts that the world's economy will growth by 3.5% and 3.8% in 2015 and 2016 respectively.

In the Euro area, economy shrank in 2013 by 0.5% but showed some signs of recovery in 2014, with a shy growth of 0.9%. There were several reasons for this trend, but low growth of investment and exports due to uncertainty regarding the Greek situation may explain part of the negative performance in 2013, whereas in 2014, after a weaker than expected activity in the middle of 2014, Europe showed signs of recovery and activity picked up in the last quarter of 2014, with consumption supported by lower oil prices and higher net exports. According to IMF, Europe is expected to grow by 1.5% and 1.6% in 2015 and 2016 respectively. Additionally, inflation in the euro area was 0.4% and is forecasted to be 0.1% and 1.0% in 2015 and 2016. Regarding unemployment, Euro zone ended the year of 2014 with a rate of 11.6% and IMF expects unemployment to decrease to 11.1% and 10.6% in 2015 and 2016 respectively.

Regarding the interest rates, it is important to highlight that Euribor (Euro Interbank Offered Rate), the average interest rate at which Eurozone banks offer to lend unsecured funds in the interbank market, remained at historically low values in 2014. In second half of 2014, rates decreased and by the end of the year, they were 20 b.p. below the value of the same period in the precedent year.

Additionally, to what concerns to currencies, it is important to highlight that Euro closed 2014 depreciating against the world's main currencies, with the strongest decline of c. 12% relative to the dollar.

Portugal

Portugal is CTT's major source of revenues, as the majority the company's operations take place in Portugal. Therefore, Portuguese economy's outlook plays a key role in CTT's forecasts.

According to the European Commission[2], after three years of contraction, real GDP expanded by 0.9% in 2014, as a result of domestic demand, mainly private consumption. On international side, imports increased more strongly than exports, yielding a negative impact from net exports for the first time since 2010.

Moreover, Indicators such as intensification of car sales and debit/credit card purchases during the first semester of 2015, point in the direction of increasing consumer confidence, hence better prospects in terms of domestic demand.

[1] "World Economic Outlook", April 2015, International Monetary Fund

[2] European Commission – Spring 2015 Forecasts - Portugal

	2013	2014	2015E	2016E	2017E	2018E	2019E	2020E	2021E
World									
GDP	3.3%	3.4%	3.5%	3.8%					
Europe									
GDP	-0.5%	0.9%	1.5%	1.6%					
Inflation		0.4%	0.1%	1.0%					
Unemployment		11.6%	11.1%	10.6%					
Portugal									
GDP	0.6%	2.2%	1.7%	1.9%	1.8%	1.8%	1.8%	1.8%	2.0%
Inflation	0.3%	-0.2%	0.5%	1.2%	1.3%	1.3%	1.3%	1.3%	1.7%
Unemployment	16.2%	13.9%	13.2%	12.6%					
Private Consumption		-2.1%	2.0%	1.6%					
Gross National Savings (% GDP)	15.0%	15.5%	15.9%	15.9%	15.8%	15.8%	16.1%	16.3%	0.0%
Savings (% of Income)	25	27	28	28	29	29	30	31	0
Variation on Savings	0.0%	5.2%	4.7%	1.5%	1.1%	2.1%	3.4%	3.6%	0.0%
Spain									
GDP	-1.2%	1.4%	3.0%	2.4%	2.2%	2.2%	2.2%	2.2%	2.2%
Inflation	1.5%	0.2%	-0.8%	1.0%	1.2%	1.2%	1.2%	1.2%	1.2%
Mozambique									
GDP	7.4%	7.1%	7.4%	7.4%	7.2%	7.3%	7.3%	7.3%	7.3%

Source: IMF, Banco de Portugal, PorData, European Commission, Bloomberg, PWC and World Bank

In 2014, private consumption reversed its negative trend in 2014 (+2.1%) on the back of increased household disposable income levels due to lower oil prices, improvements in the labour market, small recovery in wages and, tough to a lesser extent, to burden-reducing reform of personal income tax. In fact, the European Commission predicts private consumption to accelerate by 2.0% in 2015 and decelerate to 1.6% in 2016.

Portuguese corporate debt levels remain amongst the highest in Europe. However, the expected improvement in access to credit, the recent substantial increase in capacity utilization and recent reforms in the corporate income tax are expected to encourage private investment.

On the one hand, despite having been behind the expectations in 2014, exports are forecasted to significantly increase in 2015 and 2016, by 5-6% and stimulate the Portuguese economy. These forecasts are based on the back of positive growth prospects for the other major economies that Portugal trades with, the weakening of the euro and prospects of sustained low oil price levels. On the other hand, imports are forecasted to decelerate in 2015 and accelerate again in 2016. This deceleration is mostly explained by destocking, whereas momentum in 2016 by strong domestic demand. In summary, Portugal's external demand is expect to have a positive impact in 2015's and 2016's GDP growth rates.

As a matter of fact, the European Commission forecast Portugal's GDP growth rates of 1.6% and 1.8% in 2015 and 20016 respectively. More optimistically, the Bank of Portugal expects the Portuguese economy to grow 1.7%, 1.9% and 2.0% in 2015, 2016 and 2017 respectively.

On the subject of unemployment, recent figures on job creation in Portugal have been relatively strong, with unemployment rate decreasing from 16.2% in 2013 to 13.9% in 2014[3]. These results were due to strong implementation of active labour market policies and labour market reforms undertaken in the past. European Commission expects these effects to level

[3] INE/PORDATA on 22/07/2015

off over the next years, therefore predicts unemployment rates would optimistically decline to 13.4% and 12.6% in 2015 and 2016 for Portugal. However, the latest figures reveal an unemployment rate of 12.4% in June 2015[4].

According to the Bank of Portugal[5], the harmonised index of consumer prices (HICP) was -0.2% at the end of 2014. The same entity expects an average price growth of 0.5% in 2015, followed by increases slightly over the 1% per annum over the next two years.

[4] INE – Estimat

[5] "Projections for the Portuguese Economy: 2015-2017", Banco de Portugal

Postal Sector

In CTT's management reports, there are clearly five sector trends highlighted by the management of the company. The figure below summarises the current trends in the postal sector, which not only will affect the company's performance in the future, but are also present in other country's postal services.

1.Postal Liberalisation: CTT has been operating in all its segments in competitive markets since 2012. This competition demands increasing optimisation in all the segments to differentiate from competitors and obtain higher margins.

2.Technological Replacement (or E-Substitution): Traditional mail business continues in constant change, with technological improvements providing alternatives to traditional mail with lower costs attached. Hence, traditional mail volumes have been decreasing every year and this trend is expected to continue in the future.

3.E-Commerce: the speedy growth and prospects of E-commerce worldwide opens a broad range of opportunities for postal and parcels operators, from logistics to customer services.

4.Economic Context: postal services are highly dependent on country's economy. As Portugal and Spain, where CTT operates, continue to experience challenging macroeconomic contexts, which imposes demanding conditions on different businesses, with constrained internal consumption having a significant impact on mail volumes.

5.Privatisation in the sector: In the recent years, there has been a tendency in Europe towards privatisation in the postal sector, which stimulates competition and differentiation among European postal operators, and a clear separation between public and universal service obligations, as well as capital holders, is extremely important.

In the following section, a description of the postal sector in Europe will be provided, as well as some figures, recent trends and sector outlook. An exhaustive depicture of the Portuguese postal service will also be provided.

Europe

According to the International Postal Conference "POSTINFO 2014", there are 52 European public postal operators, with a retail services spread across c. 175 thousand counters that link more than 800 million people daily and employ 2.1 million people, and other providers of postal services are also an important source of employment.

The EU postal sector accounts for €91 billion or 0.72% of EU GDP (letter post alone accounts for €44 billion or 0.34% of GDP, and the number of letters was 82 billion). [6]

To what e-commerce is concerned, the European Commission also estimates than 6.4 billion items were shipped in 2011. The Parcel sector is dynamically growing in terms of volume and plays an important role in the development of e-commerce.

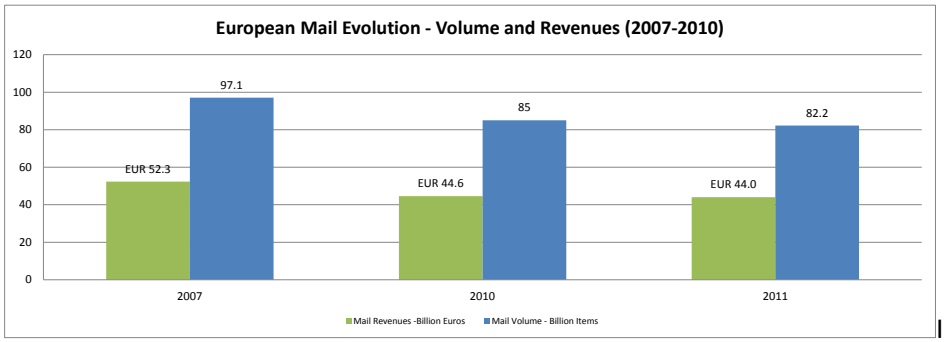
With the liberalisation in the postal services (started in 1997), the possibility of new entrants and fierce competition obviously increases. However, given the high asset intensity due to the

[6] http://ec.europa.eu/growth/sectors/postal-services/index_en.htm

importance of the business' operating network, constitutes a clear barrier to entry. Hence, it is expected that the current companies operating in the sector will remain the dominant players in their respective markets.

As previously mentioned, e-substitution is one of the main challenges for the sector. Technology improvements offer new solutions that lead to the declining of mail volumes. The trend has been worsened over the last years, along with the slowdown of the European economies. Economic activity has been the main driver of mail demand in the past.

The main impact of these trends are verified by the rate at which mail volumes have been decreasing over the last years, as depicted by the figure below.



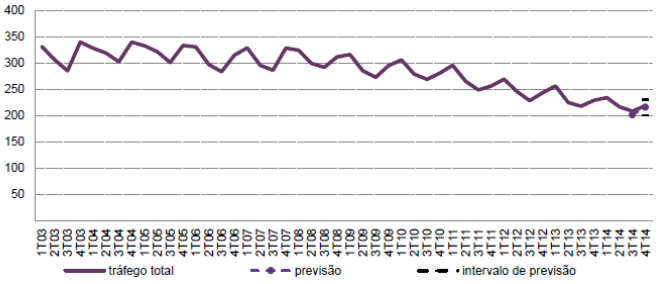
In 2011, data suggested that the Western countries still have the highest letter post volume per capita, with 252 items per capita. Southern and Eastern countries were still quite below, with 83 and 50 items per capita respectively. In the European Union (EU-28) the average was 163 items per capital in 2011[7].

