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**EQUITY VALUATION OF
ALTRI, SGPS, S.A.**

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I. ABSTRACT

The purpose of this thesis was to make a valuation of the company Altri, SGPS, S.A., a Portuguese company, which is listed on the Euronext Lisbon stock exchange and a member of its main index, the PSI-20, and operates in the pulp industry.

To perform the company valuation, the different valuation methodologies were analysed, and taking into consideration the advantages and limitations of each. To this specific case the most appropriate methods were chosen.

The company's history, performance and future prospects were analysed, and assumptions were taken which gave us a final price to the company shares, that was compared with an Investment Banking analysis.

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V. LIST OF ABBREVIATIONS

APV – Adjusted present value

BCP – Bleached chemical pulp

BEKP – Bleached eucalyptus kraft pulp

BHKP – Bleached hardwood kraft pulp

BSKP – Bleached softwood kraft pulp

CAPEX – Capital Expenditures

CAPM – Capital asset pricing model

COGS – Costs of the goods sold

DCF – Discounted cash flow

DP – Dissolving pulp

EBIT – Earnings before interests and tax

EBITDA – Earnings before interests, tax, depreciation and amortization

EV – Enterprise value

EVA – Economic value added

FCFF – Free cash flow to the firm

GDP – Gross Domestic Product

IB – Investment Bank

ITS – Interest tax shields

NBSK – Northern bleached softwood kraft

PER – Price earnings ratio

PV – Present value

P&W – Printing and writing

TV – Terminal Value

WACC – weighted average cost of capital

WC – Working Capital

1. INTRODUCTION

This thesis is a part of the last semester of the International Master in Business Administration at the Católica Lisbon School of Business and Economics.

The main purpose of this dissertation is to value Altri, SGPS, S.A. using the most appropriate methods, taking into consideration the company and industry's specifications.

The thesis is divided in multiple parts: the first part is the literature review where is introduced and explained the methods of valuation and their terms; in the second part we find a completely analysis of the company, history and strategies to the future; the third fraction is the full analysis of the industry with historical and prospect data; and then we value all the company taking into consideration the company and industry's analysis.

This is a challenging valuation due to the cyclical behaviour of this industry, due to the efficiency of this company, which is recognised in the industry and finally due to the high level of leverage that the company aims to reduce.

At the end we compare the valuation with a prestigious Investment bank, BPI to verify and to prove the differences between my methodologies and assumptions and the BPI ones.

2. LITERATURE REVIEW

According to Damodaran (2006) “valuation can be considered the heart of Finance” since companies and investors decisions are based on the predicted capacity of firms increase or decrease their enterprise value in the future.

“Companies dedicated to value creation are healthier and build stronger economies, higher living standards, and more opportunities for individuals.”

(Goedhart, Koller and Wessels, 2005)

Through that we see the importance of firms’ valuation to their own manager but also to investors’ decisions. “Valuing companies and their business units helps to identify sources of economic value creation or destruction” (Fernandez, 2007)

All the valuations are under different perceptions and assumptions taken by the analysts that provide different results. These differences are based on the inefficiency of the markets that analysts feel the need to correct to adjust the real value of companies.

This differences lead to the existence of Myths and common errors when performing valuations.

According to Damodaran (2002) there are six myths of valuation

1. “Since valuation models are quantitative, valuation is objective.”

The Valuation isn’t a concrete science and there isn’t a right way that leads us to the “true” value of a company. It’s true that the models are quantitative but the inputs are subject of each analyst judgements. All the valuations are biased and the only doubt is in which direction.

2. “A well-research and well-done valuation is timeless.”

The values obtained through the different valuation models are impacted by the company and markets characteristics. So if new information appears or some situations change, the value of the company will also change. You can perform or find a “perfect” valuation but the time and environment changing change the value of the firms.

3. “A good valuation provides precise estimate of value.”

Even the best valuation, most careful and specific is under assumptions of the analysts that might not correspond to the real situation and the truth is that no one can predict the future and the way that companies and markets will behave and so the cash flows and discount rates estimated can represent a error that is in the basis of the valuations.

4. “The more quantitative a model, the better the valuation.”

This isn't necessarily true: as the models become more complex more assumptions are made by the analysts, increasing the potential errors associated with judgments. “Models don't value companies – you do” this means that we have the model but who introduce the data and take assumptions are the analysts and not the models. Simpler and with less inputs the valuation easier it is to understand and many times that models are better since they have less assumptions than the more complex ones.

5. “To make money on valuation, you have to assume that markets are inefficient”
(but that they will become efficient).

The truth is that when analysts value a company and take their own assumptions, they are assuming that the market are inefficient and they need to adapt the values obtain to their real value. Assuming that and that their valuation will represent the “true” value of the company they assume that the markets will become efficient and will know interpret the real value of the companies. There might be some people that believe that the market value represent the real value of the companies and look to valuations just as a informative process.

6. “The product of valuation is what matters; the process of valuation is not important”

On every valuation models there are a risk of only focus on the final outcome, whether is under or over value but the truth is that the process can give us lot of information about the determinants of the value and answer to fundamental questions on a valuation process.

Fernández (2004) also show that errors are more common in valuation than we realize. Most of these errors are made by the analysts when they need to make assumptions related to discount rates, risk concern each company, calculating and forecasting future cash flows and errors related to interpretation of the environment of the companies and markets.

2.1. Valuation Models

There are multiple ways to get to the value of a firm and the difference among them is in which direction each one focuses its valuation.

One of the first distinctions that we need to make when making a valuation is the difference between enterprise and equity values. The equity value represents the value of the firm to the equity holders and the enterprise value the equity value plus the value of debt

$$EV = E + D$$

EV – Enterprise Value

E – Equity value

D – Debt value

There is a lot of ways to get to these values based on cash flows, returns or multiples (Young et al. 1999). Valuations based on cash flow can be differentiated in methods using cash flows to equity investors (Dividend discount model) or cash flows to equity and debt holders the so called free cash flow. If we value the company's operations value we do it through the free cash flow to the firm but if we value the cash flows to the equity holders we use the free cash flow to the equity.

Using the returns the most used model is the Economic Value added that give us the Enterprise value and the methods based on multiples assume that value result from a price from a similar asset obtained in a public market.

When valuing a company using its cash flows from operation we have three different ways to perform it: through the WACC (weighted average cost of capital), APV (adjusted present value) or through the Capital cash flow.

The contrast of the three models is the way that each model treats the tax shields. Bienfait (2005) distinguish them in this way:

- The WACC approach values the tax shield by adjusting the cost of capital
- The APV approach values the tax shield separately from the un-levered free cash flow
- The CCF approach values the tax shield by incorporating it in the cash flow

The firm's valuation using the cash flows to the equity holders (FCFE) most known model is the Dividend discount model and it is based on the prediction of the dividends that the firm will pay to the equity holders and on their net present value. This model ground on the assumption that it is possible to predict reliably the dividends (D) that the company will pay and discount them to the cost of equity of the firm which is the discount factor. The terminal value of the discount model is discount the last predicted dividend (D_n) that is multiplied for the growth rate (g) for the cost of equity less (K_e) the expected growth (g) (Damodaran 2011).

$$P_0 = \sum \frac{D_x}{(1+K_e)^x} + \frac{\frac{D_{n+1}}{K_e - g}}{(1+K_e)^n} \quad D_{n+1} = D_n * g$$

The firm valuation can also be made using returns of the company and in this specific case we have the Economic Value Added (EVA) model that the value of the company is measured by the financial performance where the net operating profit is deducted for the cost of capital invested. EVA is a model that measures the surplus value created by the company.

$$EVA = NOPAT - K \times WACC \Leftrightarrow EVA = K \times (ROC - WACC)$$

$$V_L = K + \sum_{t=1}^n \frac{EVA_t}{(1+WACC)^t}$$

NOPAT – Net operating profit after tax

K – Capital

WACC – Weighted average cost of capital

ROC – Return on capital

For last the valuation of companies can be made using multiples. This model is based on value an asset based on how similar assets are valued in the market using a multiple such as cash flows, sales, profits or book values. This valuation must be made using same industry companies either using an industry average or a peer group that is more similar companies to the one that is being valued.

2.2.1 The DCF models

Performing a Discount Cash Flow (DCF) valuation we have four main different models: the enterprise valuation that value the companies' operations cash flow, the equity valuation that value the cash flow to equity holders, the capital cash flow that value the flows to equity and debt holders and the Adjusted present value (APV) that also value the operations cash flow but with a different discount factor of the enterprise DCF. (Oded and Michel, 2007)

The enterprise DCF value an asset as its “present value of the expected cash flows generated by the same asset in the future, discounted at a rate that reflect the risk and the way that asset was finance” (Damodaran, 2006). This model is used when the capital structure is expected to maintain stable.

The APV is used when the “capital structure is expected to change significantly since this model values the operations cash flow into two components: the value of operations as if they were finance only by equity and the value of the tax shields that come from the debt financing” (Goedhart, Koller and Wessels, 2005).

The equity value of a company can be obtained from two possible ways: “1) through the enterprise DCF we value the company’s operations and then subtract the value of the debt or 2) we can value the equity cash flows. This second option is difficult to implement so most authors suggest the use of the first one” (Goedhart, Koller and Wessels, 2005).

So the enterprise DCF valuation is to value the entire business obtained by discounting the free cash flow to the firm (FCFF) at the weighted average cost of capital (WACC).

“The FCFF is the amount of cash that a company generate after a company paid all its expenses, taxes, changing in net working capital and investments in capital expenditures and that represents the cash available to all investors” (Goedhart, Koller and Wessels, 2005).

The capital expenditures (CAPEX) are the funds used by the company to invest in fixed assets to maintain or improve its operations.

The working capital needs is the difference between the current assets and current liabilities and tells us if the company have enough short term resources to cover its short term obligations.

WACC

The weighted average cost of capital represents the “required return for the equity holders and debt holders taking into account the proportion in which way the company is financed and embedded in this rate are the tax benefits of the debt.” (Miles and Ezzell, 1980).

$$WACC = \frac{E}{E+D} K_e + \frac{D}{E+D} K_D (1 - t)$$

E – Equity

D – Debt

K_E – Cost of equity

K_D – Cost of debt

t – Tax

None of the components of the WACC are directly observed so the need to use various models and assumptions to determine them.

Some authors have some concerns about the using of the WACC. Fernández (2011) point some mistakes that can happen since “the WACC is just the rate to discount the cash flows and in spite of being refer as a “cost of capital” this is not a cost. (...) The correct calculation rests on the correct valuation of the tax shields and this depends on the companies’ policy about debt and equity that it’s possible to predict the book value but less realistic the prediction of the market values.”

CAPM

The CAPM is a theoretical model that converts a stock’s risk into stock’s expected return. Uses “three variables to determine that: risk-free rate, the market risk premium (represents the expected return of the market over the risk-free rate) and the stock’s beta.” (Goedhart, Koller and Wessels, 2005)

“The Capital Asset Pricing Model is a powerful tool to predict about how to measure risk and the relation between expected return and risk as estimating the cost of capital for firms.” (Fama and French, 2004).

This model is the most common asset-pricing model. The other models include the Fama-French three-factor model and the arbitrage pricing theory (APT). The main difference between the three models is how they define risk. To CAPM the risk is the sensibility of stocks to stock market, to Fama-French model the risk is defined as the stock’s sensibility to the stock market, to a portfolio based on firm size and a portfolio based on book-to-market ratios; the APT is a model alternative to CAPM with a difference that it takes into account many independent macro economic variables (Goedhart, Koller and Wessels, 2005).

In spite of being the most used model, Fama & French (2004) state that “the CAPM has problems enough to invalidate most applications of it.” They defend that the CAPM can be taught as an introduction to fundamental concepts of portfolio theory and asset pricing however users should be warn about its problems.

The CAPM defend that the expected rate return is equal to the risk-free rate plus the security's beta times the market risk premium.

$$K_e = r_f + \beta_L(r_m - r_f)$$

r_f – risk-free rate

β_L – Stock's sensitivity to the market (Beta levered)

r_m – Expected return of the market

The risk-free rate and the market premium are common to all companies, only the beta varies across all the companies. It represents a stock's incremental risk to each investor that is defined by how much the stock covaries with the stock market.

Risk-free rate

According to Damodaran (2008) “the risk-free rate is the starting point for all expected returns models. (...) A rate to be risk free need to meet two conditions: first that no risk of default is associated with its cash flows and second that there can be no reinvestment risk in the investment.” The appropriate use of risk-free rate is to use a default-free (government) zero coupon rate and the maturity should be the same of the ones analyzed. In the case of valuations the ones used should be the long-term government bond rates default free.

Beta

The beta is the each stock sensitivity to the stock market that is estimated by regressing returns of a stock against the stock index, with the slope of the regression being the beta of that asset. The betas are used to help to calculate the expected return of an investor taking into account the risk taken for owning that asset. Damodaran (1999) says that “betas measure risk and have two basic characteristics: measure the risk added on to a diversified portfolio and the relative risk of an asset.”

$$\beta_L = \beta_u (1 + (1-t) (D/E)) - \beta_D (1-t) D/E$$

The measurement of the Betas has some specific issues such as: the choice of the market index (should be the same where the stock is traded), the choice of the time period (5 years) and the choice of a return interval (monthly). Due to this fact is important to make some adjustments to the regression beta (Damodaran, 1999).

The beta of debt is zero due to the fact that the firm's risk is borne by the stockholders and their remuneration depends on the company performance. The firm has an obligation with the debt holders so the payments don't depend on the performance but in the terms of the contracts. In addition to this in case of bankruptcy the debt holders are the first to be pay. For these reasons the beta of the debt is zero most of the times (Fernández, 2003)

According to Goedhart, Koller and Wessels (2005) using the CAPM, "the stock's expected return is affected by the beta that represent how the stock and the market move together." To estimate this value we measure the regression of the stock and market, and after that, due to the problems stated before, improve the estimate by using industry comparables and improving techniques getting to the raw beta.

Market Premium

Market premium is the difference between the market's expected return and the risk free rate. Damodaran (2013) states that "market premium are central component in risk and return models and essential estimating costs of equity and capital when performing a valuation."

There are lot of economic factors of a market expected return such as investors risk aversion, information uncertainty and perceptions of macroeconomic risk. Damodaran declare that there are three possible approaches to estimate this value: through historical returns, survey approach, where investors and managers are asked to assess the risk premium and the implied approach, where the premium is estimated through a forward-looking of current equity prices or risk premiums in non-equity markets.

"The risk premium reflect judgements on how much risk can we see in the market/economy and the price attached to that." Goedhart, Koller and Wessels (2005) defend that there is not a single model for estimating the market risk premium that has gained universal acceptance and that there are other models to calculate it.

They also believe that 4.5 or 5.5 percent is an appropriate range based on historical market risk premium.

However a recent study of Fernández (2013) where finance and economics professors, analysts and managers of companies were questioned about the Market risk premium used in different countries we get new conclusions. In the case of Portugal the MRP in 52 surveys was on average 6.1% and with a median of 5.9%.

Country Risk Premium

When the risk free rate used is not the country bond due to the rating not being AAA (i.e. the country bonds are not default free) and so the one used is the bond from other country, Damodaran (2008) defends that it is needed to add a country risk premium to the cost of equity because investors require a greater return when investing in that countries than in others with better ratings. Damodaran assume that a “company in a country is equally exposed to country risk”:

$$R_e = R_f + \text{Country risk premium} + B_L (r_m - r_f)$$

Or that “company’s exposure to country risk is similar to its exposure to other market risk”:

$$R_e = R_f + B_L (r_m - r_f + \text{Country risk premium})$$

The country risk premium can be calculated as the difference of the country long term bond less the default free bond used before. Is the increment in interest rates that investors expect to invest in one country due to some factors such as economic and political environment that would not be facing in other standard countries (i.e. Germany, US) and it is higher in developing countries than in developed countries.

Example: CRP= Portuguese bond 10y (Ba3) – German bond 10y (Aaa)

Cost of Debt

The cost of debt is one of the components to calculate the discount factor (WACC) to get the free cash flows of a company and represents a rate agreed with debt holders as a return for capital loaned. To estimate the cost of debt, use the yield to maturity of the company’s long-term, option-free bonds. The yield to maturity is an expected return because it is a promised return on the company’s debt.

For estimation the cost of debt is most suitable the yield to maturity for companies with investment grade debt and with that debt rated at BBB or better (Goedhart, Koller and Wessels, 2005). For debt below investment grades, using the yield to maturity as cost of debt can cause a significant error.

If the company doesn't have market rates, the analysts need to estimate a rate for the debt that is a straightforward calculation of the current market rate that the firm is paying for its debt. (McClure, 2009).

Damodaran (2010) states that there are three ways of estimate the cost of debt for a firm:

- If the company has traded bonds outstanding, the current market interest rate on the bond is used as the cost of debt.
- If the firm has a bond rating from an established ratings agency (Moody's, S&P) we can estimate a default spread based upon the rating
- If the company is unrated and has debt outstanding, we can estimate the rating for the firm based on its financial ratios. Based on the interest coverage ratio (EBIT/Interest expenses) of the firm. Higher values will have better ratings.

To estimate the cost of debt to the two last ways we need to add to that default spread the risk free rate and that value will be the cost of debt for the company.

Cost of debt = risk free rate + default spread

Damodaran gives us one way to get the default spread and rating of accompany through the Interest Coverage Ratio:

If interest Coverage ratio is:			
greater than	≤ to	Rating is	Spread is
12.5	100000	Aaa/AAA	0.40%
9.5	12.499999	Aa2/AA	0.70%
7.5	9.499999	A1/A+	0.85%
6	7.499999	A2/A	1.00%
4.5	5.999999	A3/A-	1.30%
4	4.499999	Baa2/BBB	2.00%
3.5	3.999999	Ba1/BB+	3.00%
3	3.499999	Ba2/BB	4.00%
2.5	2.999999	B1/B+	5.50%
2	2.499999	B2/B	6.50%
1.5	1.999999	B3/B-	7.25%
1.25	1.499999	Caa/CCC	8.75%
0.8	1.249999	Ca2/CC	9.50%
0.5	0.799999	C2/C	10.50%
-100000	0.499999	D2/D	12.00%

Figure 1 – Small size Companies rating

Tax Shields

When calculating the free cash flow the analysts should be aware of “the tax shields that arise from the tax benefits of paying interests that are deductible to companies’ results. (...) So the net cost of debt should be the interest paid less the tax saving resulting from this payment” (McClure, 2009).

“The tax shields must be taken into account in a valuation and through the DCF they are value as part of cost of capital, reducing it. We should calculate the marginal tax rate to account for the timing of future tax payments based on the company historical analysis” (Goedhart, Koller and Wessels, 2005).

Growth rate

There are three basic ways of estimating growth: looking to the company's historical growth, trust equity research analysts that study the industry and company and estimate the growth for the company, or estimate the growth from a firm's fundamentals such as investments of the company that change growth patterns (Damodaran, 2002)

The growth rate calculated for the revenues is based on forecasts using the historical performance of the company and the industry, being aware of the existence of cyclical companies.

“The long term growth rate calculated for perpetuity is equal to the real GDP growth estimated for the respective years” (McGowan, 2012).

Terminal Value

Since it is impossible to estimate the cash flow forever, the DCF valuation stops the estimation of cash flows in sometime in future and computes a terminal value that represents the value of the company for that point. Damodaran (2009) assumes that there are three different ways of get this value: in the first we assume that “the company liquidate all its assets in terminal year and the value will be the amount of money that the company have for the sale of the assets”. In the second and third Damodaran assumes that the “company value as a going concern for the time of calculate the terminal value”. One applies a multiple to estimate the value and other assumes that the cash flows will grow at a constant rate forever. This last one is the most commonly used when valuation companies and the analysts should have the capacity to identify the stage of the company and industry growth.

2.2.2. APV

It is also a DCF method to value companies but “is less prone to errors” (Luehrman, 1997) and analyzes the financial results separately. This method is used over the WACC when companies plan to change their capital structure.

This method also values the cash flows that the company generate but the difference is that it values them as they were completely financed with equity. According Damodaran (2006) the APV approach values the firm in 3 steps: first “estimating the value of the firm with no leverage”; second “the present value of the interest tax shields”; and third “the effect of the borrowing amount in the probability of the company go bankrupt and the expected cost of bankruptcy”.

The first step, as we already stated, is value the expected free cash flow to the firm but the difference to the WACC approach is that those values are discounted at an unlevered cost of equity.

The unlevered cost of equity is computed in this way (Damodaran 2005):

- Unlevered cost of equity = risk free 0rate + Beta unlevered * (Market risk premium)
- $B_U = \beta_L / (1 + (1-t) (D/E))$

According Goedhart, Koller and Wessels (2005) the second step is to value the interest tax shields. We forecast and discount capital structure side effects, the future interest tax shields from a given level of debt.

- Interest tax shield = Tax rate * Interest rate * Debt
- Present Value ITS = $\sum (ITS_T / (1+Kd)^t)$

The value of the tax shield is the present value of the interest tax savings, discounted at the cost of debt.

The third and last step is to evaluate the effect of the specific level of debt on the default risk of the company and on the expected bankruptcy cost. To estimate the probability of default, Damodaran (2006) suggest that the best way is through the bond rating.

If the companies have public traded bonds it is easy to get the bond rating, but if not, we should do as we have already seen, through the companies' interest coverage ratio.

If interest Coverage ratio is:				Bankruptcy probability
greater than	≤ to	Rating is	Spread is	
12,50	10000	Aaa/AAA	0,4%	0,07%
9,50	12,4999	Aa2/AA	0,7%	0,51%
7,50	9,4999	A1/A+	0,9%	0,60%
6,00	7,4999	A2/A	1,0%	0,66%
4,50	5,9999	A3/A-	1,3%	2,50%
4,00	4,4999	Baa2/BBB	2,0%	7,54%
3,50	3,9999	Ba1/BB+	3,0%	10,00%
3,00	3,4999	Ba2/BB	4,0%	16,63%
2,50	2,9999	B1/B+	5,5%	25%
2,00	2,4999	B2/B	6,5%	36,80%
1,50	1,9999	B3/B-	7,3%	45%
1,25	1,4999	Caa/CCC	8,8%	59,01%
0,80	1,2499	Ca2/CC	9,5%	70%
0,50	0,7999	C2/C	10,5%	85%
-100000,00	0,4999	D2/D	12,0%	100%

Figure 2 – Small size companies Bankruptcy probability

The bankruptcy cost can be estimated from empirical studies that analyzed the magnitude of these costs in actual bankruptcies. Schuermann (2004) tells us that “the best way to set the cost of bankruptcy is through an industry average on a percentage of the value of the company not recovery in case of bankruptcy”. Using a study from Acharya, Bharath and Srinivasan (2003) where it is studied the average recovery of the company value (cents on dollar) in bankruptcies by industry; we can define the bankruptcy costs depending on the company industry and company value.

Industry	Avg. Recovery (cents on dollar)	Industry	Avg. Recovery (cents on dollar)
Utilities	74	High Tech./Office Equip.	47
Insurance and Real Estate	37	Aerospace/Auto/Capital goods	52
Telecommunications	53	Forest/Building prod./Homebuilders	54
Transportation	39	Consumer/Service	47
Financial Institutions	59	Leisure time/Media	52
Healthcare/Chemicals	56	Energy & Natural Resources	60

Figure 3 – Bankruptcy costs

All this stated and defined, we get to the final enterprise value:

$$\text{Enterprise Value} = \text{Value of unlevered firm} + \text{Present Value Interest tax shields} - \text{Bankruptcy costs}$$

2.2.3. Relative Valuation

The relative valuation or multiples valuation is based on “value assets based on the prices of their similar in the market” (Damodaran 2006). Analysing the companies multiples is “useful due to the fact that analysts can compare the company value with similar companies, but also compare the values obtained with other valuation models performed” (Goedhart, Koller and Wessels 2005)

According to Damodaran (2006) there are three essential steps to perform a Relative valuation: 1st is finding “comparable firms that are priced in the market”, 2nd is “scaling the market prices to a common variable”, comparing the identical firms and converting the market values of equity in multiples that enable comparison between companies and 3rd is “adjusting the values/multiples for differences across the assets” (firms).

Choosing the peer group and the firms similar and that will be compared with the company that we are valuing is also a critical part of the multiples valuation. According to Goedhart, Koller and Wessels (2005) to find the peer group “the choice should be based on similar prospects for ROIC and growth of companies in the same industry and operating in the same geographical area”.

There are lot of different multiples and their use depends on industry and firms characteristics. Since we are interested in valuing the company we will use multiples based on the company’s value. We will use these multiples due to the fact that the Price to Earnings multiples have two major flaws: they are affected by the capital structure and because they are based on earnings that include non-operating items and so these multiples can be misleading. It’s very important to refer that all these multiples are forward-looking due to both principles of valuation and empirical evidence recommend us to use forecasts instead of historical data. Forward-looking multiples are more accurate and the average prediction error fell when compared with historical. (Goedhart, Koller and Wessels, 2005).

Choosing the right multiple to use it is many times associated with the type of industry that the analysts are studying. “In the industry of the pulp paper (heavy infrastructures business) one of the most use multiple is the EV/EBITDA” (Fernández, 2001)

EV/EBITDA = Enterprise Value / Earnings before Interest, Tax, Depreciation and Amortization

This multiple treats different companies as having same level of cash and cash equivalents such as debt, tax, interests, depreciation and amortization. “EV/EBITDA is particularly useful for industries in which cash flow is important and capital expenditures are large and irregular.” (Chan and Lui, 2010)

This multiple is also very useful since it has as fundamentals to determining it the expected growth, reinvestment rate, risk, ROC, tax rate that comparing firms in the same sector we can see which ones are affecting the multiple and reflect the assumptions and judgements made. (Damodaran, 2006)

One of the most used multiples is the PER – price to earnings ratio and according Damodaran (2003) “there are a number of variants that we need to take into account when using this multiple”.

First see if the price is defined as the current price or the average price for the year and second check if the earnings per share are the ones in the most recent financial year, in the last 12 months, forecasted for the next year or forecasted in a future year.

The PER is highly influenced by growth, risk and reinvestment needs, with high growth firms having higher PER, high risk companies having lower PER and high reinvestment needs having lower PER than firms with opposite situations. The financial structure also has a considerable impact in the ratio for the simple facts that companies with high level of debt, has higher financial costs and so lower earnings increasing the ratio.

High values of PER suggests that shareholders are expecting higher returns in the future when compare with companies with low PER.

2.2.4. Options theory

Damodaran (2002) declares that in the recent years some theories have raised from the fact that discounted cash flows models do a poor job capturing the value of options settled in many companies. “The options need to be valued since their value can be substantial.” An option provides the holder the right to buy or sell (call or put option, respectively) an underlying asset at a fixed price (strike price) at or before the expiration of the option.

The determinants of the Option value are the current value of the underlying asset, the variance in value of the underlying asset, the dividends paid on the underlying asset, the strike price of option, the time to expiration on option and the riskless interest rate corresponding to the life of option. There are two main models to value options: the binomial model and the Black-Scholes model. They are not alternative but complementary.

The first is based on a formulation for the asset price process over time that can decrease or increase value using different probabilities for the different moves.

The second requires a larger number of inputs and isn't an alternative to the binomial but a limiting case of the binomial. This model is used when valuing options that can be financial assets or real options such as projects. Damodaran (2002) states that "there are three options in investment projects: the option to expand, the option to abandon and option over product patents and all of them add value to the company."

However this model is quite hard to use due to the fact that most managers do not identify those options and even if they were identified it would be very difficult to value it. "This valuation is only possible when these options really exist and are identified" (Goedhart, Koller and Wessels, 2005). This is a quite new valuation model and there are a few analysts using the model.

2.3. Valuating cyclical and commodity companies

Damodaran (2009) defend that "Cyclical and commodity companies share a common fact that their value is very dependent of the macro variable that in both cases the well going of the economy affects positively the firms." Economies move in cycles and there is a big concern when valuing companies that are influenced by that. The earnings and cash flows reported depend on where we are in the cycle. Cyclical companies in relation to the economy move up and down with it. There are two ways to categorize cyclical companies: based on historical performance of the industry or based on the company history allied to the economic performance.

"Companies in the paper industry are largely influenced by the industry factors, especially for the related capacity" (Goedhart, Koller and Wessels, 2005).

The cycles have a great impact on valuation with macro economic factors as the main characters making the task harder to complete. Damodaran (2009) consider that there are “three ways to detect where we are in the cycle that is very important to the valuation process: through profitability measures, through reinvestment measures and through debt ratios and costs of funding.” Analysts when valuating cyclical companies leave their views behind and just focus on analysing the company and industry to understand in which point in the cycle the company is.

When studying it Damodaran (2009) tells us that there are two possible ways: or analysing the economic data of last years and try to identify the point in the cycle that the industry is and forecast from there if the company is moving up or down; the other option is through the normalization of the values, it means, looking for the previous years earnings and cash flows and then look for a “smoothed” number and define a normal value.

Goedhart, Koller and Wessels (2005) defend other approach based in two-scenario for valuing cyclical companies: “construct and value the “normal cycle” scenario using information of past cycles and construct and value a new trend-line scenario based on the recent performance of the company”. After that, analysts should develop the economic rationales for both approaches considering the different macro factors and attach probabilities to both scenarios and calculate a weighted value with both options.

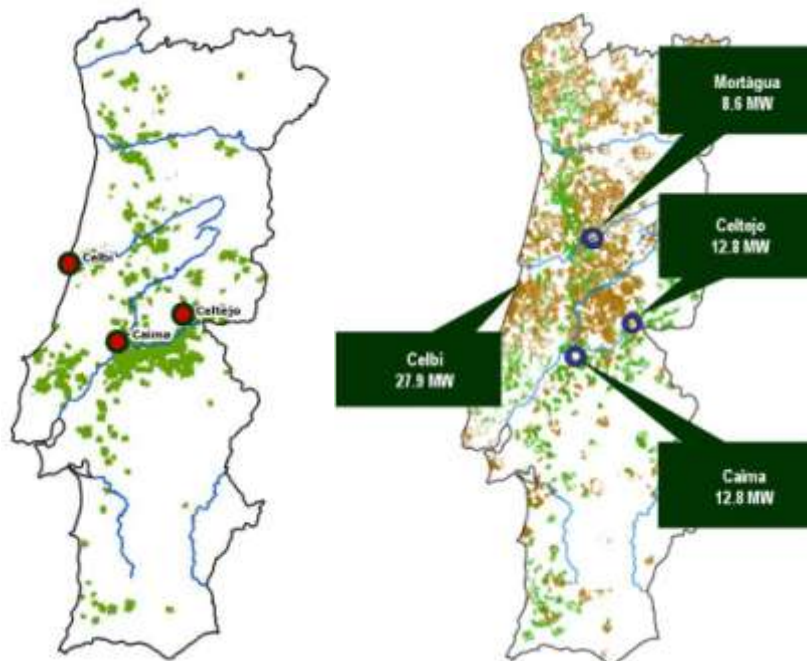
When we are valuing companies from cyclical industries it becomes very important determine scenario analysis and simulations with the different possible behaviours of the market and macro economic factors.

3. THE COMPANY

Altri SGPS, S.A. was founded in 2005 from a spin-off of the industrial assets of a holding group with several businesses - Cofina group. The company held investments in paper, pulp, steel and storage systems until June 1, 2008, date of the demerger of the business of steel and storage systems. That reorganization allowed the company to focus on a business transparency strategy giving more visibility to each area and increase the market perception of value.

Altri is an industrial conglomerate operating in wood pulp production, forest management and in renewable energy. The company is a European reference producing pulp and eucalyptus pulp.

The company has 3 factories in Portugal (Celbi, Caima and Celtejo) which produce eucalyptus pulp being all recognized by their efficiency and quality. In 2013 the company reached about 973 thousand tons of bleached eucalyptus pulp of installed capacity and exported almost 85% of its production to the European market.



Source: company reports

Figure 4 – Altri mills locations

The Company's factory Caima is the one owned for a longer time, having it since before the spin-off. The company acquired 95% of Celtejo in 2005 for 38 million Euros and in 2006 4.45%. In the same year the company bought Celbi in a transaction of approximately 430 million Euros. These facts and by developing a set of expansion projects, Altri reinforce its position in markets where the company operate.