In terms of country allocation, the largest letter post markets in terms of absolute revenue and volume in 2011 was Germany, followed by UK and France.

[7] *Main Developments in the Postal Service (2010 – 2013)* – WIK Consult

Portugal

Portugal is no exception and has been facing the same challenges as their fellow countries described in the previous section. Hence mail volume, as consequence of E-substitution, has had severe declines in the over the last years. The chart on the right shows the quarterly evolution of total mail volume in Portugal[8] (ANACOM).



Fonte: ICP-ANACOM Unidade: Milhões de objetos

Nota: Intervalo de previsão com um nível de significância de 95 por cento. Recorreu-se ao modelo de regressão linear com tendência quadrática (Y = 324.359 – 50,0 t^2) tendo-se considerado os seguintes índices de sazonalidade de acordo com o modelo multiplicativo: T1= 1,06; T2= 0,98; T3= 0,94; T4= 1,03. O R^2 ajustado do modelo é 0,96.

According to ANACOM, in the fourth quarter of 2014, mail volume was 219 million items, and increase of 5.1% compared to Q3 2014, hence a decreased of 4.4% compared to Q4 2013. The total volume of items in 2014 was 877 million items, which represents a decrease of 22.8% compared to 2010.

In terms of items per capita, ANACOM's latest estimate was 20.9 postal items per capita. Moreover, 85% of this traffic was encompassed within the universal service and 50.2% was bulk mail. In addition, 96.1% of the distributed items had a final destination within Portugal boundaries, while the remaining was dispatched to other countries. ANACOM estimates the sector generated revenues of 185 million euros in the fourth quarter of 2014.

Even though CTT's market share has been slightly decreasing over the years, CTT still registered a market share of 94.4% of total postal traffic at the end of 2014.

Market Share by Provider	Q4 2014
Grupo CTT	94.4%
CTT	91.6%
CTT Expresso	1.7%
Postcontacto	1.1%
Chronopost	1.1%
Noticias Direct	0.8%
Vasp Premium	0.7%
General Logistics Systems	0.3%
Iberomail	0.3%
Urbanos	0.3%
DHL	0.3%
Grupo Seur	0.3%
Grupo Adicional	0.3%
S.D.I.M	0.2%
Best Direct	0.2%
Grupo Nacex	0.2%
TNT Express	0.2%
Other Providers	0.4%

source: ANACOM

In Portugal, the postal sector started in 1520, in fact when CTT was established. In fact, by the end of 2014, the sector employed almost 14 thousand people and the number of postal offices per 100km2 increased from 13.8 in 2013 to 14.3 in 2014. This inversion of the trend in number of postal offices over the last year results from the increase in the number of offices from CTT.

The postal sector is under a strong regulatory framework, as it is subject to regulations at an international, European and country levels. For more information on the regulatory framework, please refer to Appendix B.

[8] Postal Services Statistical Information 4th Quarter 2014 - ANACOM

CTT – Segments Description and Performance

CTT achieved consolidated revenues of 719 million euros in 2014, up from 705 million euros in 2013. Operating costs decreased by 60 million to 523 million euros in 2014 relative to the previous year, which in turn yielded an EBITDA of 196 million euros in 2014, which means an EBITDA margin of 27.2%. In 2013, CTT had an EBITDA of 122 million euros with a margin of 17.3%. After the depreciation and amortisations, CTT achieved an EBIT of 87 and 135 million euros in 2013 and 2014 respectively, which represent an outstanding EBIT margin of 18.8% in 2014. In turn, earnings before taxes increased from 83 million euros in 2013 to 128 million euros in 2014. In the full year of 2014, CTT achieved a consolidated net profit attributable to shareholders of 77 million euros, 26.5% above that of the previous year, which corresponded to consolidated earnings per share of 0.51 euros, a net margin of 10.8% (8.7% in the 2013) and return on equity of 29.4%, against 22.2% in 2013.

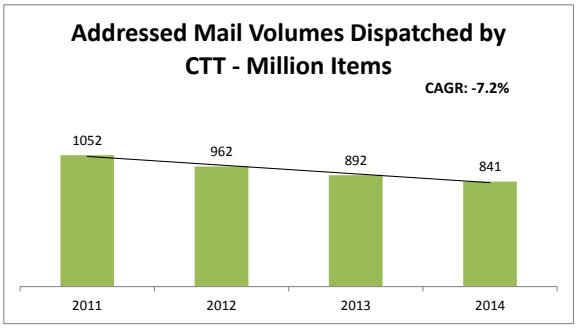
Mail & Business Solutions

The Mail & Business Solutions segment includes the postal services and corporate solutions provided by CTT, S.A. (parent company), PostContacto, CTT Gest and Mailtec, upstream and downstream services of mail.

Not only Mail has been the primordial activity of the company, but has also been the main source of revenues for CTT. Besides the different types of mail services offered by CTT, this segment also includes the other products, such as parcels up to 20 kg, retail network (books, notebooks, phone-ix, lotteries and other merchandising) and philately products.

As CTT is the exclusive provider of UPO (Universal Postal Obligation), it is vital to understand what products are under the UPO. From all the products mentioned earlier, only the transactional and editorial mail and parcels up to 10kg fall within the UPO scope and regulatory framework.

Also, as mentioned in the previous sections, mail business has been facing several challenges. In fact, the e-substitution and the Portuguese economic recession have had a negative impact on the mail and business solutions segment. Over the last years, the number of mail objects operated by CTT has decreased significantly, at a compounded annual rate of 7.2%.



According to ICP – ANACOM, CTT has been the market leader in the Mail segment, accounting with 94.4% of market share by the end of 2014.

Regarding the Business Solutions part of this segment, CTT targets mainly corporate clients and focuses on hybrid communication solutions, developing offers that combine physical with digital communications. Few examples are document production (through Mailtec Comunicação, a market leader), digitalisation and information technologies for the postal sector (through Mailtec Consultoria), geographic and geo-referencing solutions, and solution of secure e-mail with controlled access (ViaCTT).

Market Share by Provider	Q4 2014
Grupo CTT	94.4%
CTT	91.6%
CTT Expresso	1.7%
Postcontacto	1.1%
Chronopost	1.1%
Noticias Direct	0.8%
Vasp Premium	0.7%
General Logistics Systems	0.3%
Iberomail	0.3%
Urbanos	0.3%
DHL	0.3%
Grupo Seur	0.3%
Grupo Adicional	0.3%
S.D.I.M	0.2%
Best Direct	0.2%
Grupo Nacex	0.2%
TNT Express	0.2%
Other Providers	0.4%

source: ANACOM

CTT standardised value added solutions which meet the market needs in the context of processes of treatment of returned mail, treatment of registered mail and treatment of accounting documents. Few examples of CTT achievements are the contracts celebrated between CTT and local government institutions, water companies and insurance companies.

Then, to what philately is concerned, CTT has the exclusive right to issue stamps with the name "Portugal". In 2014, CTT inverted the declining trend in this business. In 2014, it has achieved 7.3 million euros of revenues, which corresponds to an increase of 6.7% in relation to 2013. According to CTT, this reversal in the negative trend of the previous years was due to an expansion of the offer, adapted to the demand. Also, the partnerships with Sport Lisboa e Benfica and the Manufacturing of Portalegre Tapestries contributed positively too.

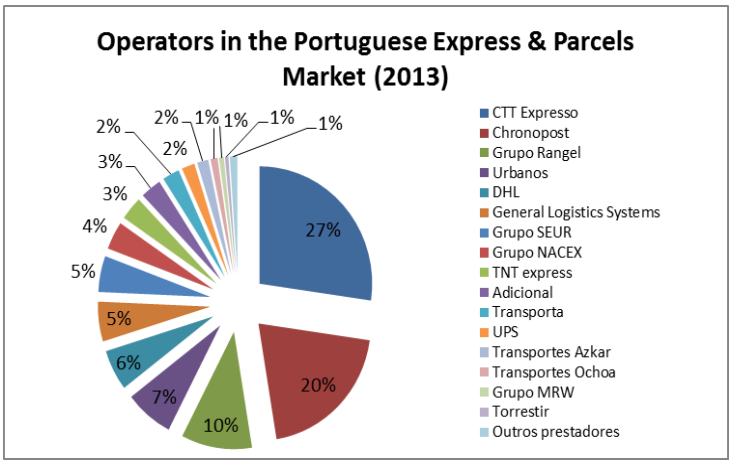
In terms of revenues, Mail & Business Solutions unit was responsible for €546.2m in 2014, c. 73% of the total consolidated revenues[9], up by 0.03% from the previous year. Total operating costs for the Mail segment reached 454.5 million euros in 2014, a decrease of 4.6 million euros relative to the previous year. This resulted in an EBITDA of 92 million euros in 2014, an increase of 5.5% relative to 2013.

Finally, it is important to reinforce the importance and impact of the economy and e-substitution effects on this segment's performance. On the one hand, mail volumes are expected to follow the same trend as the economy and therefore follow the GDPs of the countries CTT operates at. On the other hand, the mail volume and hence the mail segment, is inversely correlated to the phenomenon known as e-substitution.

[9] Including internal services and intra-group transactions which are eliminated for the purpose of consolidation. Source: Company data.

Express & Parcels

This business segment includes the operations of CTT Expresso in Portugal, Tourline Express in Spain and CORRE in Mozambique, and includes not only the parcels above 10kg, but is also responsible for special and/or urgent mail deliveries.



Similarly to the Mail segment, CTT Expresso is also market leader, with 27.7% market share in 2013, well ahead of its competitors. Nonetheless, CTT faces a stronger competitive landscape, mainly from Chronopost (20% market share)[10]. However, CTT has been able to differentiate from its competitors, by introducing new solutions for their customers such as "Surf Expresso", which is an exclusive service that allow customers to transport surfboards, including packaging and delivery on the next working day.

According to the Ecommerce Europe association, in 2013, 7 million out of 10.4 million Portuguese inhabitants use the internet and 2.7 million were e-shoppers, with an average spending per e-shopper of 954 euros. E-commerce turnover of goods and services reached 2.6 billion euros.

In the Spanish market place, CTT is positioned in the top 10 in the Express & Parcels market, with Tourline Express representing a market share of 5% in 2013[11].

Spain - Tourline Express Figures by the end of 2014	
Franchisees	169
Own Branches	26
Distributors	16
Total Sales Points	211
Pick-UP/Drop-Off points	46

Source: CTT.

Operationally, CTT sees Portugal and Spain as a single market, hence a lot of effort has been put into place to homogenise the products and services offered by both companies (CTT Expresso and Tourline Express). CTT has been implementing several changes, for example by strengthening the franchisee network with a clear objective of increasing the capillarity of Tourline Express in Spain.