The Celbi and Caima mills only produce Bleached Hardwood pulp but Celtejo mill has the capacity to produce BEKP but also to produce NBSK. However since 2012 the company has a strategic focus in only to produce BEKP for the Celtejo and Celbi mills and dissolving pulp for the Caima mill after a conversion project that will enable the mill to produce that.

Mills	Celbi	Celtejo	Caima
Capacity (th. tons)	BEKP	BEKP	DP
2014	667	220	105
2015	700	220	105

Source: company reports

Figure 5 – Altri's production

Another important business sector is the forest management. The company has more than 84 thousand hectares under company's management. The main goals of the company are the forest protection, protect biodiversity, research, development and manage sustainable forests which can increase their productivity in terms of respect for the environment. Altri's strategy focussed on integrated forest management is based on forest optimization, ensuring a full use of all its components: pulp, black liquor and forest wastes.

In 2006 the company invested 7.5 million Euros in 50% of a joint venture with EDP with focus on biomass power production called EDP Bioeléctrica. The energy from the biomass is obtained through bark, the branches and forest waste produced by the company. This company has licenses to produce electric energy having four centrals of biomass power production with an annual production over 750 GWh and avoiding the emission of 465 thousand tonnes of CO2 to the atmosphere per year. Through the normal operation of the mills Altri produces 365 GWh of electric power through cogeneration per year.

The company has the next structure:



Source: company reports

Figure 6 – Altri’s Structure

Analyzing the company’s behaviour in the stock market exchange and looking at the figure 7 we can see that the company when entered in 2005 had fast increase in its share value started to value 0.24€ and after two years the value was already around the 3€ representing an appreciation of 277% of the initial value. With the economic crisis the value decreased dramatically to 0.73€ in 2009 meaning a depreciation of 77% compared with the maximum value performed by the stock 2 years before. The value of the each share increased in 2009 and 2010 due to the expectations of economic recovery which didn’t happen and caused a decrease in the periods immediately after. Since 2012 the share value is recovering and increasing its value.



Figure 7 – Altri’s Stock price behaviour

When compared the company's performance with the Portuguese stock index PSI-20 we clearly see in the figure 8 that since the company entered in the market the company's stock is creating much more value than the index.

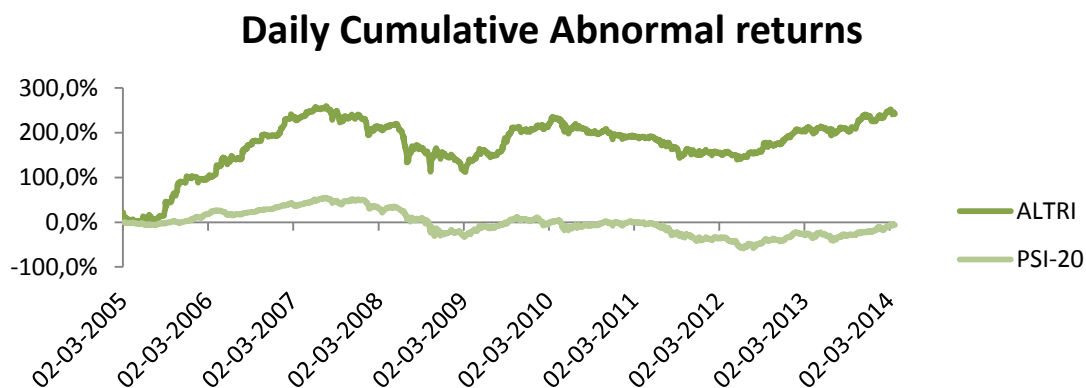


Figure 8 – Altri vs. PSI-20 abnormal returns

The world economy is going into a complicated process characterized by good levels of growth in Asia but levels of instable and unpredictable growth in the major economies mainly in the Euro zone.

Altri production is mostly exposed to the Euro zone economy (85% of the sales for Europe and 6% for Portugal) but also to the Asian markets (8% of the sales). In the sales by use the company has an increasing exposure over the years to tissue and to dissolving, this last one due to the fact that the company converted part of its production to start to sell it and this is justified by a continuing growth in demand of this product. On the opposite way we have the Printing and Writing sales decreasing due to a decrease use of paper worldwide. The pulp paper industry has a cyclical behaviour that makes the management of its companies a challenge.

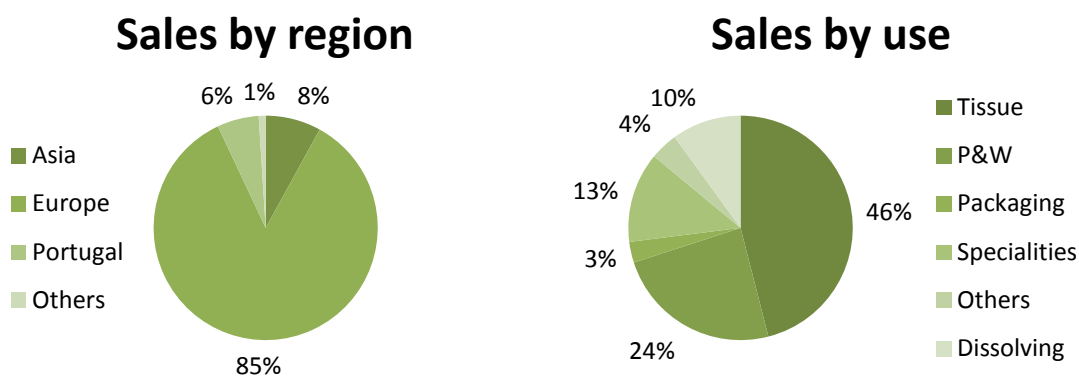


Figure 9 – Sales By region and by use

To respond to all this industry challenges, Altri has developed a strategy of diversification of geographic markets focused in the exposure to high-growth markets where the company wasn't present, with special focus in Asian markets and more specific in China. The company is also converting the Caima mill's production into dissolving pulp due to its specialities compared with BEKP type of pulp. Altri is developing projects enhancing operational efficiency to reduce unit costs of production, namely the variable costs associated with the consumptions. The Investments to increase production capacity of Celbi and Caima will make them produce 700 and 105 thousand tons of BEKP and DP by the end of 2014 beginning of 2015.

The company's strategy is also based in reducing the debt level through the generation of cash flows from the operating activities to decrease its high level of leverage.

4. INDUSTRY ANALYSIS

Macroeconomic

The global economy suffers since 2008 a generalised crisis with repercussions in all levels. The economic environment suffered a slowdown in growth, raised of unemployment, lack of confidence of the markets in leveraged economies and difficulties in accessing credit.

In 2010 Portugal had a positive growth with the real GDP of almost 2% and in the following years, 2011, 2012 and 2013 Portugal showed a decline of the real GDP every year (2011: -1.3%; 2012: -3.3%; 2013: -1.3%). The austerity policy implemented by the Portuguese government as the adjustment program of the economy made huge cuts in the state budget, decreasing the public demand and increasing the taxes making a decrease in the private demand. However in the last quarter of 2013, and for the first time since 2010, Portugal had an increase in the real GDP of 1.7% according to the Bank of Portugal. This improvement in the Portuguese economic situation was mainly because of the increasing of the private consumption and an increase of the exportations. The European Commission forecasts that the Portuguese economy will continue to growth with a GDP growth of 0.8% in 2014 and 1.5% in 2015.

In the last years the Euro zone showed negative growth but slighter than Portugal, with the last quarter of 2013 also having positive growth but lower than the Portuguese (0.5%). The European commission forecasts GDP growth for the next year (1.2%). When compared with the Euro zone, the US GDP is expected to grow 2.9% already in 2014.

The Portuguese inflation rate in 2013 showed low levels (0.4%) and the European Commission predict that this value will slightly increase in the next years (2014:0.8% and 2015:1.2%)

After showing the highest value of the Portuguese bond rates in January 2012 of medium and long term, from there those values started to decrease and in the current year (2014), Portugal is showing the lowest values since 2010, another indicator of the Portuguese economic recovery.

Additionally the currency exchange rate of the Euro – US dollar is expected to have a more stable behaviour associated with the context of the economic expectations described before. This currency exchange has a relative impact in the company's business.

The Pulp & Paper industry

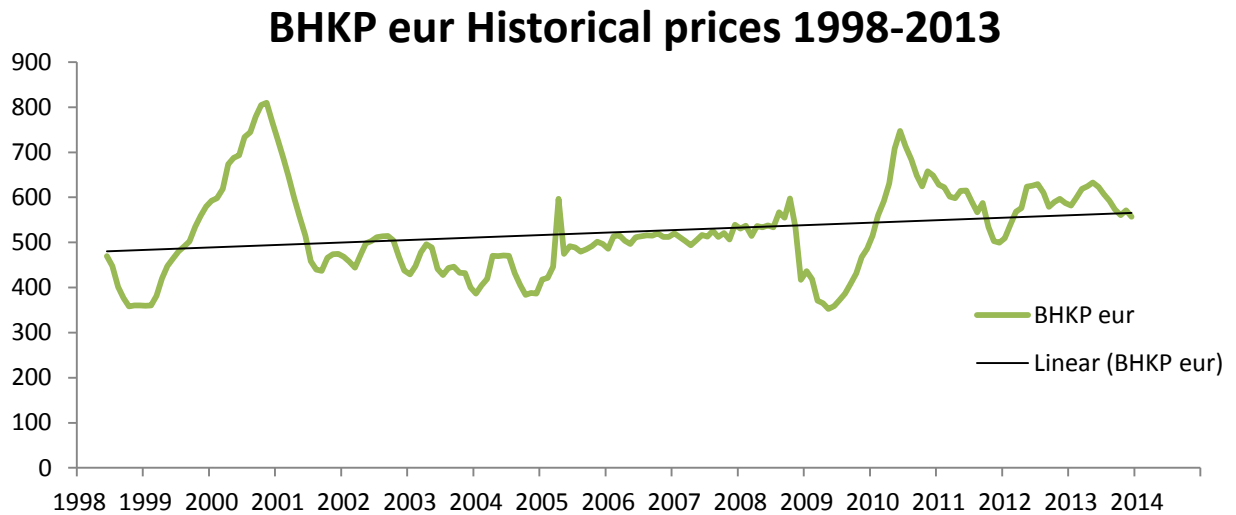
Altri operates in the pulp industry being the BEKP – bleached eucalyptus kraft pulp - the most produced one (type of the BHKP – bleached hardwood kraft pulp) and also sell Dissolving pulp. Altri only produce pulp and doesn't produce any type of paper. The types of pulp that Altri produces are ones of the most demanded types of pulp and they are very versatile fibres used for almost all paper applications, including printing and writing, décor, tissue and specialty papers.

In the last year the pulp demand was stronger than expected due to the Chinese demand. It's true that the demand decrease in the US and Europe, but it had a strong increase in China (more than expected) and a continued growth in the emerging markets

With the world economy already improving in 2014 is expected that it will continue in 2015 and during the following years. The pulp production is expected to grow, after three years of fallings, due to diverse factors:

- China pulp imports in 2013 were stronger than expected and is predictable that it will continue to increase.
- Emerging markets will continue to grow at a considerable pace and it's normal to continue to increase the demand of pulp and paper
- USA and Europe economy recovery and private consumption increase will also increase the pulp and paper demands.

The Pulp & paper industry is considered a cyclical industry owing to a price and demand variation related most of the times with the economy course. We will analyze the price of BHKP (bleached hardwood Kraft pulp) since this is the type of pulp that Altri produces and sells the most (nowadays is almost all the production), the price variation in USD and EUR and analyse the greatest variations in the last 15 years.



Sour: FOEX

Figure 10 – BHKP weekly prices from 1998 to 2014

We notice that the price of BHKP has a quite stable behaviour however we can see that there are there moments where great and fast changes occur.

- 1999-2002 – the pulp market started the new millennium in an upbeat mood that was initiated in 1999 and achieved a maximum price in November 2000 since 1995. From that point the prices decreased month after month until 2002. The increase of the prices was mainly due to technological advance in the area and the expectations of great economy growth. The decrease in the prices was sustained by underperform of the economy compared with the growth expectations.
- 2008-2010 – with the bankruptcy of Lehman Brothers and consequently financial crisis in 2008 the prices of the BHKP began to decrease getting to the lowest value in 2009 since 1999. From that point the prices raised again mainly because of the low supply worldwide (the earthquake in Chile, one of the biggest producers worldwide, made the prices hit a 15-year high) and because of the expansion of the China and emerging markets.

- 2011-2012 – the deterioration in markets conditions and slowdown in demand declined the prices. The main factor was the aggravation of the euro zone macroeconomic situation, which decrease the demand and increase the instability in the exchange rates. From 2012 the prices raised and entered a period of stability supported by the slight recovery of the world economy but mainly because of the yearly growth of the Chinese demand.

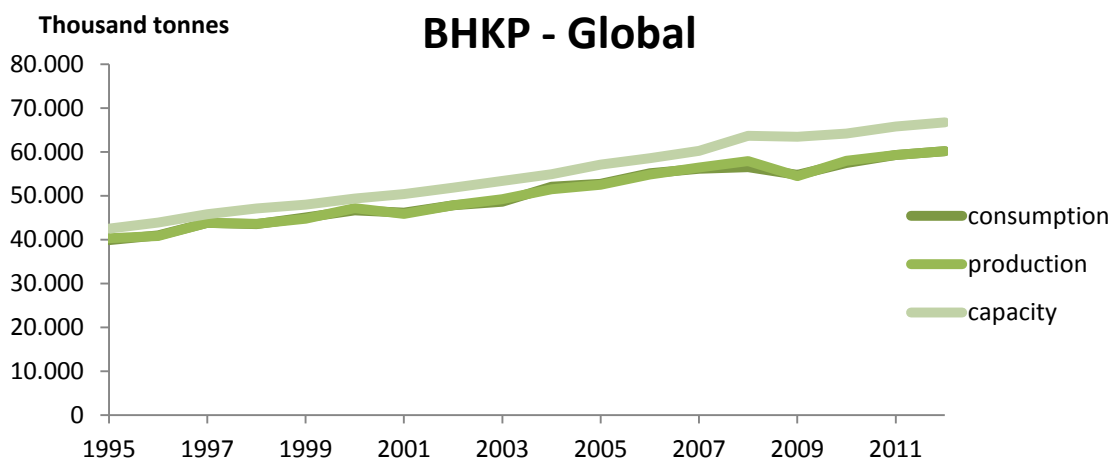
The Pulp and paper industry are cyclical and the explanation is simple: economic growth leads to higher paper consumption and demand leading to high sales, high prices and high profits for companies. The firms invest the money in new capacity but by the time that the new capacity is ready (five years later) the economic growth has slowed. When the market has a large supply of pulp, the prices collapse.

China is one of the major producers and the main player of demand of pulp and so they focus on putting the price as low as possible. However the Chinese pulp production capacity is quite low compared with the consumption. So the price is influence by the economy course but also for the capacity of the Chinese to cover its demand with their production. When China needs to import pulp the prices tend to increase. The actual Chinese government is focused in reducing the pulp production as an environment protection measure that will lead to an increasingly importation of pulp.

In Europe due to the economic crisis in the last years the consumption of pulp decreased making European producers export most of their product to other markets, mainly the Asian market. However more recently we have a reversal of the situation as a result of the economic recovery that is increasing the pulp demand over Europe.

The supply in the pulp industry is highly correlated with the demand. As we can see in the figure 11 the production of pulp has almost the same behaviour of the consumption of pulp meaning that companies instead of producing all their capacity, they produce depending on the demand. The production of pulp is according to the expected demand of the same.

It's expected that the demand of BEKP in the West Europe will increase in the next years and China to continue to grow at the same pace. The prices are expected to have a calm and stable behaviour, as a result of the last years events (crisis made huge variations in prices), following the same flow of the economy and small variations in the price will be associated with the demand and supply of the market.



Source: RISI

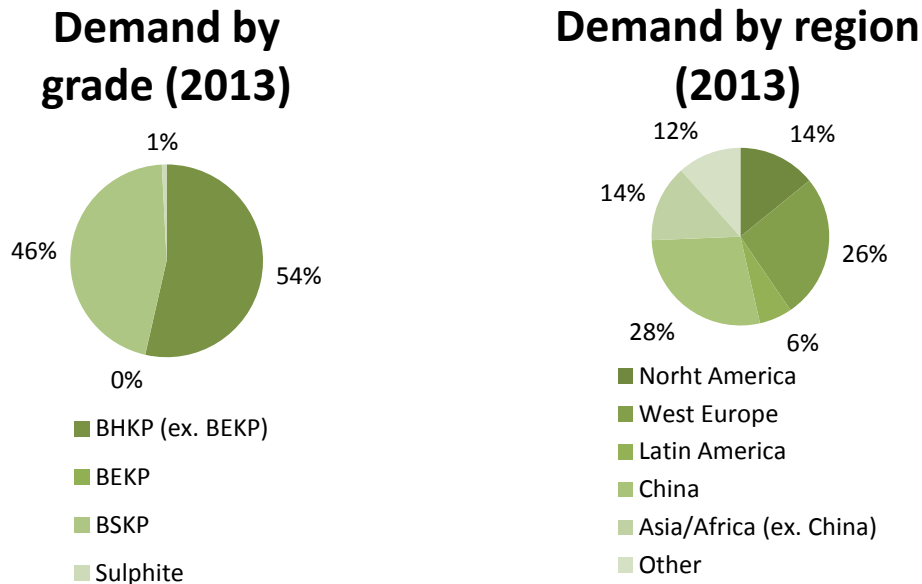
Figure 11 – BHKP Global demand, production and capacity

Analysing the figure 11 we also notice that the capacity is very close to the production, showing us that companies increase their capacity based on the market behaviour and that they seek for low volume of inventories since companies have the production very close to the consumption instead of the production capacity

Demand Analysis

The demand of the bleached chemical pulp has been increasing over the last years reaching 52.580 thousand tonnes in 2013 and it is expected to continue to increase mainly because of the Chinese demand that was responsible for almost half of the global demand growth in the last 5 years and is growing at a higher rate than the rest of the world. The West Europe and China were in 2013 responsible for more than half of the global demand, however both have different expected behaviours since the demand in West Europe is expected to increase at a much slower pace compared with the global demand.

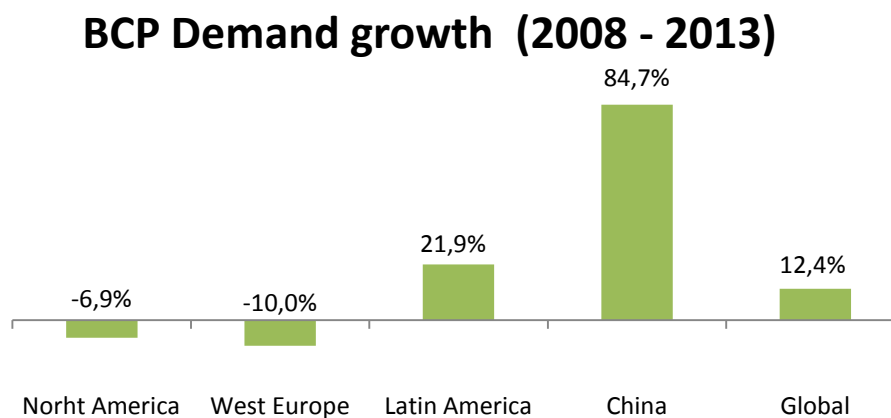
Analysing the demand by grade we observe an increasing demand in BEKP that in the last years has been the grade that has grown more. The BEKP is already representing 31% of the global demand and this value has the prospective to continue increasing.



Source: Hawkins Wright

Figure 12 – Global demand by grade and by region

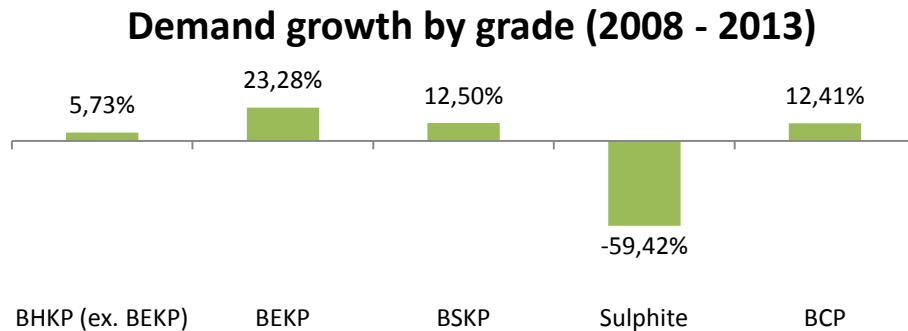
As we have said before the demand has increased over the last years and it was supported mainly by the demand in China encouraged by a continued growth in tissue production and P&W. Only between 2010 and 2012 the Chinese mills of P&W had increased their capacity for more 6.910 thousand tonnes mostly for the production of UWF and CWF.



Source: Hawkins Wright

Figure 13 – BCP demand growth by region (2008-2013)

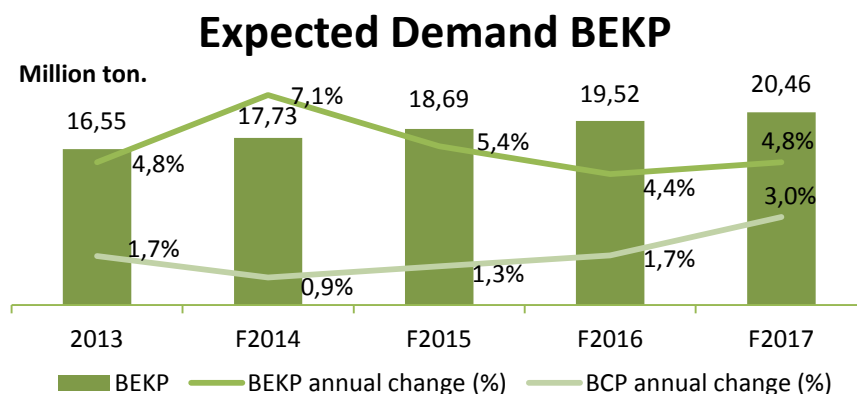
Analysing the type of pulp most demanded and with higher growth rates, we clearly see that the BEKP is yearly gaining a leading role in the industry. The strong demand of BEKP is closely linked to the supply that has been increasing due to the wide range of possible uses of this type of pulp, which makes it very attractive in the market.



Source: Hawkins Wright

Figure 14 – Demand growth by grade (2008-2013)

Considering the forecasts about the demand in the figure 14 we can conclude about what we can expect in the next years. First we notice that both BCP and BEKP will continue to change positively and that BEKP is growing at higher values than BCP increasing even more the attractiveness of the product and its marketing. The BEKP demand is expected to grow more than 4% yearly for the next 4 years which is higher than the rates for all the pulps together. These forecasts are strongly related with the increasing of the global capacity of BEKP and to the Chinese demand of BHKP that just in the year of 2014 is expected to account 104% of the demand growth. Until 2017 the Chinese economy will presumably be responsible for almost 80% of the YOY global growth in demand of BHKP.

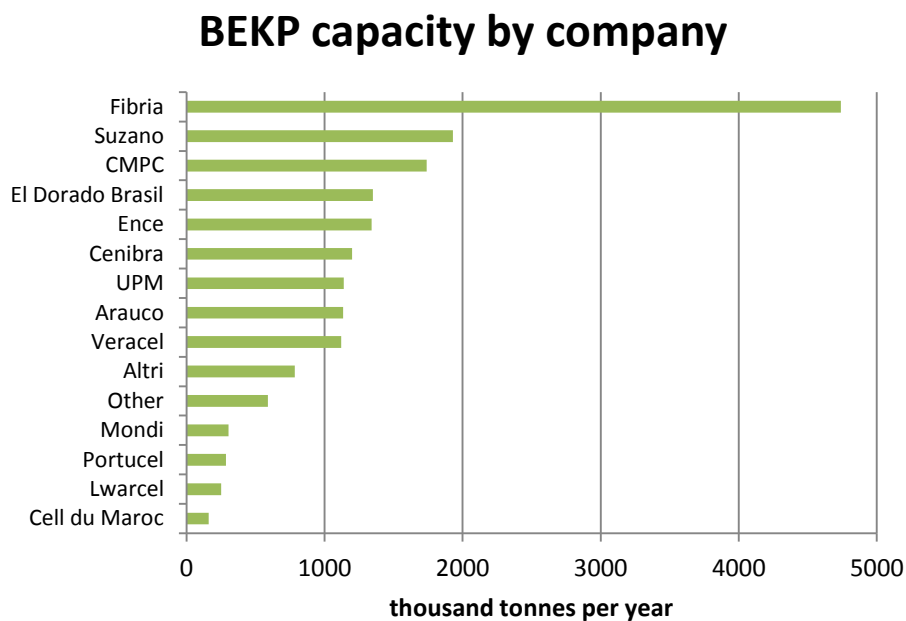


Source: Hawkins Wright

Figure 15 – BEKP expected demand and growth (2013-2017)

Supply analysis

The pulp market is composed by a group of companies producing different types of pulps. For the Altri case we will just analyze the BEKP producers, due to its growing importance in the sector - is the pulp grade that has grown more, is the one expected to continue to grow at higher values than all the other grades and although the other BHKP being increasing, BEKP is considered the most attractive pulp grade and the one registering the higher increase in capacity. In the figure 16 we have all the BEKP capacity by company.

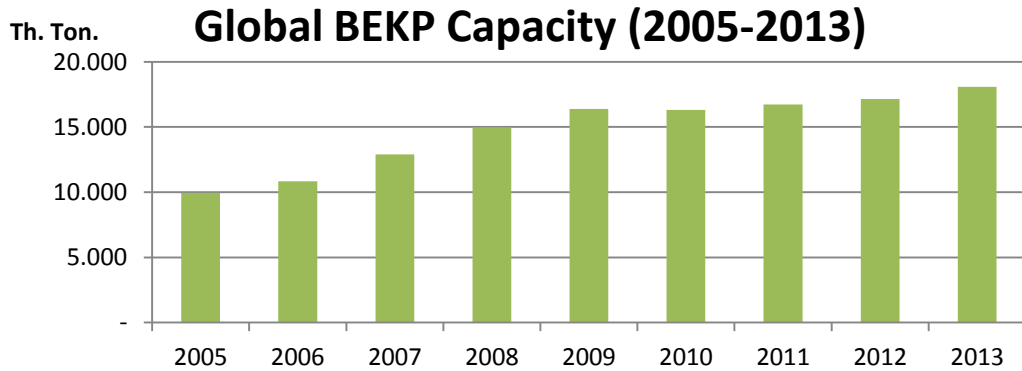


Source: Hawkins Wright

Figure 16 – BEKP capacity by company (2013)

We will see that the global BEKP capacity has increased but only the Iberia and Latin America mills contributed for that, since all the other mills located in Norway, Oceania and Africa/Asia had decreased their capacity.

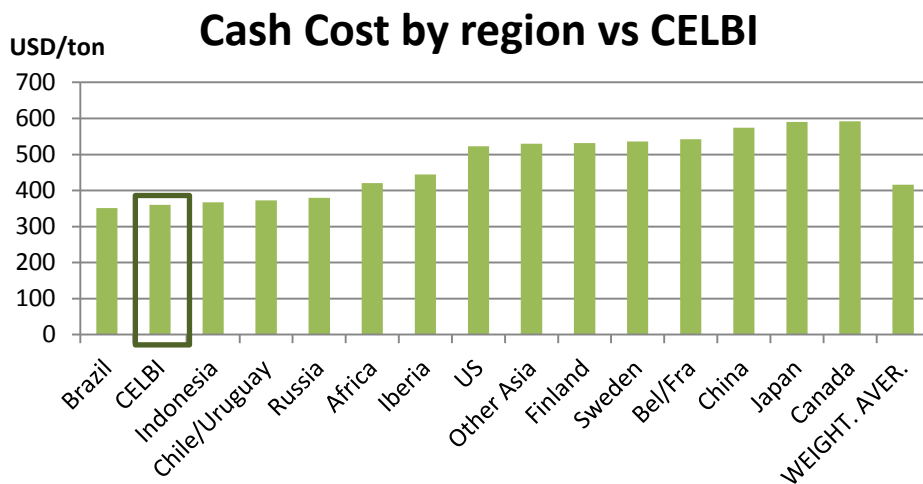
The pulp capacity is very sensitive to price and the prices are very volatile. High prices would certainly result in a restart of off-production mills. In the same way high cost mills may be forced to close temporarily or permanently for low prices.



Source: Hawkins Wright

Figure 17 – Global BEKP capacity (2005-2013)

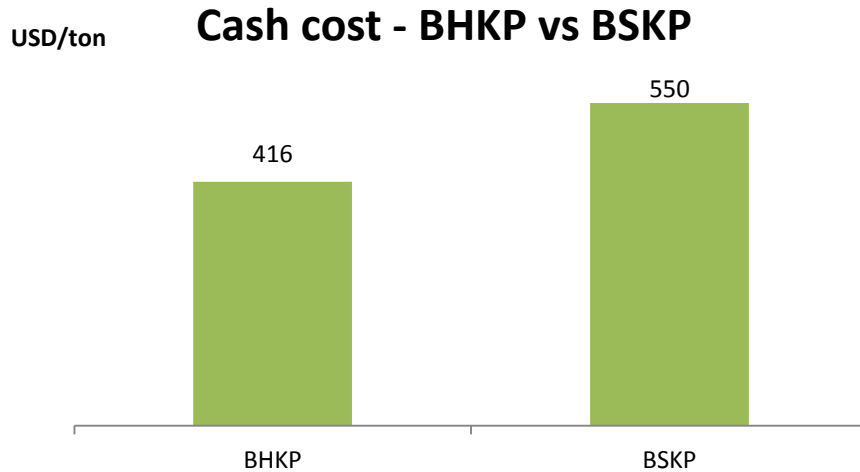
As we can see in figure 18 Brazil, Chile, Uruguay and Iberia have quite low cash cost that give them the competitive advantage to continue to increase their capacity when compared with other regions. In the same chart we have the Cash cost per tonne of the Altri mill, Celbi, that is the largest producer mill of Altri and also one of the more effective, with lower costs when compared with other mills.



Source: Hawkins Wright & Altri

Figure 18 – Pulp cash cost by region vs. CELBI

It is also useful to compare the cash costs of BHKP against the BSKP to understand how they might influence the changes in capacity. As we can notice the BHKP has a weighted average cost much lower than the BSKP that might influence pulp producers to convert mills to BHKP.

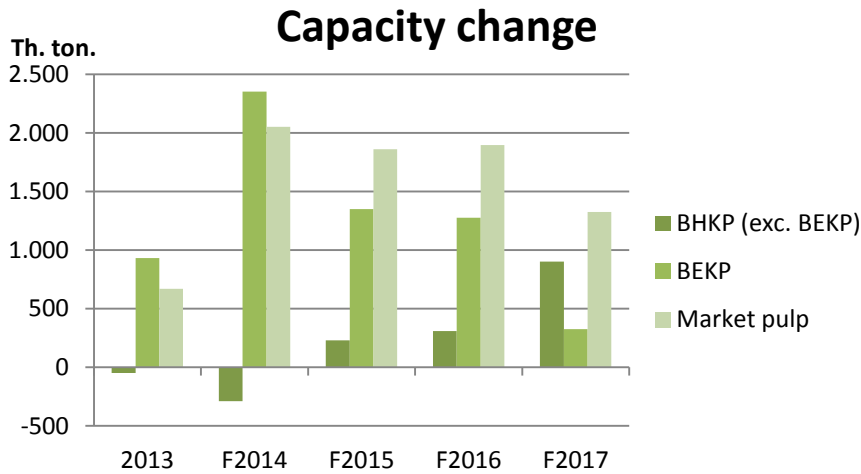


Source: Hawkins Wright

Figure 19 – BHKP vs. BSKP cash cost

Analyzing the capacity changes in the pulp market we notice that in the next years the BEKP increasing capacity will be the main responsible for the increasing in the total market. During the year 2013 the BEKP capacity increased at higher rates than the total market. For the next 3 years is expected to continue the same way representing most of the increase in capacity for the pulp market.