One of CTT's strategic axes, of which a better description will be provided in the section ahead, is to foster the growth of the Express & Parcels business by making the most of e-commerce and explore the opportunities in the business in Portugal in Spain. In fact, it is the company's objective to offer customers the same delivery solutions in Portugal and Spain and provide an integrated, simplified, competitive portfolio of services for the whole peninsula. Hence, customers would see the Iberian Peninsula as a single territory, with wider coverage and the

[10] Sector das Comunicações 2013 – ANACOM

[11] DBK Informa.

same service level, guaranteed delivery on the following working day by mid-morning, lunchtime and close of business, and for less urgent items within two business days.

Nonetheless, regardless of the current commercial and operational activity in Spain, since 2013 the plan has been to restructure the activity and franchisee network of Tourline Express, to achieve tighter control over the network and higher quality of the franchisees, both in terms of commercial capacity and in terms of financial strength and management skills. Some franchisees have already left Tourline Express, either because they did not agree with the new operational rules or by deliberate decision of the Master franchise not to perpetuate situations of outstanding debts. Hence, the number of own branches have been increasing, not only due to the desire to have direct presence in Spain but also to overcome the franchisees that have left the network.

In addition to Portugal and Spain, CTT is also present in Mozambique in the Express & Parcels business since 2010, with CORRE – Correio Expresso de Moçambique – whose capital is 50% held by CTT and 50% owned by Empresa Nacional de Correios de Moçambique. The company's quality of service has been winning the confidence of the customers, and CORRE has become the unique supplier to the biggest commercial bank in Mozambique, for logistics, sorting and delivery to all its branches. The company aims to achieve leadership of the domestic E&P market and become one of the most important players in the international in/out flows from Mozambique. In fact, the company maintains a close relationship with South Africa Post Office (SAPO), in order to use Johannesburg as a transport hub, allowing international routes to be maintained with the various countries which have connections to this hub, as well as with CTT Portugal which handles transit operations with European countries[12].

Alone, the E&P segment generated revenues of 129 million euros in 2014 (16% of consolidated revenues), flat comparing with the 130 million euros of revenues generated in 2013. With total operating costs of approximately 123 million euros in 2014, marginally above those of 2013 (121 million euros), this business segment achieved an EBITDA of 6 million euros in 2014, 3 million euros below that of the previous year.

As a final remark, it is extremely important to highlight and reinforce the link between the Express & Parcels business performance with the evolution of e-commerce. In fact, e-commerce is the main driver for this business segment. Hence, and more importantly, E&P business is expected to grow at the same pace of e-commerce. Fortunately for CTT, the outlook for e-commerce is extremely optimistic. Further details of the outlook for e-commerce and therefore for E&P business will be provided in the valuation section.

[12] CTT Annual Report 2014

Financial Services

Regarding the Financial Services segment, CTT offers a diversified range of products/services: from savings and insurance solutions, to money orders, transfers and payments via CTT and, more recently, personal credit in partnership with Cetelem (BNP Paribas). This partnership reinforced CTT's willingness to diversify its range of financial products, taking advantage of its strong brand and leveraging on its wide presence in the Portuguese territory.

To provide these products, CTT almost always calls on partnerships with providers from the financial and insurance sector, such as BNP Paribas, Caixa Geral de Depósitos (CGD), Mapfre, Fidelidade and Western Union.

Regarding the Savings and Insurance area, a record of 5.5 billion euros in savings was captured in 2014 and CTT almost duplicated the amount of negotiated in the savings and insurance to 6.6 billion euros in 2014, significantly above the 3.6 billion euros negotiated in 2013. This area is highly dependent on the contribution from the public debt certificates.

In terms of Money Orders and Transfers, this area was reinforced in July 2014 with an agreement with the Social Security and revision of the agreement with Western Union. These agreements are expected to inverse the negative trend resulting from the reduction of the national money orders and international flows.

In to what Payments is concerned, it is important to highlight the PayShop network, that have been growing in terms of operations processed and in terms of revenues generated, as well as tolls and Social Security contributions. However, these improvements have been offset by the declining trend in the mobile top-ups. This trend results from the structural change in the mobile phone market in Portugal, in which pre-paid mobile packages have reached record lows.

Last but not the least, in 2014 CTT launched a product in the Consumer Credit area that has already started to generate revenues in line with the objectives. CTT expects this product segment to be one of those that will benefit the most from cross-selling that the Postal Bank could bring to the current offering of CTT's Financial Services.

Speaking of which, the Postal Bank is the greatest project going on in CTT. It all started in 2013 when the company requested to and the concession of the Bank of Portugal of a licence for the creation of the Postal Bank. This license was granted and on 4 November 2014, CTT's Board of Directors approved the launch of the Postal Bank, in line with the established strategy to expand the Financial Services product offer. In the meantime, the Bank of Portugal authorised a 12-month extension of the deadline (17/11/2015) for the Postal Bank to initiate its activity.

The latest information on this subject, suggest that CTT will target average-income and more conservative customers, and will leverage on CTT's wide retail network, brand awareness and available capacity and experience in a broad range of financial services. Indeed, CTT wants to combine the existent network (including branches, online and mobile services), with the current workforce that already has experience in providing financial services, to target the

clients with a similar profile with whom already has acquired other financial products offered by CTT.

Moreover, CTT expects the Postal Bank to start its operations in the fourth quarter of 2015 (before the extended deadline). As such, CTT has already 120 people involved daily in this project, most of them being specialised international consultants, but already deployed 22 people of CTT staff as result of ongoing selective recruitment process. More information on the subject of the Postal Bank will be provided in the valuation section ahead.

In summary, the Financial Services segment accounted for 8% and 10% of total revenues in 2013 and 2014 respectively, which in absolute terms correspond to 61 and 74 million euros respectively. These revenues result mostly from the fees paid the services rendered, with Savings and Insurance playing an important role too. With total operating costs summing up to 37 million euros in 2014, marginally above the 33 million euros in 2013, which led to a recurring EBITDA of 37 and 27 million euros in 2014 and 2013 respectively.

CTT Strategic Lines

In the previous sections, it was mentioned that the postal sector, and hence CTT, faces several challenges. The legislation that came into force in 2012, redefined all the segments where CTT operates as competitive markets, where it is increasingly necessary to ensure optimisation. Further to that, technological improvement constantly brings new forms of communication that is slowly replacing the traditional mail. Additionally, the economic context, in particular the challenging macroeconomic contexts that Portugal and Spain are going through, imposes demanding conditions on the different businesses, with depressed internal consumption having a significant impact on mail volumes. On the other hand, the rapid growth of e-commerce worldwide opens a broad range of opportunities for postal and parcel operators, including CTT, from logistics to customer service. Finally, the privatisation in the sector accelerates the necessity of differentiation among postal providers and a clear separation of public/universal service obligations and public / private holders of capital, demanding for new sector governance.

According to CTT's Annual Report (2014), and having in mind the trends previously described, CTT's management defined the following strategic pillars for the next years.

1. **Preserve Value in the Mail Business.**

   CTT aims the consolidation of continuous efficient initiatives, for example, integration of an Iberian network, that already have shown significant results. Continue to be involved in the promotion of a fair regulatory framework, regarding competition of other forms of communication and logistics, as well as the evolution of prices in order to face the declining trend of mail volumes. An innovation agenda for exploring new offers combining digital with physical mail, for corporates and individuals, was also put in place.

2. **Foster the growth of the Express & Parcels business, making the most of the E-commerce potential.**

   CTT aims to continuously explore opportunities for significant improvement in this business in the Iberian market, via optimisation of operations, improved offer, strengthening of capacities and commercial orientation. Nonetheless, all the efforts should be put into the growth of e-commerce. CTT is in a unique position to outperform in this market. Furthermore, functional and operational changes are crucial. Functionally, CTT already created a department dedicated to E-commerce only. On the operational side, the integration of Mail and Express & Parcels networks in Portugal will accelerate the creation of focused offers in the short-term and is expected to consolidate all the potential of CTT in long run.

3. **Expand the financial services business.**

   The year of 2014 enabled the consolidation of CTT's market position as a relevant financial player with significant attraction of new customers for saving products and with the automation and simplification of sale and contracting processes. Additionally,

the partnership with BNP Paribas for the sale of personal consumer credit at CTT post offices and on its website also falls into this axis, later migrating to the Postal Bank. The approval of the decision to proceed with the Postal Bank project in November consolidated CTT's strong focus on this area. The intention to expand the financial services offer will be an important and transformational challenge for CTT. The launch of Postal Bank is expected to happen by the end of 2015 with set-up initiatives in several fronts.

Valuation

Methodology

In order to value CTT, it will be applied a sum-of-the-parts (SOTP) valuation approach, by applying a discounted cash flow (FFCF) method to the core business of the company – Mail & Business Solution, Express & Parcels and Financial Services excluding the Postal Bank – and a flow to equity (FTE) approach to the Postal Bank.

Additionally, a relative valuation based on forward-looking multiples will also be presented, as well as a sensitive analysis.

Over the following sections, detailed information regarding the assumptions used for each business segment, computation of the WACC, the CTT (excluding the Postal Bank) and the Postal Bank valuation.

General Assumptions

In this valuation, it has been assumed that ANACOM would consent CTT to carry on as the **exclusive USO's provider**. The reasoning for this assumption lies with the fact that according to the Portuguese legislation, if CTT complies with the requirements regarding pricing, quality of service and postal density levels, there is no reason why the company would lose its license. Besides, statistics show that other players are already operating within the USO scope, though only at the express and parcels field, mainly in the postal parcels (see table below). Thus, one can easily understand that the express and parcels segment is more attractive than mail, since it does not face the e-substitution threat and even benefits from the ecommerce boom. Therefore, this valuation assumes that new entrants may want to enter the express and parcels business segment, but **expects no new entrants into the mail segment**.

It was assumed that **financial debt** will keep the same level as 2014, representing as little as 0.3% of its asset value as at 31 December 2014. This assumption is possible as CTT presentations show no evidence for leveraging plans.

Additionally, even though CTT clearly manifested its intentions to have its **Postal Bank** starting its operations before the end of 2015, for this valuation exercise it was assumed that the Postal Bank will only start in 2016.

CTT started its Transformation Programme in 2013 to tackle several issues within the company and more importantly to reduce costs and improve its efficiency. For this valuation, we have assumed that in year of operating costs across all segments would follow the same trend they followed in the first half of 2015, as described below:

Operating Costs Savings/Increases in 2015	
External Supplies and Services	-5.1%
Personnel Expenses	4.9%
Other Expenses	2.2%
CTT's Central Structure Allocation	-0.3%

In general, still related with the previous point, it was assumed that savings/increases in the operating costs in 2015 would be in line with the latest figures released by the company (1st Semester 2015). But more details will be provided in the following sections.

The table below shows the forecasted income statement for CTT, excluding the Postal Bank. In the following sections, more details on revenues and operating expenses by segment will be provided.

CTT	Fiscal Year Ending Dec. 31								
Consolidated Income Statement - EUR m	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**	**2020E**	**2021E**
Operating Revenues	**705**	**718**	**750**	**742**	**734**	**725**	**718**	**724**	**730**
Operating Expenses (excluding impairments, provisions, depreciations and non-recurring expenses	-582	-583	-619	-611	-604	-597	-591	-596	-602
EBITDA	**123**	**135**	**131**	**131**	**129**	**128**	**127**	**128**	**128**
Impairment of Inventories and Accounts Receivables (Losses/Reversals)	-2	-1	-2	-2	-2	-2	-2	-2	-2
Provisions (Increases/Decreases)	0	-1	0	0	0	0	0	0	0
Net Provisions	0	0	0	0	0	0	0	0	0
Impairments of Non-Depreciatable Assets	0	0	0	0	0	0	0	0	0
Depreciation/Amortisation and Investment Impairments (Losses/Reversals	-25	-22	-25	-25	-25	-25	-25	-25	-25
EBIT	**96**	**112**	**105**	**104**	**103**	**102**	**101**	**101**	**102**
Corporate Restructuring (Expenses)	4	37	0	0	0	0	0	0	0
Privatisation Expenses	-4	-3	0	0	0	0	0	0	0
Other Income and Non-Recurring Expenses	-8	-10	-13	-13	-13	-13	-13	-13	-13
Net Financial Income	-4	-7	-3	-3	-3	-3	-3	-3	-3
Gains / Losses in Associated	0	0	0	0	0	0	0	0	0
EBT	**83**	**128**	**89**	**89**	**87**	**86**	**85**	**86**	**86**
Income Tax	-22	-51	-28	-28	-28	-27	-27	-27	-27
Effective Tax Rate	*27%*	*40%*	*32%*	*32%*	*32%*	*32%*	*32%*	*32%*	*32%*
Loss (Income) Attributable to Non-Controlling Interests	0	0	0	0	0	0	0	0	0
NET INCOME	**61**	**76**	**61**	**60**	**60**	**59**	**58**	**59**	**59**

Forecasts

Mail and Business Solutions Segment

Mail has been the core business of CTT and is still stands as the segment that weights the most in the company's revenues. As described in previous sections, the mail segment's key challenge is the declining trend in mail volumes mainly due to e-substitution. In fact, mail volumes have been decreasing across Europe and Portugal has been no exception. Companies and individuals have been replacing the traditional physical mail by other electronic solutions.

In order to forecast the rate at which mail volumes will decline, it was assumed that mail volumes growth rate will be inversely proportional to rate at which email accounts are forecasted to grow. Therefore, according to The Radicati Group, Inc., email accounts are likely to increase between 5% and 6% a year over coming years, up to 2017. Inversely, mail volumes are therefore expected to decline at rates of 5-6% p.a. until 2017. This trend is expected to slow down from 2017 onwards, with email accounts expected to increase at rate of 3.5% and mail volume to decrease at the same pace. The table below illustrates the projections for the mail volumes for CTT.

Items Projection (Volume in Millions)		2013	2014	2015E	2016E	2017E	2018E	2019E	2020E	2021E
Addressed Mail		892	841	793	743	696	650	607	585	565
	YoY %	*-7.3%*	*-5.7%*	*-5.8%*	*-6.3%*	*-6.4%*	*-6.6%*	*-6.7%*	*-3.5%*	*-3.5%*
Transaction Mail		757	718	677	634	594	555	518	500	482
	YoY %	*-6.6%*	*-5.1%*	*-5.8%*	*-6.3%*	*-6.4%*	*-6.6%*	*-6.7%*	*-3.5%*	*-3.5%*
Editorial Mail		49	48	45	42	39	37	34	33	32
	YoY %	*-3.3%*	*-3.4%*	*-5.8%*	*-6.3%*	*-6.4%*	*-6.6%*	*-6.7%*	*-3.5%*	*-3.5%*
Advertising Mail		87	76	71	67	63	59	55	53	51
	YoY %	*-15.0%*	*-12.5%*	*-5.8%*	*-6.3%*	*-6.4%*	*-6.6%*	*-6.7%*	*-3.5%*	*-3.5%*
Unaddressed Mail		529	508	502	496	491	485	480	475	469
	YoY %	*1.7%*	*-4.0%*	*-1.1%*	*-1.1%*	*-1.1%*	*-1.1%*	*-1.1%*	*-1.1%*	*-1.1%*

Source: Analyst estimates

The declining trend in mail volumes has a powerful impact in this segment's revenues. Conversely, price will play an extremely important role in avoiding mail revenues to deteriorate over time. Over the last times, price rises have been the key to avoid revenues to decrease as much as mail volumes and allowed the company to keep revenues at the approximately same level.

As mentioned earlier in previous sections, CTT is the exclusive provider of products under the UPO scope, which in turn follow ANACOM's pricing rules, which allows for price increases indexed to inflation and mail volumes rate of decline. Additionally, according to CTT, the average price increase for 2015 is going to be of c. 4%. As such, prices for mail segment were assumed to increase on average by 4% in 2015 and follow the inflation plus 0.8%[13] rule thereafter.

Then regarding the operating costs, as per the table shown below, it was calculated the average of the weight of each operating cost line on segment revenues in 2013 and 2014, and used this average to estimate the costs as percentage of revenues. In addition to this assumption, it was also assumed some cost savings/increases in 2015 would be in line with

[13] "Decisão Sobre os Critérios de Fixação dos Preços do Serviço Postal Universal" - ANACOM

those presented in 1H2015 report, as consequence of the ongoing Transformation Programme. From 2016 onwards, operating costs were estimated as a percentage of revenues in 2015.

Operating Expenses Projections	% of Revenues (average 2013/4)	Cost Savings in 2015	2015E	% of Revenues for 2016 onwards	2016E	2017E	1018E	2019E	2020E	20121E
External Supplies and Services	20.5%	-5.1%	-105	19.5%	-101	-98	-95	-92	-91	-91
Personnel Expenses	45.8%	4.9%	-258	48.1%	-250	-242	-234	-226	-224	-223
Other expenses	17.4%	2.2%	-95	17.8%	-92	-89	-86	-84	-83	-83
CTT's Central Structure Allocation	4.1%	-0.3%	-22	4.1%	-21	-21	-20	-19	-19	-19
Internal Services	0.0%	0.0%	0	0.0%	0	0	0	0	0	0
Central Structure Allocation	17.6%		-94	17.6%	-91	-88	-86	-83	-82	-82
Intergroup Eliminations	-22.6%		121	-22.6%	117	114	110	106	105	105
Total operating expenses	**82.8%**		**-453**	**84.4%**	**-439**	**-425**	**-411**	**-397**	**-394**	**-392**
EBITDA			**84**		**81**	**79**	**76**	**73**	**73**	**73**

As a result, the EBITDA for the Mail & B. Solutions segment will follow a decreasing trend, though not as steep as the decreasing trend of mail volumes. The effect of the rapid decrease in the mail volumes is partially offset by the regulated increases in prices and by the cost saving measures taken by CTT.

Express & Parcels Segment

As described in previous sections, this segment comprises the operations in Portugal, Spain and Mozambique, three different economies and therefore different competitive landscapes. More precisely, operations are run through CTT Expresso in Portugal, Tourline Express in Spain and CORRE in Mozambique. The Iberian markets, highly competitive environment that represent the majority of revenues in this segment, are on the one hand mature markets still recovering from 2008 financial crises and on the other hand have been benefiting from the booming in e-commerce in Europe. Then, Mozambique, an emerging market, is characterised by growth prospects above those of European countries and little competition so far.

The prospects for the activity of CTT Expresso and Tourline Express are highly dependent on the evolution and penetration of e-commerce in Europe, more specifically in Portugal and Spain. In fact, in 2015 e-commerce is expected to grow by 21% in Portugal and 13.8% in Spain, whereas longer term forecasts for Europe predict growth rates of 15%[14]. For Mozambique, it was assumed that operations in this segment will go side-by-side as to Mozambique's economy and therefore will follow the growth rates of its gross domestic product (GDP).This forecasts are resumed in the following table.

	2014	2015E	2016E	2017E	2018E	2019E	2020E	2021E
Portugal								
GDP Growth	2.2%	1.7%	1.9%	1.8%	1.8%	1.8%	1.8%	2.0%
Ecommerce Growth	13.3%	21.0%						
Spain								
GDP Growth	1.4%	3.0%	2.4%	2.2%	2.2%	2.2%	2.2%	2.2%
Ecommerce Growth	13.8%	13.8%						
Mozambique								
GDP Growth	7.1%	7.4%	7.4%	7.2%	7.3%	7.3%	7.3%	7.3%

Source: Banco de Portugal, European Commission, PWC, World Bank and Ecommerce Europe Association.

As a result, the revenues for the Express & Parcels segment is expect to grow as follows:

Revenues Projection	2014	2015E	2016E	2017E	2018E	2019E	2020E	2021E
Portugal - CTT Expresso	77	82	87	92	97	103	109	115
Spain - Tourline Express	50	52	53	54	55	56	58	59
Mozambique - CORRE	2	0	0	0	0	0	0	0
CTT's Central Structure Allocation	11	11	11	12	12	13	14	14
Intergroup Eliminations	-15	-13	-14	-14	-15	-16	-16	-17
Total	**125**	**131**	**137**	**143**	**150**	**156**	**164**	**171**

Similarly to the Mail segment, regarding the operating costs it was calculated the average of the weight of each operating cost line on segment revenues in 2013 and 2014, and used this average to estimate the costs as percentage of revenues. In addition to this assumption, it was also assumed some cost savings/increases in 2015 would be in line with those presented in 1H2015 report, as consequence of the ongoing Transformation Programme. From 2016 onwards, operating costs were estimated as a percentage of revenues in 2015.

[14] According to Ecommerce Europe Association, Ekos Global and Forrester Research.