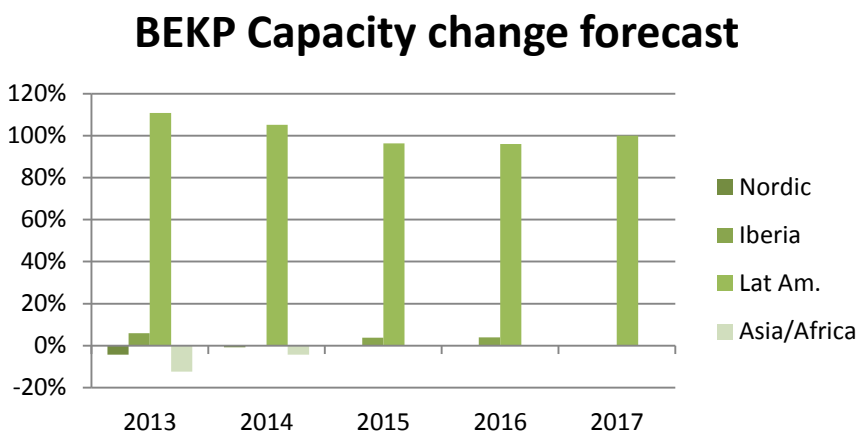
In 2017 the capacity in the pulp market is expected to increase at lower rates than the years before mainly because of a decrease in the growth rates of BEKP capacity. These values can change in case of strong investments scenario for that period in the industry. This increase in capacity is mainly to face the expected increase in demand.



Source: Hawkins Wright

Figure 20 – BEKP, BEKP and Pulp global capacity change

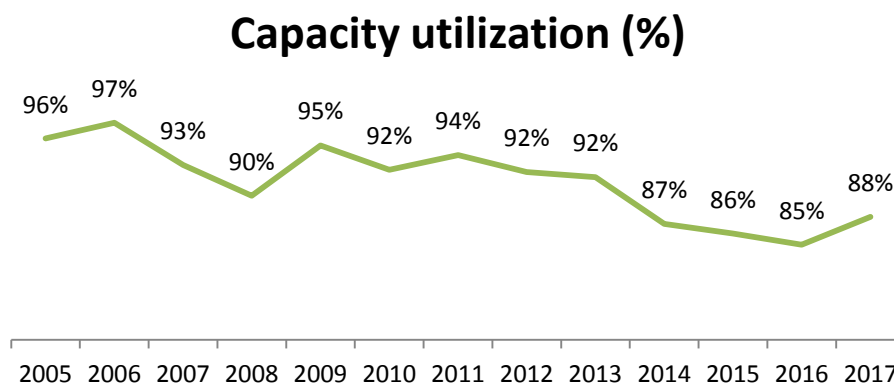
For the next years is expected that the Latin American companies (Brazil, Chile and Uruguay) will be the main responsible for the increasing capacity in BEKP. The only region out of L.A. that would be increasing its capacity will be the Iberian through the Portuguese companies, Altri and Portucel. All the other regions are keeping or decreasing their capacities and the main explanation for that is the high cash costs that those regions have when compared with the Latin America and Iberia regions.



Source: Hawkins Wright

Figure 21 – BEKP capacity change forecast

The capacity utilization influences the investment in new capacities. The companies in pulp industry try to have a low value of inventories for two main reasons: first to avoid decreasing of the price by the fact that companies to flow the inventory would need to decrease the price, which would not be beneficial for the companies and the second reason to avoid storage costs. In the figure 22 we see that the capacity utilization is decreasing, and this means that in the future companies might decide not to invest in new capacities to continue with high rates of capacity utilization and to increase the pulp price.



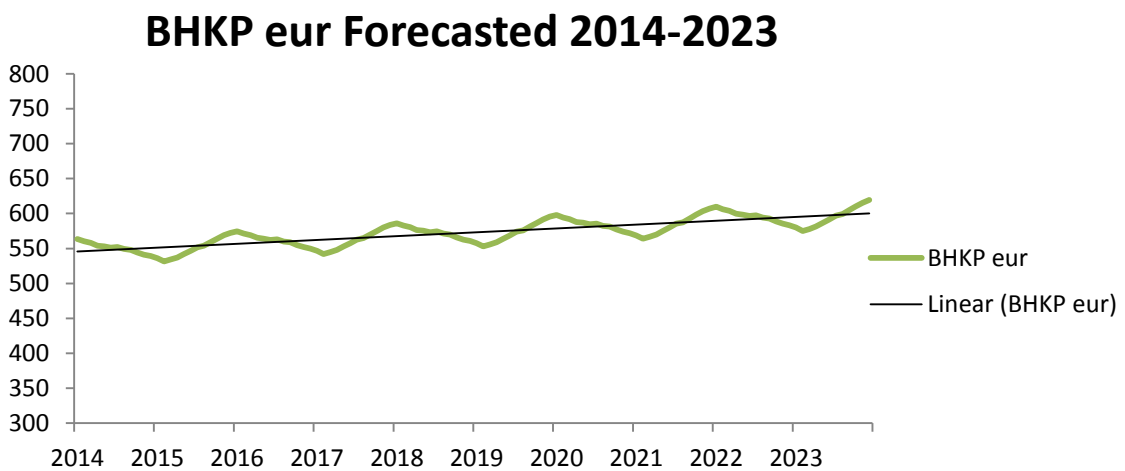
Source: Hawkins Wright

Figure 22 – BEKP global capacity utilization (2005-2017)

Pulp Price

Among all the pulp grades, historically the BEKP is the most expensive one. We have already looked for the historical prices and analyzed the changes in the price over the past years. Now it is important to try to forecast the future price and how it will behave in the next years.

Reading reports and news about the pulp industry and the future prices we found substantive opinions defending that in 2014 the price is expected to decrease due to new capacities and thenceforth will increase gradually following the linear regression of the last years (since 1998), expecting that the world economy will have a stable growth and behaviour. What we did was, having into account the linear regression of the prices since 1998 (1st year that there are records about global prices of pulp), find a period which better suits that linear regression. Analyzing the historical prices we see that the period between 2005 and 2008 is the one that better fits the historical linear regression. Assuming all this we got the figure 23.



Source: Thesis Assumptions

Figure 23 – BHKP forecasted price from 2014 to 2023 (EUR)

Pulp price is affected by the demand compared with the capacity (supply). Other factor is the US/Euro exchange rate since the pulp is traded in USD. Appreciation of the USD over Euro will affect positively the European producers since it will increase the value per ton. However when predicting the prices I used the BHKP price index on Euro currency for the simple fact that the company sells almost 85% of its production to Europe, and so, to avoid the risk of exchange rate distortions we predicted the prices in Euro.

Peer group

Since we are analysing the industry it would be useful to analyze and select the peer group of the company Altri, SGPS, S.A. As we already referred before Altri is only in the pulp industry (producer) selling mostly BEKP (type of BHKP) which represents almost 80% of the company revenues and the company isn't present in the paper industry. So when choosing the peer group (similar companies) this should be the first requirement.

Peer companies were chosen by: 1) having the same core business, 2) selling their products worldwide, 3) the largest producers of BEKP, and were selected on the basis of profitability, growth and risk so decreasing the probability of valuation errors.

- CMPC is one of the leading Latin American (Chile) companies in production and marketing pulp & paper products.
- ENCE is a Spanish company focused in production of eucalyptus pulp and renewable biomass energy
- FIBRIA is one of the world's leaders in the production of eucalyptus pulp situated in Brazil. Recently also started to invest in renewable fuels from wood and biomass.
- PORTUCEL is one of the largest producers in the world in printing and writing paper and in bleached eucalyptus Kraft pulp (BEKP). The company is located in Portugal
- SUZANO is a Brazilian company operating in the field of eucalyptus pulp, printing and writing paper and paperboard.
- EL DORADO BRASIL is a pulp and energy producer, distributing its pulp all over the world. However the company is not public traded.
- CENIBRA is a paper and pulp producer running its operations over more than 50 countries. As the previous company, CENIBRA isn't public traded.
- UPM is a Finnish pulp, paper and timber manufacturer with mills located in more than 15 countries
- ARAUCO is a Chilean wood pulp, engineered wood and forestry company. However this company isn't public traded

- VERACEL partnership between two leaders in the pulp and paper industry, Brazilian FIBRIA and Swedish-Finnish STORA ENSO so it isn't a peer due to the fact that isn't public traded.
- Mondi is an international packaging and paper Group with key operations located in central Europe, Russia, the Americas and South Africa.

In the figure 24 we can see all the companies chosen and the metrics that we use to make the peer group.

Company	Market cap	EV	Pulp sales	EBITDA	EBITDA 1y g	EBITDA 5y g	ROIC	D/EV	EV/sales	EV/EBITDA	BEKP Capacity
FIBRIA	15.297	22.729	6.845	3.462	42,65%	39,25%	5,4%	0,46	3,32	6,56	5300
SUZANO	10.024	18.714	5.558	1.822	46,66%	4,89%	4,4%	0,61	3,37	10,27	1930
CMPC	5.811	8.664	4.433	843	-0,39%	1,75%	2,1%	0,46	1,95	10,28	1740
ENCE	682	897	865	146	4,97%	9,92%	4,1%	0,42	1,04	6,13	1340
UPM	6.497	7.183	6.365	1.023	-18,09%	-1,60%	3,3%	0,57	1,13	7,02	1140
ALTRI	459	594	559	141	-1,15%	15,59%	15,5%	0,81	1,06	4,21	785
Mondi	6.102	7977,7	6.476	1.064	15,78%	5,84%	9,8%	0,22	1,23	7,50	305
PORTUCEL	2.601	2.865	1.531	351	-9,06%	5,23%	8,9%	0,32	1,87	8,17	285

Figure 24 – Peer companies' metrics

5. STRATEGY OF THE COMPANY

Before starting the valuation of the company ALTRI SGPS, S.A. is important to understand in which way is the company going to and what the strategies focuses are for the next years, so that the valuation represents them.

First we will analyze the future capacity and expansion. The company is expecting to increase capacity in its three mills, reaching in 2015 a capacity of 1.025 thousand tonnes per year.

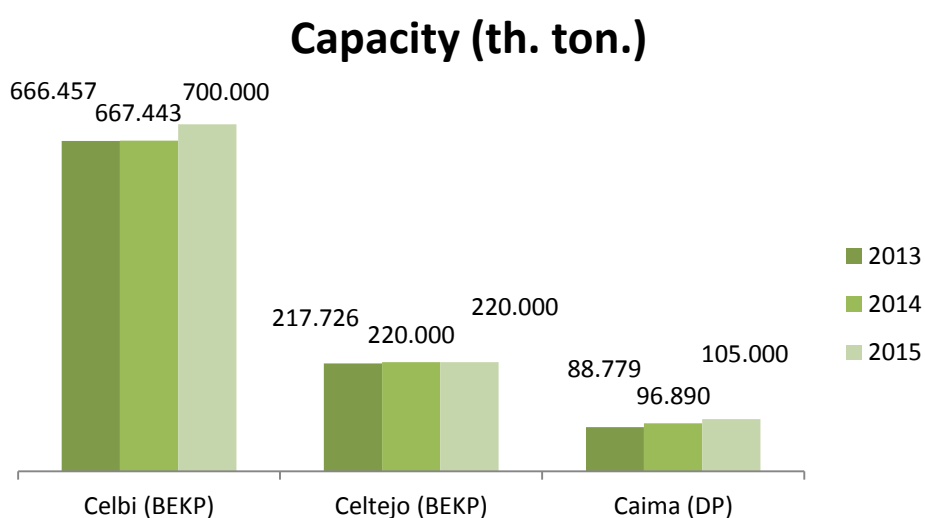


Figure 25 – Altri capacity

One of the main strategic focuses of the company is the cost control and efficiency driven projects. This is an industry that the competitive advantages come from the low production costs and so the importance that the company gives to that.

ALTRI is one of the most efficient pulp producers. The key strategic issue is to have a low cash cost per ton. To make that possible the company has new debottlenecking projects, with low CAPEX needs, increasing the capacity and optimizing efficiency.

The company has its major expansion projects concluded and it is by the end of the learning curve which represents a great support for what the company is looking for.

We will analyze the efforts of the company in each mill:

CELBI

- Debottlenecking projects to increase capacity up to 700K ton with a minor CAPEX (10M €/year)
- Focus on reduce cost management
- Reduce wood consumption per ton
- Reduce total amount of fixed costs
- Reduce the cash cost per ton with the decrease of fixed costs and increase in capacity

CELTEJO

- Focus on BEKP that the capacity will increase through debottlenecking projects up to 220K ton per year from 2014
- Low annual CAPEX needs (4M €/year)

CAIMA

- Conversion into Dissolving pulp that from 2015 will have the capacity of 105K ton of low cost DP
- Chemical cooking process enables an efficient conversion

Allied to the increasing efficiency in each mill is the focus of the company in the European clients as a way to optimize freight costs that are much lower in the European sales when compared with the rest of the world for transportation costs (distance/custom fees).

In spite of being located in Portugal the company has a strong exposure to global economy (only 6% of the sales are in Portugal) and the firm will continue to invest in that.

The company since its foundation in 2005 has registered high values of debt (book value) so the company also has the focus on financial deleverage. To do this the company will focus on strong discipline on CAPEX and on inventories as the working capital item most controllable of the company.

The strategic focus of the company on shareholders' value is the cash flow generation and net debt reduction

6. VALUATION

After a deep studying and understanding of the pulp industry and its global market such as all the valuation models and premises we will perform the valuation of the company ALTRI SGPS, S.A. using the **APV method**. We chose this one by the simple fact that the company will be changing its debt ratio and this method will allow us to capture in a more accurate way the real value of the company. We will have a detailed overview of all the cash flows items to understand how they change and how they will impact the company valuation.

We will present the cash flow items, interest tax shields and the bankruptcy costs and how we got those values.

Revenues

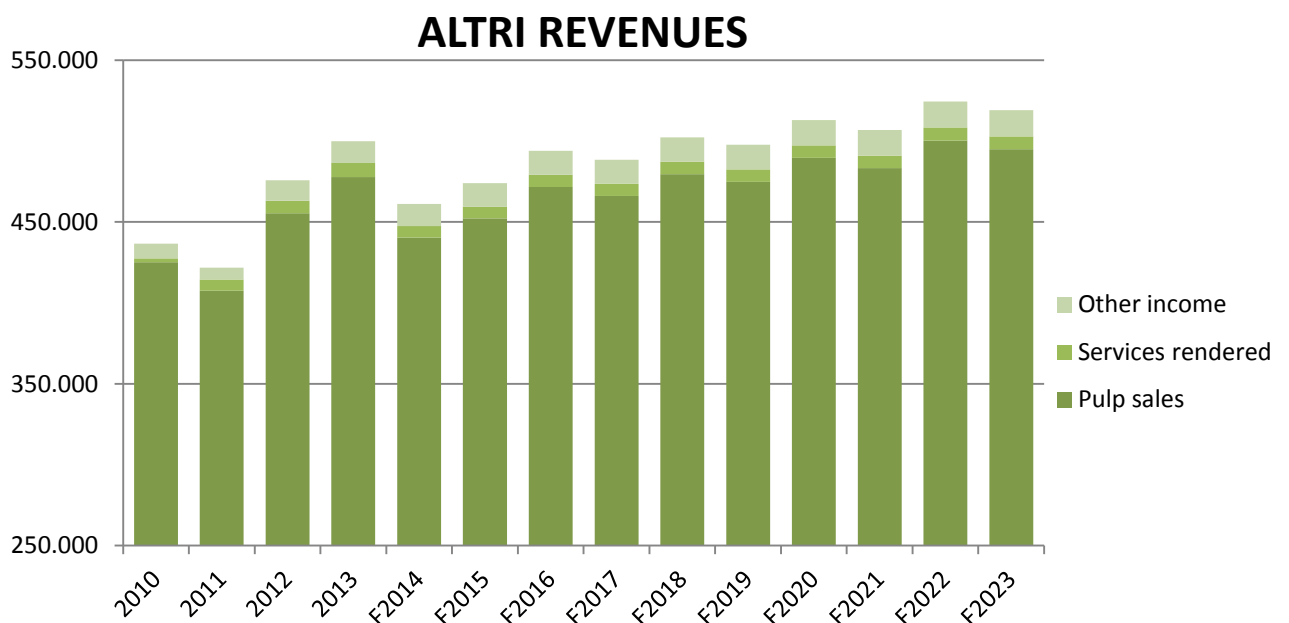


Figure 26 – Revenues

Sales

The production in ALTRI is often very close to the capacity of the mills and this has a very short and clear explanation: the company mills are suppose to work the entire year and to produce less would means that the company will need to stop and close the mills but it will still incurring the fixed costs and will not being producing nothing. So according to ALTRI's top management, they always produce their full capacity due to the fact that is the most cost effective decision.

As we have already seen before the company will achieve its maximum capacity in 2015 and it is expected to continue within those values until 2023. This is justified by the fact that the company to increase the capacity would need to invest a high amount in CAPEX and the company isn't willing to spend this amount due to its focus in reduce the debt level in the next years.

Having the actual and future capacity values clear we need to understand how the sales (thousands tons) are influenced by the global demand, but also for the company production.

The truth is that in the last years the company has performed better than the global industry and it is expected to continue that way. According to the company managers when the market has BEKP higher prices, the company makes an effort to sell more when compared with years with lower prices.

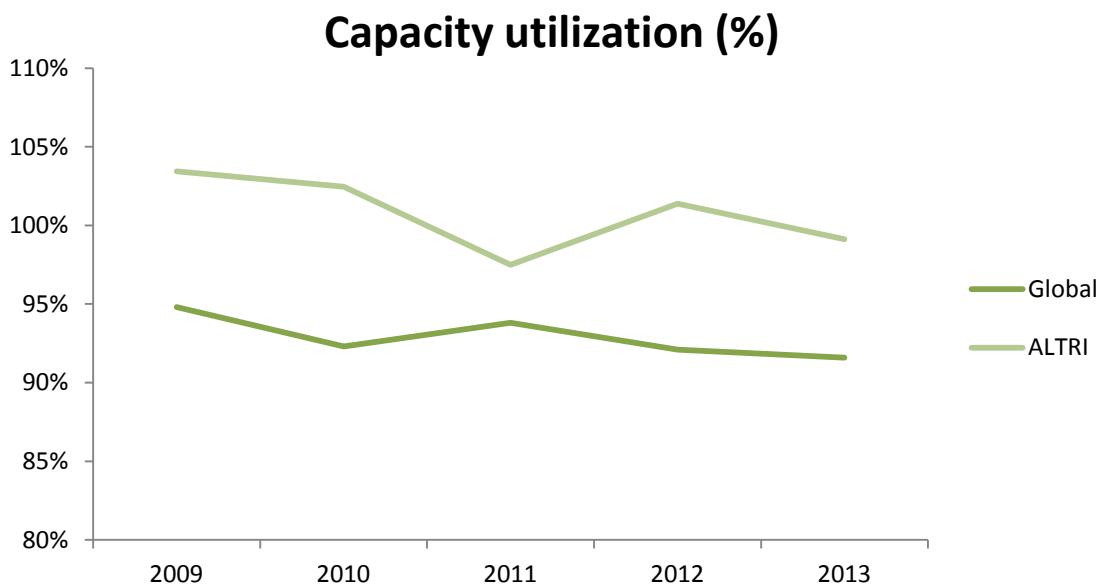


Figure 27 – Historical capacity utilization

In the last 5 years the company sold almost all of its production, which shows a very good indicator to the company forecasted sales, taking into consideration that the mills capacities are known. The main driver of the sales is the global demand, which we know is expected to continue to grow in the next years especially in the BEKP type of pulp.

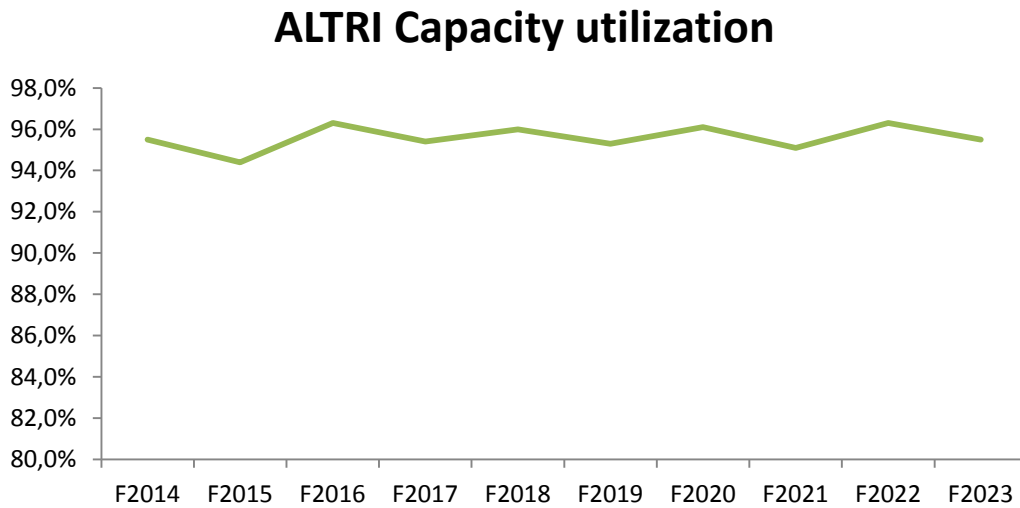


Figure 28 – Forecasted capacity utilization

Having the amount of pulp expected sales; we just need to estimate the price per ton. When analyzing the industry we forecast the future price based on experts and reports about the industry that we already know that it has a cyclical behaviour. We used an average price per year to calculate the total sales of the pulp.

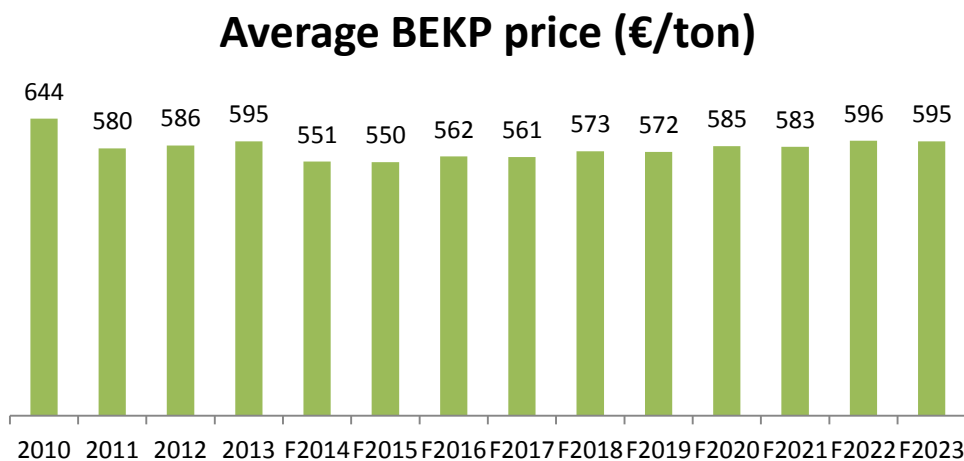


Figure 29 – BEKP price per ton

In the figure 29 we have the market prices of BEKP but these aren't the prices that the company charge for the simple fact that, as we already saw, more than 94% of the company sales are exported and the company has costs associated with freights and commissions that the company deduces from the price. Analyzing the historical prices of the company, they reduce the price on 15% when compared with the market prices.

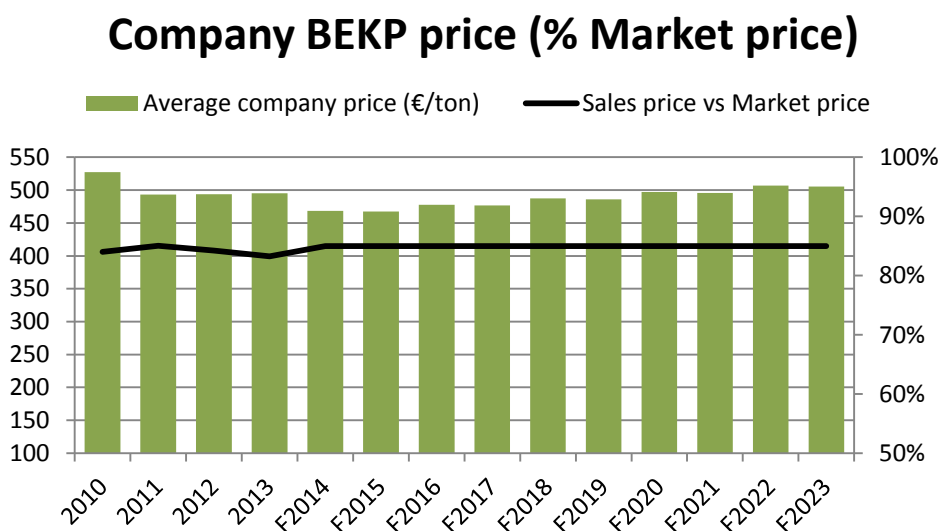


Figure 30 – BEKP price practice by Altri

As result of the price decrease in 2014 it is expected the sales to fall, and thereafter the sales of pulp will have a cyclical behaviour due to the price changing over the years.

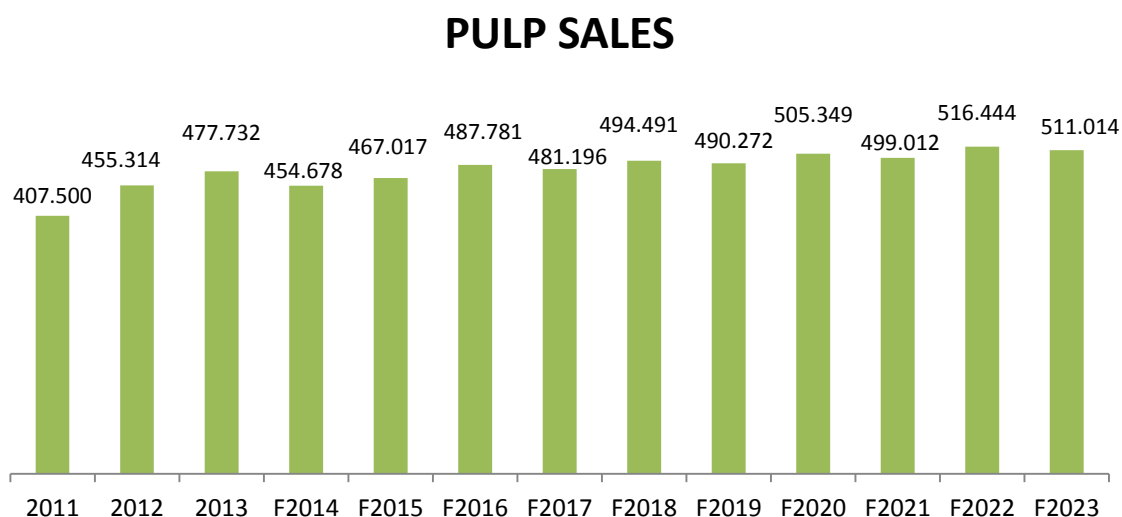


Figure 31 – Pulp Sales

The company sales also include the sale of energy produced by the company in its production. The energy is produced through the process of cogeneration which is also known as the method that combines heat and power utilising a primary fuel. In the ALTRI's case the company uses black liquor created from the use of wood to produce pulp as the primary fuel. Cogeneration involves burning the black liquor at the recovery boiler, generating electrical and thermal power which is going to be sold.

The energy sales are influenced by the company use of wood (production) that will generate the black liquor and then energy and by the price that is regulated by the Portuguese electricity regulator ERSE.

The CAGR of the energy sales between 2014 and 2023 is expected to be 1,6%.

Energy Sales

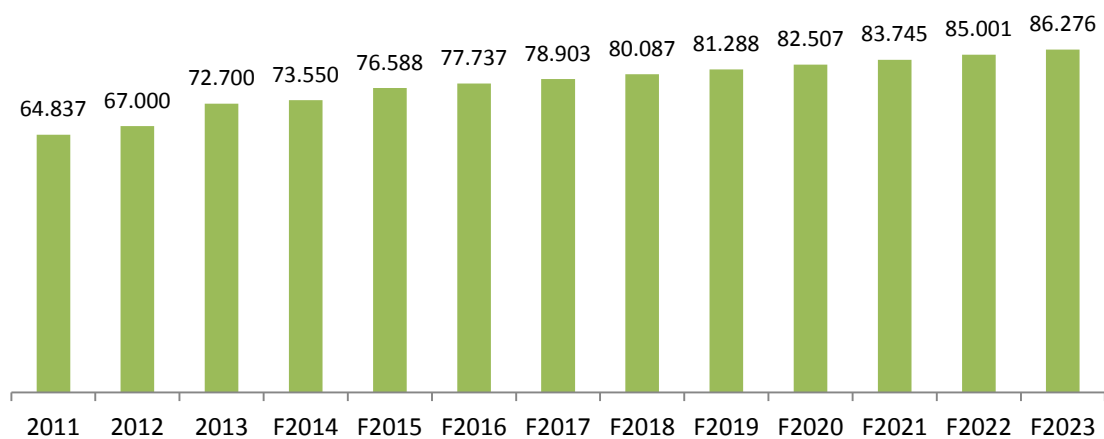


Figure 32 – Energy sales

Services rendered

The services provided by the company are directly related to the company sales since the services are provided to the company's clients as a customer service before, during and after the purchase. We forecast that the services delivered will continue as the same percentage of historical values compared with the sales.

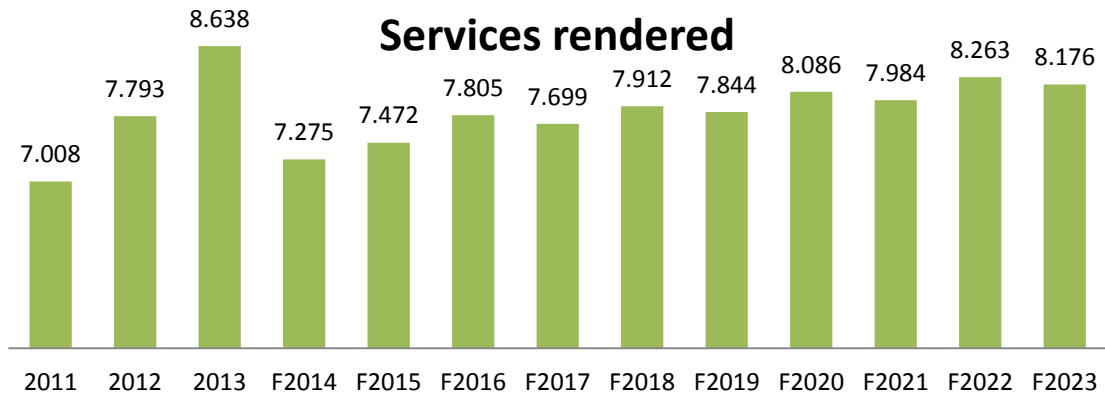


Figure 33 – Services rendered

Other income

Analysing the other income reported in the last years we conclude that most of its value comes from subsidies to investments and to exploitation provided for the Portuguese state and the European Union. In the ALTRI case these subsidies are related to the productivity, reduction of emissions to the environment, the sustainable production/utilization of the forest and its management.

The company has a special focus on forest management and a strategic plan which aims to optimize the forest assets expecting to continue to increase the value of subsidies received.

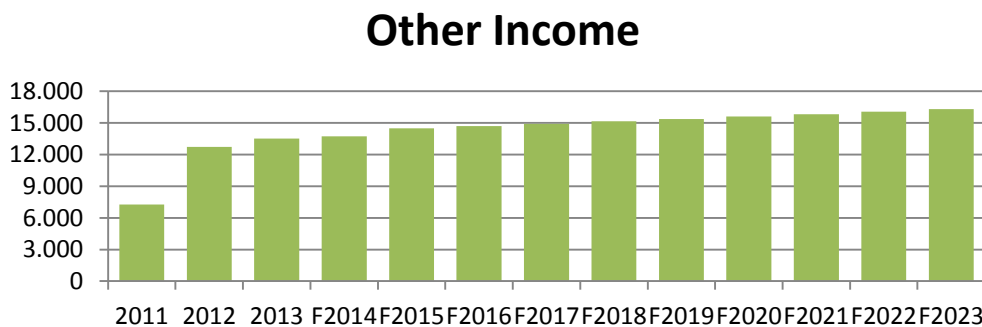


Figure 34 – Other income

Costs

After reading all the company reports and Investors presentations we easily understand the company's focus in have a strict control over costs as a way to increase the company's efficiency and competitiveness in the pulp market.