Operating Expenses Projections	**Average weight in Revenues (2013-2014)**	**Cost Saving in 2015**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**	**2020E**	**2021E**
External Supplies and Services	-77%	-5.1%	-96	-100	-105	-110	-115	-120	-125
Personnel Expenses	-19%	4.9%	-26	-27	-28	-29	-30	-32	-33
Other expenses	-2%	4.4%	-2	-2	-3	-3	-3	-3	-3
CTT's Central Structure Allocation	0%	-0.3%	0	0	0	0	0	0	0
Internal Services	0%	0.0%	0	0	0	0	0	0	0
CTT's Central Structure Allocation	-11%		-15	-16	-16	-17	-18	-19	-19
Intergroup Eliminations	15%		19	20	21	22	23	24	25
Total operating expenses	-94%		-124	-129	-135	-141	-148	-155	-162
EBITDA			**7**	**8**	**8**	**8**	**9**	**9**	**10**

In the table above, it is possible to acknowledge that the EBITDA forecasts are expected to be considerably flat, though slightly increasing positively.

Financial Services Segment

As mentioned in previous sections, the Financial Services segment includes a broad range of financial products, and CTT aims to continue growing its product offer. In fact, recent agreements for partnerships with CETELEM and ALTICE and the launch of Postal Bank, are examples that verify CTT's intension to expand its product offer in the financial services field.

To what personal credit activity is concerned, CTT started to offer in 2014 with the partnership established with CETELEM (BNP Paribas) for at least five years. CTT will play an intermediate role as it already did in other saving and insurance products. This means that CTT receives part of a fee charged per credit granted. For the purpose of this valuation exercise, it was assumed that CTT will keep 1/3 of the fee earned over the credit granted, which in turns leaves CETELEM with the remaining 2/3. Additionally, it was also assumed that CETELEM will preserve its current market share of 7% and its average credit of 149 million euros.

Then, regarding the savings and insurance flows, it was assumed they would follow the same trend of the Portuguese national savings plus 10% in 2015, 5% in 2016 and 2% in 2017. This assumption is still conservative, taking into consideration that this account in 1H2015 grew by 29.7% compared to 1H2014.

Furthermore, it was also assumed the money orders and transfers, as well as payment services would follow the same path of that of the Portuguese economy. The table below summarises the projections for the revenues in this segment.

Revenues by Segment Projection	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**	**2020E**	**2021E**
Payments	30	30	31	31	32	32	33	34
Money Orders & Transfers	12	12	12	12	13	13	13	13
Savings & Insurance Flows	31	36	38	39	40	42	43	43
Personal Loans	0	5	5	5	5	5	5	5
CTT's Central Structure Allocation	3	3	3	3	3	3	3	3
Intergroup Eliminations	-5	-5	-5	-5	-5	-5	-5	-5
Total	**73**	**82**	**85**	**87**	**89**	**91**	**93**	**94**
GDP Growth	*2.2%*	*1.7%*	*1.9%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*2.0%*
Savings Growth	*5.2%*	*4.7%*	*1.5%*	*1.1%*	*2.1%*	*3.4%*	*3.6%*	

Source: Analyst estimates, Banco de Portugal and European Commission.

Similarly to the other two segments, for projecting the operating costs of the Financial Services segment, it was analysed the weight of each cost line as percentage of revenues, but given to nature of the recent changes in cost structure, we will assume the weights of 2014. To these weights, we have applied the expect cost savings from the Transformation Programme in 2015, again using the report cost savings/increases for the first semester in 2015. From the year 2016 onwards, we have applied each cost line's weight on 2015's revenues to estimate the cost amount in the following years. The table below summarises the operating costs structure for the financial services segment:

Operating Expenses	Weight in Revenues (2014)	Cost Saving in 2015	2015E	2016E	2017E	2018E	2019E	2020E	2021E
External Supplies and Services	18%	-5.1%	-14	-15	-15	-15	-16	-16	-16
Personnel Expenses	6%	4.9%	-5	-5	-6	-6	-6	-6	-6
Other expenses	26%	7.9%	-23	-24	-24	-25	-25	-26	-26
CTT's Central Structure Allocation	0%	-0.3%	0	0	0	0	0	0	0
Internal Services	0%		0	0	0	0	0	0	0
CTT's Central Structure Allocation	6%		-5	-5	-5	-5	-5	-6	-6
Intergroup Eliminations	-8%		6	6	6	6	6	6	6
Total Operating Expenses	0%		**-42**	**-43**	**-44**	**-45**	**-46**	**-47**	**-48**
EBITDA			**40**	**42**	**43**	**44**	**45**	**46**	**46**

WACC

In order to compute the weighted average cost of capital (WACC) for CTT's core business, it was assumed that all business lines, with the exception of the Postal Bank, would have the same WACC. The reasoning behind this assumption has to with the majority of CTT's services being offered in the same place and provided by the employees, therefore making it almost impossible to clearly allocate the costs by the different segments. In summary, discounting all CTT business lines at the same WACC was considered to be the most accurate methodology.

Firstly, in order to estimate the cost of equity, it was used the capital asset pricing model (CAPM). It was applied a market risk premium of 7.0%, the average between the 6-8% range commonly used in the industry, and risk-free rate of 1.15% based on the German Government Bonds. Then, for the sector beta, it was estimated an average of the unlevered betas of a range of companies (see table below – sourced from Bloomberg), reaching an unlevered beta of 0.660. This range of companies is comprised by European companies operating in at least one line of business that CTT also operates. As a comparison, Bloomberg estimates CTT's beta to be 0.654, which is quite similar to the one estimated based on CTT's peers.

Summary of Assumptions	
Levered Beta	0.66
Re	7.30%
Rf	1.15%
CRP	1.50%
Market Premium	7.00%
Tax	31.50%
Rd	3.80%
D/V	0.31%
WACC	7.28%

Company	Country	Levered Beta	Tax Rate	Market Cap (31-12-2014)	Net Debt	Unlevered Beta
Deutshe Post	Germany	0.568	30.75%	37,716	5169	0.519
Royal Mail	UK	0.760	20%	4,420	638	0.681
Bpost	Belgium	0.718	33.99%	4,157	75.4	0.710
Post NL	Netherlands	1.042	25%	1,367	1270	0.614
UK Mail Group	UK	0.611	20%	264	9.8	0.593
TNT Express	Netherlands	0.974	25%	3,038	166	0.936
Austrian Post	Austria	0.568	25%	2,728	17.7	0.565
					Average	**0.660**

Source: Bloomberg and Analyst Estimates.

Then, in order to compute the average asset beta, it was assumed that CTT's debt-to-equity ratio would remain the same of 2014 (0.3%), as high levels of cash and foreseeable strategy for the future does not imply changes in the capital structure.

Finally, in order to estimate the probability of default for CTT, it was taken into consideration the probability of default for the three segments, as calculated the weighted average, reaching a 0.54% default rate. Finally, it was assumed a recovery rate of 61%[15]. Then, as debt premium, it was assumed the yield of Portuguese Government Bonds for as at 31 December 2014. Altogether, these yielded a cost of debt of 3.8%.

Debt Premium	2.65%
Rf	1.15%
Recovery Rate	61.00%
Default	0.54%
Costs of Debt (Rd)	**3.80%**

Default Probability Forecast by Industry in Europe	Probability	Weight in Revenues
Telecommunications	0.60%	72%
Transportation	0.50%	17%
Finance	0.20%	10%
Probability of Default	**0.54%**	

Source: Moody's Investor Service and Analyst Estimate

[15] E*uropean Corporate Default and Recovery Rates, 1985-2007* – Moody's Global Credit Research

As summarised in table above, the WACC considered for the valuation of CTT was 7.28%.

A special note should also be made regarding the terminal growth rate g. Several studies[16] point in the direction of strong correlations between mail volumes and GDP, with direct mail being the most sensitive to changes in the economic conditions. Also, evidence showed that GDP growth is one of the main drivers for mail volume. Hence, as CTT's main source of revenues is the Mail segment, this valuation was performed under the assumption that g would equal the estimated growth of Portugal in the long run (2.0%).

CTT Valuation

CTT	Fiscal Year Ending Dec. 31							
Valuation	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**	**2020E**	**2021E**
EBIT	**112**	**105**	**104**	**103**	**102**	**101**	**101**	**102**
Notational Tax	-26	-24	-24	-24	-23	-23	-23	-23
Tax Adjustments	-22	-8	-8	-7	-7	-7	-7	-7
NOPLAT	**64**	**73**	**73**	**72**	**71**	**70**	**71**	**71**
Depreciation and Amortisation	22	25	25	25	25	25	25	25
Operating Gross Cash Flow	**86**	**98**	**97**	**97**	**96**	**95**	**96**	**96**
(-) CAPEX	-9	-25	-25	-25	-25	-25	-25	-25
(-) Change in NWC	112	-43	-29	17	9	-15	0	7
(-) Change in Operational Assets and Liabilities	20	-4	-2	0	0	0	-1	0
Unlevered Operating Free Cash Flow	**209**	**27**	**41**	**89**	**80**	**56**	**70**	**78**
Value of Operations (WACC = 7.284%)	**1244**	**1308**	**1362**	**1372**	**1392**	**1438**	**1472**	**1502**
Non-Operating Assets								
Investment Properties	23	23	23	23	23	23	23	23
Investment in Associates	0	0	0	0	0	0	0	0
Other Investments	1	1	1	1	1	1	1	1
Deferred Tax Assets related to Employee Benefits	78	69	65	63	62	60	59	59
Excess Cash	650	516	511	505	499	494	498	503
Non-Operating Liabilities								
Employee Benefits	-256	-274	-266	-261	-261	-261	-261	-261
Provisions	-46	-46	-46	-46	-46	-46	-46	-46
Deferrals	-6	-9	-9	-9	-9	-9	-9	-9
Deferred Tax Liabilities	-5	7	5	5	5	5	5	5
Employee Benefits	-22	-22	-22	-22	-23	-23	-23	-23
Other Current Liabilities	-83	-83	-83	-83	-83	-83	-83	-83
Total Enterprise Value	**1580**	**1491**	**1542**	**1550**	**1562**	**1601**	**1638**	**1672**
Debt (@ Market)	-4	-4	-3	-3	-3	-3	-3	-3
Equity (@ Market)	1577	1488	1539	1547	1559	1598	1635	1669
Outstanding Shares - Millions	*150*	*150*	*150*	*150*	*150*	*150*	*150*	*150*
Expected Share Price (Price Target)	**10.5**	**9.9**	**10.3**	**10.3**	**10.4**	**10.7**	**10.9**	**11.1**

As per the table below, the model applied yields a **price target of 9.9€ per share**.

[16] Nankervis and Rodriguez (1995) – "Aggregate letter traffic demand in the United Kingdom and the Economy"; Florens, Marcy and Toledano (2002) – "Mail Demand in the Long and Short Term"; Veruete-Mckay, Sotery, Nankervis and Rodrigues (2011) – "Letter trafic demand in the UK: an analysis by product and envelope contente type";

Postal Bank

As mentioned earlier in other sections, CTT management decided to expand its offer of financial products and services and in 2014 announced that Postal Bank project would go ahead. The latest information on this subject suggest that the Postal Bank project is up and running.