The company focus on being one of the most efficient pulp producers start with the cost control as a way to have a low cash cost per ton. This strategy includes strong focus on cost management, reducing wood consumption per ton and reducing the total amount of fixed costs.

COGS

As we will see in the year of 2014 the company has a great effort to decrease the cost of goods sold that embrace mainly wood and chemicals. The year of 2014 and 2015 are very important to the company for the simple fact that the company is finishing the major expansion projects and is at the end of the learning curve.

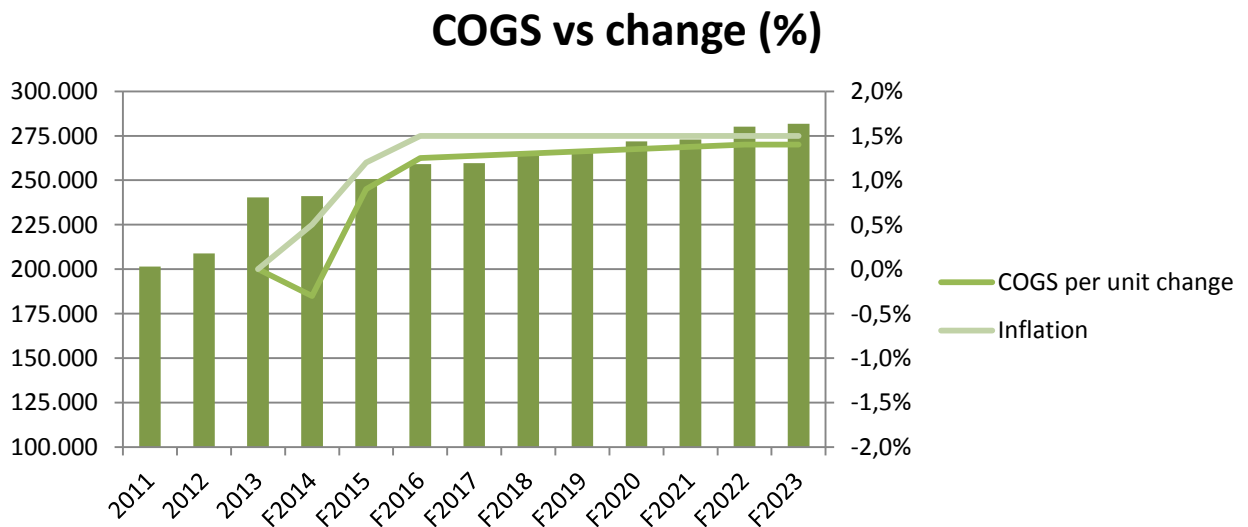


Figure 35 – Costs of goods sold and variation

The cost of goods sold is increasing over the time for two reasons: first because of the changes in the amount of tons sold and second because of the inflation. Calculating the price per ton, it is increasing over time but at a lower rate than the inflation, meaning that the company is cutting costs over the valuation period. These decrease of COGS per unit are justified by the company efforts to control costs and in this specific case in reducing the wood consumption per ton.

External supplies and services

Most costs incurred by the company are costs targeted or related with the production function. Fixed costs such as storage costs, water or energy are the ones with greater weight in the company costs. Administrative costs have a very low impact compared with costs related with the production.

Again the company efforts to invest in projects which lead to a reduction of costs and more efficient production, will lead to a decrease in the total costs with external supplies and services in 2014 in spite of the increase in production. After that the costs will increase with the inflation. The CAGR between 2014 and 2023 is 1,7%.

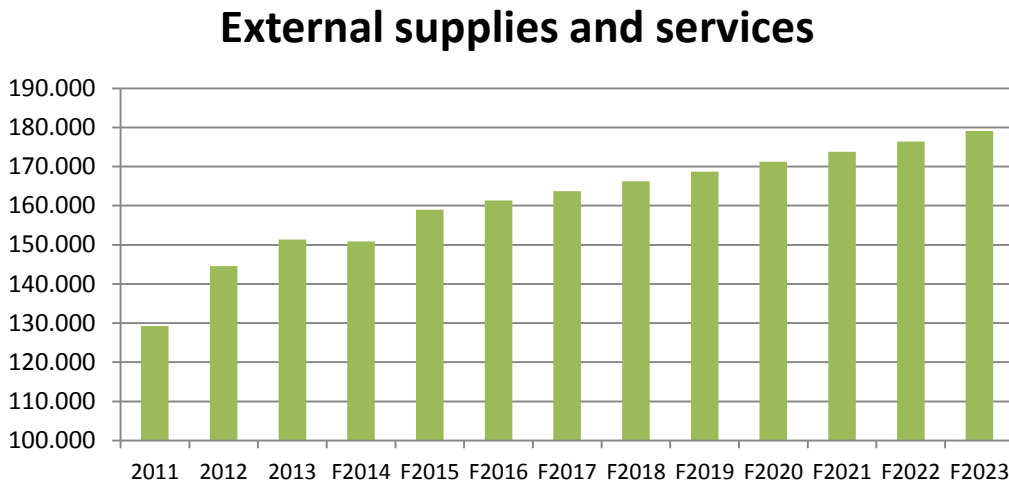


Figure 36 – External supplies and services

Payroll expenses

The company has most of its operations working through machinery and so increases in capacity and production don't represent a need to increase the number of employees which can be a driver for economies of scale. The company tries to have the minimum employees necessary in the production area and to optimize all its operations. The company will maintain the number of employees in 2014 to that minimum and this will be the ideal number of employees for the next years.

The payroll expenses are increasing over the years as a reward of the company's good performance. The CAGR between 2014 and 2023 will be 1,32%.

Payroll expenses (No. employees)

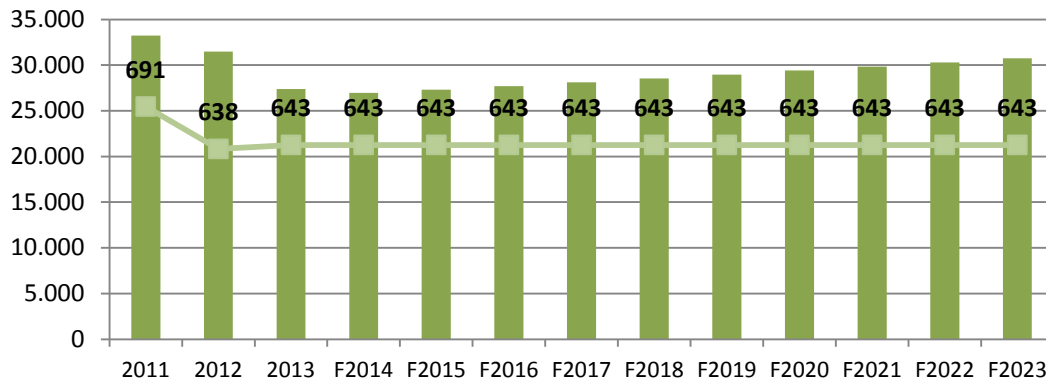


Figure 37 – Payroll Expenses

Other expenses

These costs represent losses on commodities derivatives contracts, related to hedge pulp price's variations, interests and exchange rates, which are recorded according to their fair value. This works as an insurance to the pulp produced to great changes (positively or negatively) in the value that might occur. Since the BEKP price is expected to change in the next years as in the past, the costs will continue almost at the same level. This cost was forecasted using historical data of the price changes and the costs paid.

Other costs

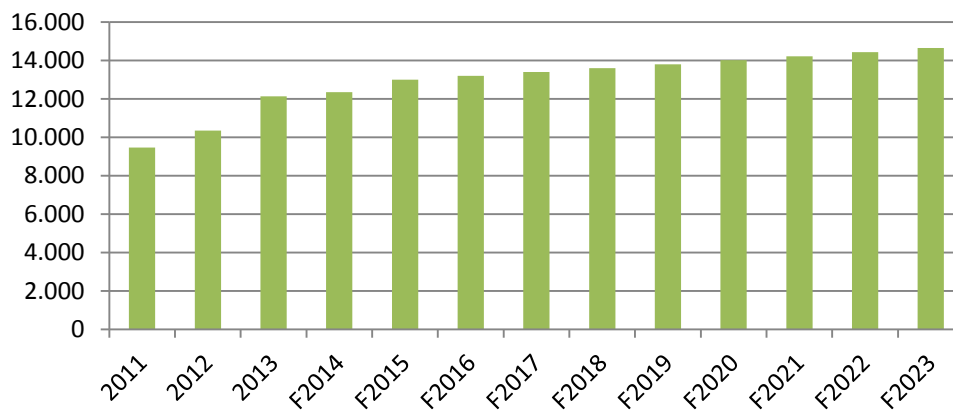


Figure 38 – Other costs

Depreciation, Amortization and CAPEX

As we have already seen before the company has a strategic orientation to generate cash flow to reduce debt level which is quite high and to create value to shareholders. Due to that we can understand why the company will invest such short amounts on CAPEX comparing with the operational cash flows generated by the company. The investments in CAPEX are only to invest in low cost debottlenecking projects, which increase production, optimize efficiency or target the company to new high value market niches.

The fact is that the major expansion projects that the company invested are being concluded and to increase significantly the capacity would be necessary to invest large amount of cash, that the company currently isn't able to dispend for the simple fact that the book value of debt represents nowadays almost 80% of the assets, which is a very large ratio when compared with the peer companies.

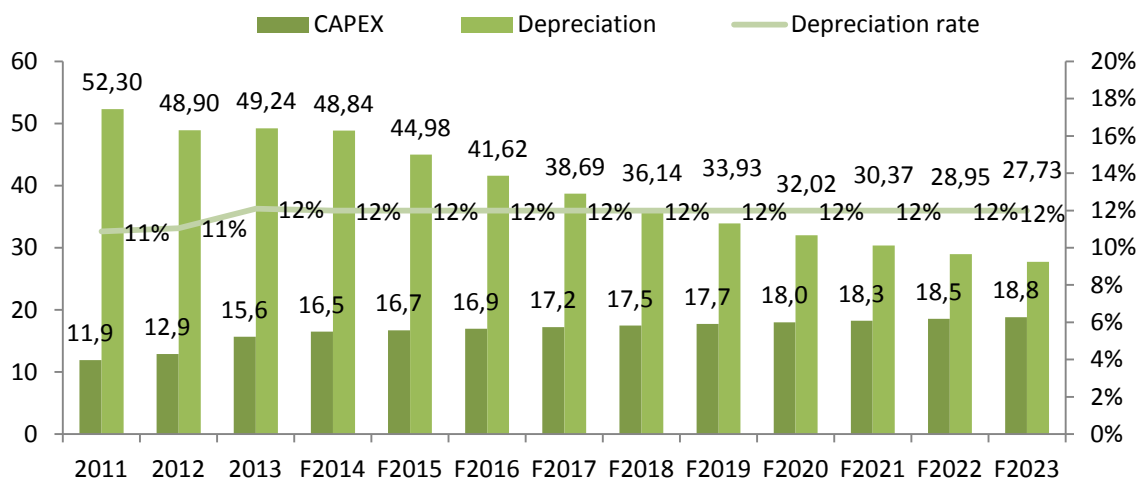


Figure 39 – CAPEX and Depreciations

In the figure 39 we have the values of the CAPEX for the next years and the depreciations. The CAPEX has a lower value compared with the annual depreciations meaning that the value of the assets will decrease over the next years and that is why the annual depreciations value is also decreasing.

This level of CAPEX is obtained from the company's reports and Investors presentations where the company specify the CAPEX to each mill and to the management forest.

CAPEX by company division (2014)

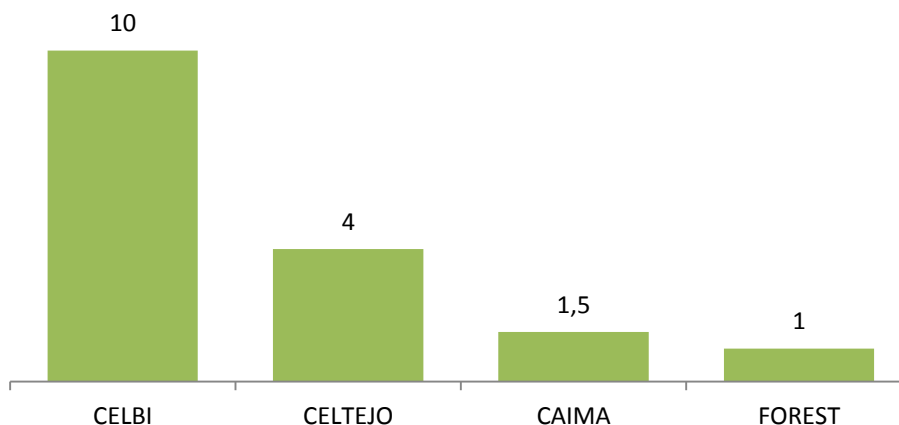


Figure 40 – CAPEX by company division

Working Capital

In terms of working capital the company has already good conditions of payments and receivables and it will be hard to improve those conditions. The increasing in value of the working capital is related with the increase in inventories, but can also be explained by an increase in sales and/or decrease of costs. The conditions are expected to continue the same for the next years

Working Capital analysis

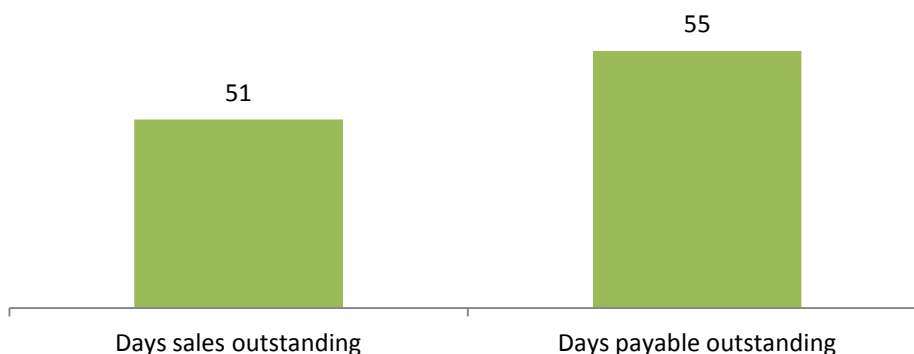


Figure 41 – Days sales/payable outstanding

About the inventories the company will sell almost all its capacity (sales/production will be higher than 95% year after year) but the part of the inventories which are not sold will be retained in inventories.

Working Capital

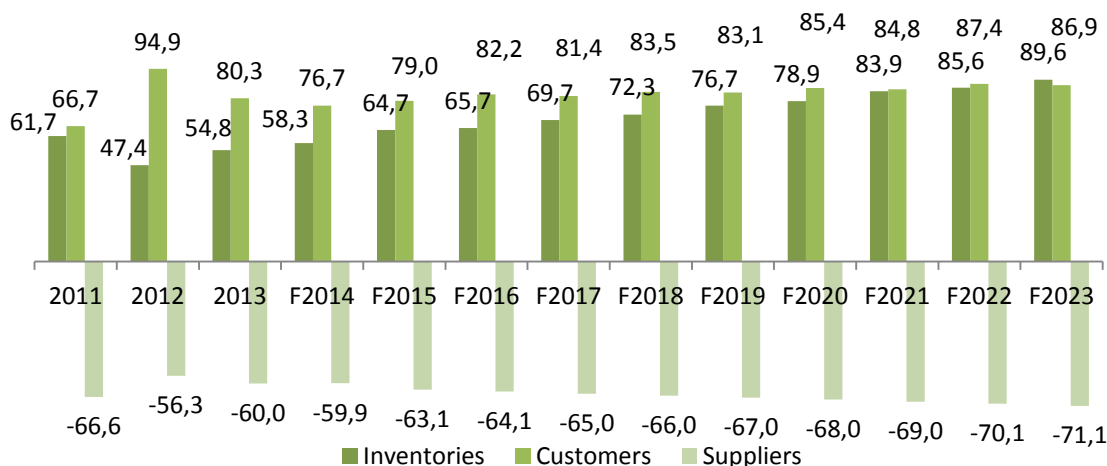


Figure 42 – Working Capital analysis

The difference between the working capital items is the investment in working capital that will be deducted to the free cash flow to the firm.