The target is to have the bank operating in the fourth semester of 2015. However, for the purposes of this valuation, it was assumed that the bank will only start operations in 2016.

According to CTT, the bank is being designed to follow a low cost framework, capitalizing on CTT's wide network of branches across Portugal, targeting the mass market individuals that are looking for day-to-day banking operations as well as simple, but competitive, financial products. The bank's key competitive forces are meant to be CTT's high capillary retail network with experience in financial services, brand awareness, proximity to the population (physical, online and mobile) and complementing CTT's actual range of services and products.

CTT estimates this project will demand an investment of approximately 100 million euros over 5 years.

Then regarding the operations of the Postal Bank, it was assumed that CTT will continue to attract roughly the same the amount of savings captured in 2014 (5,500 million euros) and that a conservative one third of these savings would be deposited within the Postal Bank. Bearing in mind that in 2013, according to INE, the Portuguese deposits amounted about 194,795 million euros, CTT's Postal Bank would have a market share of 3%.

Then, it was also assumed that the Postal Bank would offer an interest rate similar to ActivoBank. The reason behind this choice has to with the fact that ActivoBank is a low cost bank, relying on the Millennium BCP's operational structure, with just few branches and offering most services online or mobile. Even though CTT's strategy differs from ActivoBank's, the Postal Bank is meant to capitalize on CTT's existent structure which will allow following a low cost framework. As such, it was assumed an interest rate of c. 2.2%.

Also, it was assumed that an important source of revenues for the Postal Bank would be commissions and fees. Yet again, it was assumed that CTT would have similar commission and fees to those of Activobank. As such, it was assumed that fees and commissions would represent c. 2.5% of total assets.

The tables below illustrate the Postal Bank's estimated income statement and balance sheet:

Income Statement - Million euros	**Year 0**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Interest received		43	45	46	49	51	53
Interest paid		32	33	34	36	38	39
Net Interest Income		**12**	**12**	**12**	**13**	**13**	**14**
Fees and commissions		50	52	54	57	60	62
Personnel Expenses		-36	-36	-36	-36	-36	-36
Administrative Expenses		-9	-9	-9	-9	-9	-9
Provisions		0	0	0	0	0	0
EBIT		**17**	**19**	**21**	**25**	**28**	**31**
Income Taxes		-5	-6	-7	-8	-9	-10
Effective Tax Rate		31.5%	31.5%	31.5%	31.5%	31.5%	31.5%
Net Income		**11**	**13**	**14**	**17**	**19**	**21**

Balance Sheet - Million euros	**0**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Assets							
Central Banks	18	19	20	21	22	22	23
Portfolio Invested	1943	1994	2068	2172	2289	2352	2416
Tangible Assets	55	68	80	90	100	100	100
Total Assets	**2017**	**2080**	**2167**	**2283**	**2411**	**2474**	**2539**
Liabilities	-1833	-1886	-1960	-2061	-2172	-2215	-2260
Deposits	1833	1886	1960	2061	2172	2215	2260
Total Liabilities	**1833**	**1886**	**1960**	**2061**	**2172**	**2215**	**2260**
Equity	**183**	**195**	**208**	**222**	**239**	**258**	**279**
Total Equity & Liabilities	**2017**	**2080**	**2167**	**2283**	**2411**	**2474**	**2539**

Postal Bank Valuation – Flow to Equity

As mentioned earlier, to estimate the value of the Postal Bank, it was chosen the Flow to Equity (FTE) methodology , as in nature is not possible to separate the financing and investing decisions from the operation decisions as it part of the postal bank core activity[17].

The table below shows valuation for the Postal Bank, in which flows to equity are discounted at the cost of equity (9.863%) and assumes a terminal growth rate of 2.0%, again the same as CTT (excluding Postal Bank), the expected growth rate for the Portuguese economy in the long run.

CTT	**Fiscal Year Ending Dec. 31**							
Postal Bank - Valuation	**Year 0 2015E**	**Year 1 2016E**	**Year 2 2017E**	**Year 3 2018E**	**Year 4 2019E**	**Year 5 2020E**	**Year 6 2021E**	**Terminal Value**
Net Income		11	13	14	17	19	21	
Gross Cash Flow		11	13	14	17	19	21	
Change in Working Capital		55	12.5	12.5	10	10	0	
Decrease (Increase) in Net Long-Term Operating Assets		-128	1	0	-4	-7	-19	
Flow to Equity	**0**	**-62**	**26**	**27**	**22**	**23**	**2**	**273**
PV FTE (@ Re=9.863%)	0	-51	20	18	14	13	1	128
Equity Value	143	143	194	174	156	142	129	128
Outstanding Shares	*150*	*150*	*150*	*150*	*150*	*150*	*150*	*150*
Expected Share Price	**0.95**	**0.95**	**1.29**	**1.16**	**1.04**	**0.95**	**0.86**	**0.86**

Regarding the estimatation of the cost of equity for CTT Postal Bank, it was followed the CAPM approach. It was applied a market risk premium of 7%, the same as CTT (excluding Postal Bank), and a risk free rate of 1.153% (German Government Bonds). Then, regarding the beta, it was computed through the average betas for three Portuguese banks (BPI, Banif and Millennium BCP), which were believed to reflect the risk the Postal Bank would have. Tables on the right summarise the estimate for the beta and cost of equity considered for this valuation.

CAPM	
Market Risk Premium	7.000%
Rf	1.153%
Beta Levered	1.244
Cost of Equity (Re)	**9.863%**

Other Portuguese Banks	**Beta**
Banif	1.074
Millennium BCP	1.412
BPI	1.247
Average	**1.244**

Source: Bloomberg.

[17] Valuation – Measuring and Managing the Value of Companies – Mckinsey & Company, approach to value banks.

Relative Valuation - Multiples

Although the Discounted Cash Flow (DCF) approach is considered the most accurate methodology to value a company, a relative valuation should also be considered. DCF is intrinsically dependent on the forecasts and assumptions, but forward-looking multiples are also a valid tool, as they are consistent with valuation principles and are normalised and therefore triangulating DCF results with multiples will point in to better valuation outcomes.

In order to perform a multiples valuation, the process should start by choosing CTT peers. These peers will naturally share the same value drivers and industry challenges as CTT's.

The table below lists the peers taken into consideration for this valuation and respective multiples. From all the existent companies, the principles for selecting were based on the following criteria: company operating in industry and sector, within Europe and being listed in stock exchange. The outcome resulted in six European companies that operate mainly in the postal sector and well as express and parcels segment, and another European company that operates exclusively in the express and parcels segment.

The table below shows the multiples for each peer and the group average and median for valuations purposes. For more information on these companies, please consult Appendix C.

Company	**EV/EBITDA**		**EV/EBIT**	
	2015E	**2016E**	**2015E**	**2016E**
Deutsche Post	8.00 x	7.12 x	11.38 x	7.25 x
Royal Mail	6.00 x	6.00 x	7.70 x	7.70 x
Bpost	6.44 x	6.64 x	7.71 x	7.78 x
Post NL	3.44 x	3.80 x	4.29 x	4.92 x
UK Mail Group	11.30 x	9.59 x	20.53 x	17.43 x
Austrian Post	8.13 x	7.48 x	11.82 x	10.52 x
TNT Express	7.78 x	8.87 x	7.78 x	8.87 x
Average	**7.30 x**	**7.07 x**	**10.17 x**	**9.21 x**
Median	**7.78 x**	**7.12 x**	**7.78 x**	**7.78 x**
CTT	**11.35 x**	**11.80 x**	**14.20 x**	**14.79 x**
Premium to Average	***55%***	***67%***	***40%***	***61%***

Source: Bloomberg and analyst estimates

From the infinite range of different multiples available, for the purpose of valuing CTT, special attention had been paid to EV/EBITDA and EV/EBIT, as these are commonly used as a proxy for cash flow available to the company. After computing these two multiples for CTT and its peers for 2015 and 2016, the average and median were calculated to reach an industry average.

Final Valuation & Recommendation

After reaching to a value for CTT (excluding the Postal Bank) and for the Postal Bank alone, we have now the information to compute a combined valuation for CTT (including the Postal Bank).

CTT	**Fiscal Year Ending Dec. 31**						
Final Recommendation	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**	**2020E**	**2021E**
CTT	€ 9.92	€ 10.26	€ 10.31	€ 10.39	€ 10.65	€ 10.90	€ 11.12
Postal Bank	€ 0.95	€ 0.95	€ 1.29	€ 1.16	€ 1.04	€ 0.95	€ 0.86
CTT inc Postal Bank	**€ 10.87**	**€ 11.21**	**€ 11.61**	**€ 11.56**	**€ 11.69**	**€ 11.85**	**€ 11.99**

Price @ 31 December 2014	€ 8.02
Expected Capital Gain	**36%**
Price @ 31 August 2015	€ 9.23
Expected Capital Gain	**18%**
Recommendation	**BUY**

As shown in the tables above, the combined price target of CTT and its Postal Bank is, according to the valuation performed in this dissertation, 10.87€. In light of the outcome of this valuation exercise, and comparing the outcome with the prices of close of business of 31 December 2014 (8.02€) and, more recently, 31 August 2015 (9.23€), the recommendation is **BUY**. Generally, a Buy recommendation would be attributable to companies whose upside is greater than 15%. In this case and taking into account the prices above, CTT would yield an expected capital gain of 36% and 18% respectively.

Sensitivity Analysis

To finalise, it was analysed the sensitivity of the share price target in relation to changes in the discount rate (WACC) and the terminal growth rate (g). It was tested the impact of changes of 0.2% and 0.5% in WACC and g respectively. As expected, the price of the share in this model, will be positively affected by greater terminal growth rates and lower discount rates, as well as, negatively impacted by higher discount rates and lower terminal growth rates.

	Price Target	Terminal Growth Rate (g)				
		1.00%	1.50%	2.00%	2.50%	3.00%
WACC	6.884%	9.14	9.74	10.46	11.34	12.45
	7.084%	8.95	9.51	10.18	10.99	12.00
	7.284%	8.77	9.30	9.92	10.67	11.60
	7.484%	8.61	9.10	9.68	10.38	11.23
	7.684%	8.45	8.91	9.46	10.11	10.89

Comparison with an Investment Bank

One of the objectives of this dissertation was to compare the outcome of the presented valuation with the valuation from an investment bank. This company is researched by several entities, but for the purpose of this comparison, it was taken into account BPI's research note from 3 September 2015.

The table below summarises the main inputs in each valuation:

	Thesis	**BPI**
Methodology	CTT ex Postal Bank – FCFF (WACC) + Postal Bank – FTE (Re)	FCFF (WACC)
Price Target (€)	9.92	9.13
Risk-Free Rate	1.15%	3.25%
Market Risk Premium	7.00%	6.00%
Unlevered Beta	0.66	-
Levered Beta	0.66	0.85
Cost of Debt	3.80%	3.84% (pre-tax)
Cost of Equity	7.30%	9.90%
D/EV	0.30%	10.00%
Tax Rate	31.50%	27.50%
WACC	7.28%	9.10%
Terminal Growth Rate	2.00%	-

Apart from the differences in the methodology, the differences that impact the most are the risk-free and the beta, hence the cost of equity, and the assumption on leverage level and therefore significant differences in the WACC.

Appendix A – Shareholder Structure and Stock Price

The General Meeting held on October 30th 2013 decided to reduce the registered capital of CTT from €87,325,000 to €75,000,000, being from that date represented by 150,000,000 shares, with a nominal face value of 0.5€ each.

CTT has been listed in the Lisbon Stock Exchange since December 5th 2013, with the conclusion of the first stage of the privatisation process, whereby 63.64% (95.5 million shares) were sold to private investors, of which 14% (21 million shares) were sold in a Public Offering and 49.64% (75.5 million shares) sold to Institutional Direct Selling. As at 31 December 2013, the Portuguese State, through Parpública – Participações Públicas, SGPS, S.A. held 36.36% of CTT shares, 30% by detention and 6.36% by allocation.

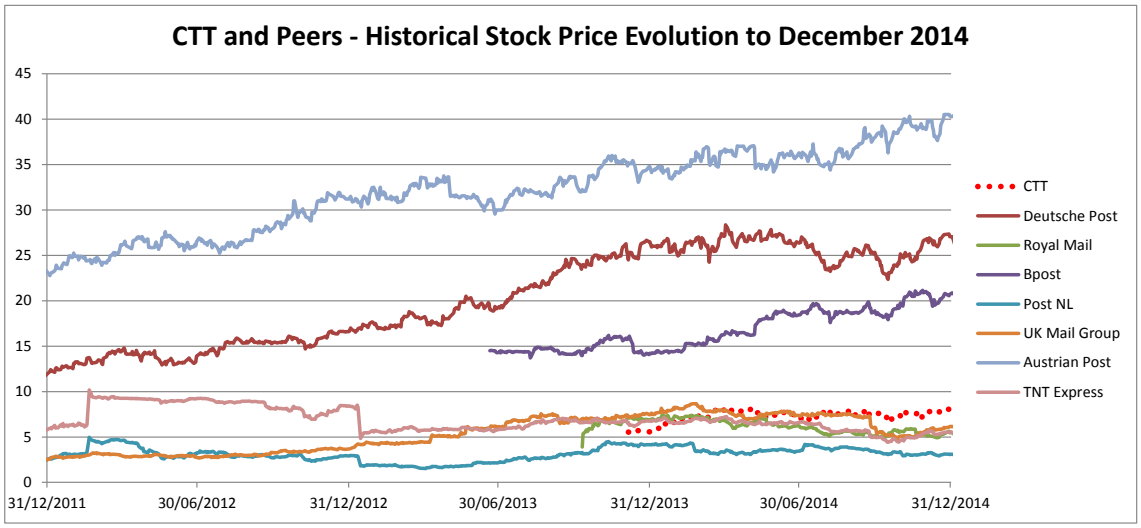
The second and final stage of the privatisation process was concluded on September 5th 2014, whereby the state sold its current shares, 31.503% of CTT's capital, via a private offering of shares (the "Equity Offering") via an accelerated book building process, addressed only to institutional investors. It is important to highlight that there are no different classes of shares.

As at 31 December 2014, the largest shareholder were Standard Life Investment with c. 6.7%, followed by Aegon with 3.4%. Appendix A summarises the shareholder structure of CTT as well as the stock price evolution over time.

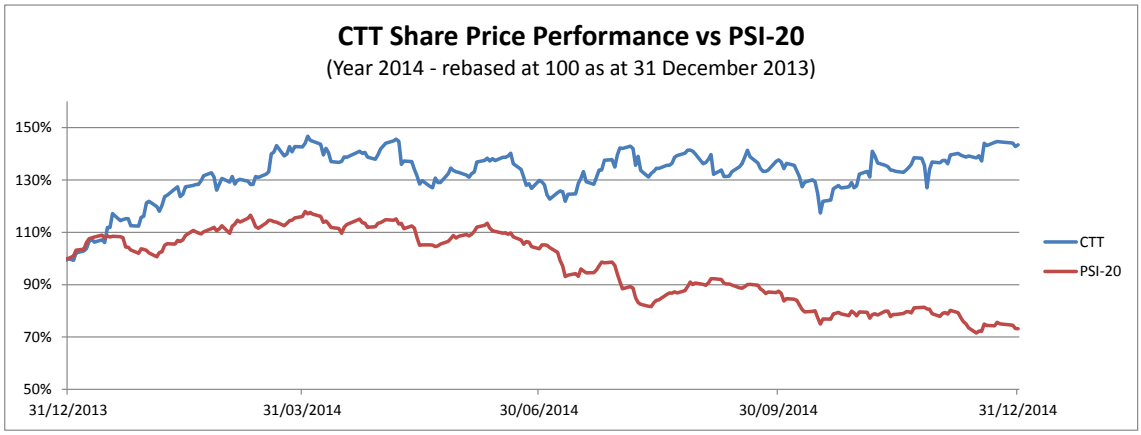
Shareholders Structure 31/12/2014	**# Shares**	**%**
Standard Life Investment (Holdings) Limited	10,007,653	6.672%
Aegon NV	5,141,137	3.427%
Allianz Global Investors Europe Gmbh (AGIE)	4,695,774	3.131%
UBS Group AG	3,830,469	2.554%
Morgan Stanley & Co. International plc	3,553,396	2.369%
UniCredit S.p.A.	3,128,282	2.086%
Artemis Investment Management LLP	3,104,624	2.070%
FMR LLC	3,096,298	2.064%
DSAM Cayman Ltd.	3,096,079	2.064%
The Goldman Sachs Group, Inc.	3,019,750	2.013%
Other Shareholders	107,326,538	71.551%
Total	**150,000,000**	**100.000%**

Source: Company

In terms of stock performance, the charts below compare the evolution of CTT stock price over the last three years with those of its European peers. However, as CTT has only started being listed in December 2013, CTT's track record is therefore shorter than its peers.



Then, comparing the performance of CTT against the Lisbon Euronext Stock Exchange (PSI-20), one can easily realize how the company performed over the one year period to 31 December 2014, with a performance of 43.4% vs -26.8%, clearly outperforming the index. In fact, CTT was the best performer of the PSI-20 in this year, followed by EDP Renováveis.



Appendix B – Financial Statements

CTT	Fiscal Year Ending Dec. 31								
Consolidated Income Statement - EUR m	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**	**2020E**	**2021E**
Operating Revenues	**705**	**718**	**750**	**742**	**734**	**725**	**718**	**724**	**730**
Operating Expenses (excluding impairments, provisions, depreciations and non-recurring expenses	-582	-583	-619	-611	-604	-597	-591	-596	-602
EBITDA	**123**	**135**	**131**	**131**	**129**	**128**	**127**	**128**	**128**
Impairment of Inventories and Accounts Receivables (Losses/Reversals)	-2	-1	-2	-2	-2	-2	-2	-2	-2
Provisions (Increases/Decreases)	0	-1	0	0	0	0	0	0	0
Net Provisions	0	0	0	0	0	0	0	0	0
Impairments of Non-Depreciatable Assets	0	0	0	0	0	0	0	0	0
Depreciation/Amortisation and Investment Impairments (Losses/Reversals	-25	-22	-25	-25	-25	-25	-25	-25	-25
EBIT	**96**	**112**	**105**	**104**	**103**	**102**	**101**	**101**	**102**
Corporate Restructuring (Expenses)	4	37	0	0	0	0	0	0	0
Privatisation Expenses	-4	-3	0	0	0	0	0	0	0
Other Income and Non-Recurring Expenses	-8	-10	-13	-13	-13	-13	-13	-13	-13
Net Financial Income	-4	-7	-3	-3	-3	-3	-3	-3	-3
Gains / Losses in Associated	0	0	0	0	0	0	0	0	0
EBT	**83**	**128**	**89**	**89**	**87**	**86**	**85**	**86**	**86**
Income Tax	-22	-51	-28	-28	-28	-27	-27	-27	-27
Effective Tax Rate	*27%*	*40%*	*32%*	*32%*	*32%*	*32%*	*32%*	*32%*	*32%*
Loss (Income) Attributable to Non-Controlling Interests	0	0	0	0	0	0	0	0	0
NET INCOME	**61**	**76**	**61**	**60**	**60**	**59**	**58**	**59**	**59**

CTT	Fiscal Year Ending Dec. 31								
Balance Sheet - EUR m	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**	**2020E**	**2021E**
Non-Current Assets									
Tangible Assets	225	212	212	212	212	212	212	212	212
Investment Properties	22	23	23	23	23	23	23	23	23
Intangible Assets	13	13	13	13	13	13	13	13	13
Goodwill	25	8	8	8	8	8	8	8	8
Investment in Associated Companies	1	0	0	0	0	0	0	0	0
Other Investments	0	1	1	1	1	1	1	1	1
Other Non-Current Assets	2	1	1	1	1	1	1	1	1
Deferred Tax Assets	104	91	86	84	82	80	78	78	78
Total Non-Current Assets	**392**	**350**	**345**	**343**	**341**	**339**	**337**	**337**	**337**
Current Assets									
Inventory	6	6	6	6	6	6	6	6	6
Accounts Receivables	136	132	138	136	135	133	132	133	134
Income Tax	0	0	0	0	0	0	0	0	0
Deferrals	5	6	6	6	6	6	6	6	6
Other Current assets	17	23	25	25	24	24	24	24	24
Cash and Equivalents	545	665	531	526	520	514	509	513	517
Total Current Assets	**708**	**831**	**706**	**699**	**691**	**683**	**676**	**681**	**687**
Total Assets	**1100**	**1181**	**1051**	**1041**	**1032**	**1022**	**1013**	**1018**	**1025**
Equities and Liabilities									
Equity									
Capital	75	75	75	75	75	75	75	75	75
Reserves	30	32	32	32	32	32	32	32	32
Retained Earnings and Other Variation on Equity	108	66	-25	4	-14	-30	-21	-19	-21
Net Income of the Period Attributable to Equity Holders	61	77	61	61	60	59	58	59	59
Non-Controlling Interests	2	0	0	0	0	0	0	0	0
Total Equity	**276**	**249**	**143**	**172**	**153**	**136**	**144**	**147**	**144**
Liabilities									
Non-Current Liabilities									
Loans	3	2	2	2	2	2	2	2	2
Employee Benefits	279	256	274	266	261	261	261	261	261
Provisions	39	46	46	46	46	46	46	46	46
Deferrals	9	6	9	9	9	9	9	9	9
Deferred Tax Liabilities	5	5	-7	-5	-5	-5	-5	-5	-5
Total Non-Current Liabilities	**335**	**314**	**324**	**317**	**312**	**312**	**312**	**312**	**312**
Current Liabilities									
Accounts Payable	392	500	530	524	518	512	507	511	516
Employee Benefits	20	22	22	22	22	23	23	23	23
Tax Liabilities	0	6	4	4	3	3	3	3	3
Loans	4	2	2	2	2	2	2	2	2
Deferrals	4	6	-56	-81	-61	-48	-59	-61	-58
Other Current Liabilities	70	83	83	83	83	83	83	83	83
Total Current Liabilities	**489**	**617**	**584**	**553**	**568**	**574**	**558**	**560**	**569**
Total Liabilities	**824**	**932**	**908**	**870**	**879**	**886**	**870**	**872**	**880**
Total Equity and Liabilities	**1100**	**1181**	**1051**	**1041**	**1032**	**1022**	**1013**	**1018**	**1025**

CTT	Fiscal Year Ending Dec. 31								
Cash Flow Map	**2013**	**2014**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**	**2020E**	**2021E**
Operating Cash Flows									
EBIT	96	112	105	104	103	102	101	101	102
Notational Tax	-22.1	-25.6	-24	-24	-24	-23	-23	-23	-23
Tax Adjustments	-3.0	-21.7	-8	-8	-7	-7	-7	-7	-7
NOPLAT	71	64	73	73	72	71	70	71	71
Depreciation and Amortisation	25	22	25	25	25	25	25	25	25
Operating Gross Cash Flow	96	86	98	97	97	96	95	96	96
(-) CAPEX	10	-9	-25	-25	-25	-25	-25	-25	-25
(-) Change in NWC	47	112	-43	-29	17	9	-15	0	7
(-) Change in Operational Assets and Liabilities	0	20	-4	-2	0	0	0	-1	0
Unlevered Operating Free Cash Flow	**153**	**209**	**27**	**41**	**89**	**80**	**56**	**70**	**78**
Non-Operating Cash Flows									
(-) Change Non-Operating Assets and Liabilities	-24	4	19	-2	-4	2	2	2	0
(-) Corporate Restructuring (Expenses)	3	29	0	0	0	0	0	0	0
(-)Privatisation Expenses	-3	-2	0	0	0	0	0	0	0
(-) Other Income and Non-Recurring Expenses	-6	-8	-10	-10	-10	-10	-10	-10	-10
(+) Financial Income	6	3	6	6	6	6	6	6	6
(+/-) Gains/Losses in Associated	0	0	0	0	0	0	0	0	0
Non-Operating Cash Flows	**-25**	**26**	**15**	**-6**	**-7**	**-2**	**-2**	**-2**	**-3**
Total Free Cash Flow to the Firm	**128**	**235**	**42**	**36**	**82**	**79**	**54**	**68**	**75**
Cash Flows from Financing									
(+) Change in Equity	-56	-33	-88	-183	-33	-80	-77	-51	-55
(+) Change in Net Financial Debt	-64	-60	-123	134	5	6	6	5	-4
(-) Finance Cost	-12	-12	-11	-11	-11	-11	-11	-11	-11
(+) Tax Shield	3	3	3	3	3	3	3	3	3
Free Cash Flow from Financing	**-129**	**-103**	**-219**	**-58**	**-36**	**-83**	**-80**	**-55**	**-68**

Appendix C – Postal Service Regulatory Framework

At an international level, CTT and the other operators need to oblige to Universal Postal Union (UPU). This entity is responsible for the coordination of international mail, making recommendations to stimulate growth in the mail, parcel, and financial services and ensure that quality standards are met. UPO is the second oldest international organisation worldwide and is the primary forum for cooperation between postal sector players. This organisation has 192 member countries and Portugal is one of them, which implies that Portugal, hence CTT, must comply with a set of rules established by UPU. More specifically, CTT must accept, process, transport and deliver letters and mailings that are transboundary if they do not exceed the 2kg, or letters, postcards, printed matter and small packages up to 2kg. Additionally, braille letter up to 7kg, special packaging containing newspapers, magazines, books and printed documentation similar to the same consignee at the same address called "M bags" to 30 kg and parcels up to 20kg.

In what UPO designated "Doha Postal Strategy", this entity underlined the postal network's three dimension – physical, electronic and financial – as well as interconnection, governance and development as key pillars to strengthen postal services worldwide. Namely, this document covered four objectives for the period between 2013 and 2016: improve the interoperability of international postal networks, provide technical knowledge and expertise related to postal sector, promote innovative products and services and foster sustainable development of postal sector[18].

At the European level, the regulation was designed to ensure that efficient, reliable and good-quality postal services are available throughout the EU to all citizens at affordable prices

Later in 2002, another directive (Second Postal Directive – Directive in 2002/39/EC of the European Parliament and the Council of 10 June) was released to allow a greater level of competition on the postal market and to reduce the weight limit of the services provided within the universal services.

More recently, in 2008, a third and final directive (The Third Postal Directive – Directive 2008/6/EC of the European Parliament and the Council of 20 February) entered into force to establish the full realisation of the European internal postal market at the legislative level. In other words, this directive established a complete set of rules, ranging from price guidelines under the principles of transparency and non-discrimination, to other set of minimum requirements. Among others, it also defined the minimum density of the points of contact taking into consideration the needs of the users, established that universal services must be provided at least 5 days a week, and established quality and technical standards as well the financing of the universal service.

Lastly, at the national level the postal sector must oblige to the Postal Law, which in summary is the application of the Third Postal Directive to the Portuguese Law. This law was approved in 2012 (Law number 17/2012, of 16 April, as amended by Decree-Law number 160/2013, 19

[18] "Annual Report 2013 – Weaving a web of innovation" – Universal Postal Union (UPU)

November) and opened the postal sector to competition, eliminating the areas under the universal service that were still reserved to CTT. However, for the sake of public order and security and general public interest, some activities still remained reserved for CTT up to 2020: placement of letter boxes on public routes, the issue and sale of postal stamps with the word "Portugal" and registered mail service used in legal and administrative proceedings.

The universal service includes the following services, both at international and national level:

- Postal service for letter mail, excluding addressed advertising, books, catalogues, newspaper and other periodicals weighting up to 2kg;
- Postal service for parcels weighting up to 10kg, as well as delivery on national territory of postal parcels received from other Member States of the European Union weighting up to 20kg;
- Registered mail and insured mail service;

The Portuguese postal law also established the funding of the universal service, whereby the universal service providers are entitled to compensation of the net cost of the USO when it constitutes an unreasonable financial burden. This compensation is meant to be financed by a yet to created compensation fund, supported by the postal service providers, as per the Law 16/2014 of 4 April, that established that contributions to the aforementioned fund should come from postal service providers which offer services that, from the point of view of the user, are considered services exchangeable with those covered by the universal service.

Later on, with the publication of the Decree-Law 160/2013, of 19 November, the Portuguese Government reviewed the principles of the concession pursuant of the system, establishing the concession contract with CTT, whereby CTT would remain the exclusive universal service provide until 31 December 2020.

Pursuant to the provisions in the Principles of the Concession of the Universal Postal Service and respective Concession Contract, on 28 August 2014, following the proposal submitted by CTT, ICP-ANACOM approved the final decision on the objectives of postal network density and minimum services offer demanded for CTT over the following three years. As consequence, quality of service standards, performance targets, criteria for price-setting were established.

Later, on 21 November 2014, ICP-ANACOM approved the criteria for prices for the universal service for the three-year period from 2015 to 2017. According to CTT, these criteria established the maximum annual price variation for the letter mail, editorial mail and parcels basket (non-reserved services), linked to the inflation rate (CPI) and evolution of volumes, including in 2016 and 2017 the inflation adjustment factor (CPIAF) and volume adjustment factor (VAF) which should take into account the differences that may occur between the actual and predicted values for those variables. For summons and postal notifications (services reserved to CTT) a maximum annual price variation is also established, linked to the same factors considered in the basket of the non-reserved services.

In terms of quality of service, ICP-ANACOM approved on 30 December 2014, the parameters and performance targets associated with CTT's provision of the universal postal service for the period from 2015-2017. This approval revoked the rules laid down in the previous agreement,

but maintained the minimum and target value for quality of service indicators and respective performance targets, and introduced an indicator for the transit time of registered mail.

Appendix D – Peers Description

Company	Business Segments /Activity	Listed?	Market Cap (31/12/2014) (in Million €)	Dividends?
Deutsche Post	German's only universal provider of postal services, is part of the World's largest logistics group, Deutsche Post DHL. Delivers mail in Germany and the World, expert provide of dialogue marketing and press distribution, as well as corporate communication solutions.	Yes	32,716	Yes
Royal Mail Group	Royal Mail is the UK's designated universal service provider. The Group also operates in the parcels business in the UK and Europe, via Global Logistics Systems (GLS), one of the largest parcel delivery network in Europe	Yes	5,640	Yes
Bpost	Also known as the Belgium Post Group, has an integrated network for domestic mail and parcels, provides services for international mail and parcels. Similarly to CTT, also provides fin**ancial and insurance products**, as well as value-added solutions	Yes	4,157	Yes
Post NL	PostNL is the main provide of postal, parcels and logistics services in the Netherlands. Additionally, the company operates the largest mail and parcel distribution network in the Benelux (Belgium, Netherlands and Luxembourg) region.	Yes	1,367	Yes
UK Mail Group	UK Mail Group, which started as a taxi firm in 1971, is nowadays the largest independent mail, parcels and logistics services company in the UK, providing delivery solutions locally and worldwide.	Yes	336	Yes
Austrian Post	Austrian Post is the leading logistics and postal services provider in Austria. Main	Yes	2,728	Yes

	business activities include the transportation and delivery of letters, direct mail items, print media and parcels. In summary, the company provides all types of postal, parcel and logistics services, financial services, communication and information technology in automated data processing and information engineering, and other commercial services (including trading and sales of all types of goods).			
TNT Express	Unlike the other companies listed above, TNT Express business activity focuses only transferring goods and documents around the world, offering time-definite and day-definite pick-up and delivery solutions.	Yes	3,028	Yes