Working Capital	F2014	F2015	F2016	F2017	F2018	F2019	F2020	F2021	F2022	F2023
Total Current Assets	134.995	143.698	147.878	151.089	155.842	159.771	164.306	168.614	172.988	176.429
Total Current Liabilities	59.929	63.126	64.073	65.034	66.010	67.000	68.005	69.025	70.061	71.111
Net Working Capital	75.066	80.572	83.804	86.055	89.832	92.770	96.301	99.589	102.928	105.318
Investment in NWC	-23	5.507	3.232	2.250	3.778	2.938	3.531	3.288	3.339	2.390

Figure 43 – Working Capital needs

Adjusted Present Value

We will perform the company valuation through the APV method for the simple fact that the company accounts a high value ratio of debt and because of the company's intentions to reduce drastically the debt value. When valuing a company the best way to value these actions is the APV due to its focus on the Interests tax shields.

To start we will value the operations of the company as the company hadn't any debt, the unlevered cost of equity.

free risk rate	Rf	3,63%
market risk premium	(Rm-Rf)	6,10%
Beta levered	β_L	1,337
Beta unlevered	β_u	0,612
Tax rate	tx	31,5%
Cost of equity	Ke	7,36%

Figure 44 – Unlevered cost of equity (APV)

The risk free rate is the Portuguese bond 10 years (from 30/05/2014). We decided to use this due to the fact that the company has all its production facilities in Portugal, listed in the Portuguese stock exchange and the Portuguese economy has direct impact in the company's behaviour.

The value for the market risk premium was based on a survey approach and gives us a rate suggested by experts. The Beta unlevered was obtained through the beta levered that was calculated getting the sensitivity of the stock to the stock market estimated by regressing returns of the stock against the stock index. The slope of the regression is the beta levered of that asset.

We compared the beta computed with the one suggested by Bloomberg and the difference was quite short (beta=1,342) and so we decided to use the one that we compute.

To obtain the unlevered beta we also needed to compute the company's market values of debt and equity. The equity value is equal to the value of the company in the stock exchange, but the debt was more difficult to obtain since the company doesn't have public debt.

We analysed all the company reports and accounts and we obtained to the figure 45 with the nominal value of the bank loans and other loans.

2013	
Bank loans	153.877
Bank overdrafts	79
Bank loans	153.956
Commercial paper	247.900
Bond loans	375.000
Other loans	33.347
Other loans	656.247
Total loans	810.203

Figure 45 – Total company loans

We use this table as a reference to the interest and capital payments, but the value that we use for the debt value was the one suggested by the management report, where is stated that “ALTRI’s nominal remunerated debt net of cash and investments available for sale as of 31 December 2013 reached 563.2 million Euro” and taking into account that the amount of cash and cash equivalents was 232.450€, the market value of the debt in the end of 2013 was 795.650€, for the simple fact that there might be some other loans not considered for the market value of the debt.

Assuming that the last price of the company on 31st of December 2013 was 2.24€ we get to the following ratios of debt and equity:

Ratios	
D/V	0,63
E/V	0,37
D/E	1,73

Figure 46 – Company equity and debt ratios

Explained the performance of all the operational items, we will perform the valuation of the free cash flows to the firm (FCFF), the terminal value and its present value that will give us the value of the firm unlevered.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
EBIT	69.017	70.759	85.001	79.187	88.861	83.210	92.933	85.437	95.591	87.855
Taxes on EBIT	21.740	22.289	26.775	24.944	20.438	19.138	21.374	19.650	21.986	20.207
Depreciation	48.841	44.984	41.620	38.690	36.142	33.932	32.019	30.368	28.947	27.731
CF from Operations	96.118	93.454	99.845	92.933	104.565	98.004	103.577	96.154	102.553	95.379
Investment in WC	-23	5.507	3.232	2.250	3.778	2.938	3.531	3.288	3.339	2.390
CAPEX	16.500	16.698	16.948	17.203	17.461	17.723	17.988	18.258	18.532	18.810
FCFF	79.641	71.249	79.664	73.480	83.327	77.343	82.058	74.608	80.682	74.179
Discount factor	0,9314	0,8675	0,8080	0,7526	0,7010	0,6529	0,6081	0,5664	0,5276	0,4914
PV FCFF	74.179	61.811	64.371	55.302	58.411	50.498	59.902	42.260	42.566	36.451

Terminal Value	603.882
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Value of unlevered firm	1.139.634
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Figure 47 – Value of unlevered firm

All the items of the cash flow map have already been analysed and explained and the map is just the computation of all those items. Just to refer that the tax rate used was the one legislated in Portugal: 25% of income tax plus 1.5% and 7% of a special rates (derrama and derrama estadual).

Since we are valuing the company using the APV method, we need to calculate the interest that the company will pay in the next years, such as the debt values that the company will register in those years.

In 2013 the financial debt was:

	Current	Non current	Total
Bank loans	78.877	75.000	153.877
Bank overdrafts	79	0	79
Bank loans	78.956	75.000	153.956
Commercial paper	181.900	66.000	247.900
Bond loans	0	375.000	375.000
new Bond loans	0	0	0
Other loans	33.347	0	33.347
Other loans	215.247	441.000	656.247
Total loans	294.203	516.000	810.203

Figure 48 – Financial Debt

As we previously saw the company has a special focus in decrease the debt ratio and pay loans in the next years. Assuming all that we predict that from 2018 and after the company paid the actual loans recorded in its accounts (the payments assumed in the company Report and Accounts), the company will keep its debt equal in value (200.000.000) and all of it will be bond loans for the fact that the company can set better terms specially better interest rates.

Stated that the total loans value will be:

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Bank loans	75.000	75.000	50.000	25.000	0	0	0	0	0	0
Bank overdrafts	0	0	0	0	0	0	0	0	0	0
Bank loans	75.000	75.000	50.000	25.000	0	0	0	0	0	0
Commercial paper	66.000	30.000	0	0	0	0	0	0	0	0
Bond loans	375.000	75.000	75.000	75.000	0	0	0	0	0	0
new Bond loans	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000
Other loans	0	0	0	0	0	0	0	0	0	0
Other loans	641.000	305.000	275.000	275.000	200.000	200.000	200.000	200.000	200.000	200.000
Total loans	716.000	380.000	325.000	300.000	200.000	200.000	200.000	200.000	200.000	200.000

Figure 49 – Total loans (2014 – 2023)

The capital and interest payments were obtained in two ways: first through the company Report and Accounts where is stated the company's interest and capital payments until 2018 and second through the assumption that the company will have 200.000.000 in bond loans, with the same conditions of the bond loans issue in 2014, an interest rate of 6 month Euribor plus a fixed rate between 3,50% and 3,80%.

Loans payments	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Bank loans											
Capital	78.877	0	25.000	25.000	25.000	0	0	0	0	0	153.877
Interests	7.283	3.845	4.261	3.141	1.881	0	0	0	0	0	20.411
Bank overdrafts											
Capital	79	0	0	0	0	0	0	0	0	0	79
Interests	1	0	0	0	0	0	0	0	0	0	1
Commercial paper											
Capital	181.900	36.000	30.000	0	0	0	0	0	0	0	247.900
Interests	7.599	2.282	1.204	0	0	0	0	0	0	0	11.085
Bond loans											
Capital	0	300.000	0	0	75.000	0	0	0	0	0	375.000
Interests	5.169	6.644	1.745	2.196	3.128	0	0	0	0	0	18.882
New Bond loans											
Capital	0	0	0	0	70.000	80.000	50.000	0	70.000	0	270.000
Interests	6.599	9.830	9.770	9.710	9.590	9.690	9.870	9.950	9.910	9.950	94.869
Other loans											
Capital	33.347	0	0	0	0	0	0	0	0	0	33.347
Interests	723	0	0	0	0	0	0	0	0	0	723
Total											
Capital	294.203	336.000	55.000	25.000	170.000	80.000	50.000	0	70.000	0	1.080.203
Interests	27.374	22.601	16.980	15.047	14.599	9.690	9.870	9.950	9.910	9.950	145.971

Figure 50 – Total capital and interests payments (2014 – 2023)

Estimated all the interests that the company will pay in the next years we get to the interest tax shield and to the present value.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Interest tax shields	8.623	7.119	5.349	4.740	4.599	3.052	3.109	3.134	3.122	3.134
Discount factor	0,9532	0,9086	0,8661	0,8255	0,7869	0,7501	0,7150	0,6815	0,6496	0,6192
PV ITS	8.219	6.469	4.632	3.913	3.619	2.289	2.223	2.136	2.028	1.941

Terminal Value ITS	50.131
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PV ITS	87.600
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Figure 51 – Company Interests tax shields

To compute the cost of debt of the company we based on the last bond loans issued by the company, which gives us very good information about the cost of debt that the company can be currently financed in the market. The company issued this year 2014 three bond loans, in March, April and May with an interest rate of 6 month EURIBOR plus 3,65%, 3,50% and 3,80% respectively. Taking this into consideration we assumed that the cost of debt of the company would be the weighted average of these interest rates, for the simple fact that they are the costs of the company to be financed today with debt. The EURIBOR is currently on 1,26%, which makes the cost of debt equal to 4,91%. This value will be useful for discounting the interest tax shields and obtain the present value of them.

As we already stated the company doesn't have public debt, and doesn't have a credit rating so we used the suggestion of Damodaran to discover the company's rating through its interest coverage. We also used the credit default and bankruptcy probability suggested by Damodaran (2006) to calculate the bankruptcy costs.

If interest Coverage ratio is:				Bankruptcy probability
greater than	≤ to	Rating is	Spread is	
12,50	10000	Aaa/AAA	0,4%	0,07%
9,50	12,4999	Aa2/AA	0,7%	0,51%
7,50	9,4999	A1/A+	0,9%	0,60%
6,00	7,4999	A2/A	1,0%	0,66%
4,50	5,9999	A3/A-	1,3%	2,50%
4,00	4,4999	Baa2/BBB	2,0%	7,54%
3,50	3,9999	Ba1/BB+	3,0%	10,00%
3,00	3,4999	Ba2/BB	4,0%	16,63%
2,50	2,9999	B1/B+	5,5%	25%
2,00	2,4999	B2/B	6,5%	36,80%
1,50	1,9999	B3/B-	7,3%	45%
1,25	1,4999	Caa/CCC	8,8%	59,01%
0,80	1,2499	Ca2/CC	9,5%	70%
0,50	0,7999	C2/C	10,5%	85%
-100000,00	0,4999	D2/D	12,0%	100%

Source: Damodaran (2006)

Figure 52 – Bankruptcy costs

With the company's rating we get the bankruptcy probability of the company that will be useful to figure the bankruptcy costs. The probability of default is measured by the company debt ratios and its interest coverage.

The Bankruptcy costs measure the impact that the bankruptcy can have and all the costs associated to that.

The cost of bankruptcy is estimated as a percentage of the unlevered value of the company obtained from a study from Acharya, Bharath and Srinivasan (2003) where they study the impact of bankruptcy in the different industries, the average recovery and respective costs of a bankruptcy in each industry.

Industry	Avg. Recovery	Costs of Bankruptcy
Utilities	74%	26%
Insurance & Real Estate	37%	63%
Telecommunications	53%	47%
Transportation	39%	61%
Financial Institutions	59%	41%
Healthcare/Chemicals	56%	44%
High Technology/Office Equipment	47%	53%
Aerospace/Auto/Capital goods	52%	48%
Forest/Building Products/Homebuilders	54%	46%
Consumer/Service	47%	53%
Leisure time/Media	52%	48%
Energy & Natural Resources	60%	40%

Figure 53 – Costs of Bankruptcy

Having the value of the firm unlevered, the probability of Bankruptcy (Damodaran) and the costs of bankruptcy (Acharya, Bharath and Srinivasan) we can compute the bankruptcy costs:

Value of unlevered firm	1.139.634
Bankruptcy Probability	25%
Costs of Bankruptcy	46%
Bankruptcy costs	131.058

Figure 54 – Bankruptcy costs

Having all the items of the company's value, we just need to subtract the estimated value of the net debt obtained in the company management report. The net debt is the sum of all the financial debt minus the cash & cash equivalents.

1.Value of unlevered firm	1.139.634
2.PV ITS	87.600
3.Bankruptcy costs	131.058
4.Enterprise Value (1+2-3)	1.096.175
5.Net debt	563.200
Equity Value (4-5)	532.975

Figure 55 –Enterprise Value & Equity value

Taking into account that the company has 205.131.672 shares outstanding, the value per share of the company using the adjusted present value is:

Price per Share	2,60
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Figure 56 – Price per share

Bull-Bear scenarios

We performed different scenarios to check how they could affect the company's value, depending on assumptions taken. We considered Bull-Bear scenarios that in the bear market the assumptions were revised negatively, meaning that the company will have worst values than the ones assumed, considered as the possible worst scenario. The bull market is the opposite; it assumes that everything will perform better than the expected and it will be the best case scenario.

Assumptions	Bear case	Base case	Bull case
Sales/Production (%)	95,0%	98,70%	99,5%
Price	-3%		3%
Costs of sales	3%		-3%
External supplies & services	3%		-3%
CAPEX	3%		-3%
Enterprise Value	600.150	1.096.175	1.427.637
Price per share	0,18	2,60	4,21

Figure 57 – Bull-Bear scenarios

Analyzing the figure 57 we clearly see that changes in revenues and costs will have a high impact in the company's value, especially in the bear case where the price per share changes negatively in 93%.

Sensitivity analysis

In the figure 58 we see the sensitivity analysis to the cost of equity and to the long-term growth and how changes in both values change drastically the value of the company. Analyzing the table we see that the cost of equity has a greater impact in changing the value of the company. The change of the cost of equity to 9.86% would decrease the enterprise value from 1.096 million EUR to 818 million EUR. In the opposite way, a change to 4.86% would increase the company's value to 1.737 million EUR.

The growth rate also has a relevance for the fact that different assumptions would lead to different values, in this case between 990 million EUR ($g=-0.25\%$) and 1.259 million EUR ($g=2.25\%$).

		Cost of Equity										
		4,86%	5,36%	5,86%	6,36%	6,86%	7,36%	7,86%	8,36%	8,86%	9,36%	9,86%
Long term growth	-0,25%	4,28	3,68	3,19	2,76	2,40	2,08	1,81	1,56	1,35	1,15	0,98
	0,00%	4,51	3,87	3,34	2,89	2,50	2,17	1,88	1,63	1,40	1,20	1,02
	0,25%	4,76	4,07	3,50	3,02	2,62	2,27	1,97	1,70	1,47	1,26	1,07
	0,50%	5,05	4,29	3,68	3,17	2,74	2,37	2,05	1,78	1,53	1,31	1,12
	0,75%	5,36	4,54	3,87	3,33	2,87	2,48	2,15	1,86	1,60	1,38	1,18
	1,00%	5,72	4,81	4,09	3,50	3,01	2,60	2,25	1,94	1,68	1,44	1,24
	1,25%	6,13	5,12	4,33	3,69	3,17	2,73	2,36	2,04	1,76	1,52	1,30
	1,50%	6,60	5,47	4,60	3,91	3,34	2,87	2,48	2,14	1,85	1,60	1,37
	1,75%	7,14	5,87	4,90	4,14	3,53	3,03	2,61	2,25	1,95	1,68	1,45
	2,00%	7,78	6,32	5,24	4,41	3,75	3,20	2,76	2,38	2,05	1,77	1,53
	2,25%	8,55	6,86	5,63	4,71	3,98	3,39	2,92	2,51	2,17	1,88	1,62

Figure 58 – Sensitivity analysis

Multiples valuation

To value the company using the multiples approach, we extract the data about the company peers from the Bloomberg for the 6 companies that among with ALTRI are responsible for most of the BEKP global production. The multiples valuation is very useful to compare with the DCF valuation and to check assumptions and to compare the company's performance with its peers.

Selected peer group:



Figure 59 – Peer group

Multiples	2013		2014	
	EV/EBITDA	PER	EV/EBITDA	PER
Weight Average	7,54	21,88	7,08	26,28
Value per share	2,45	5,91	1,32	5,11

Figure 60 – Relative Valuation

In the figure 60 we see the different multiples used to value the company. The difference of value between the multiples can be explained for several factors but in this case is mainly because of the high level of debt that Altri has compared with the peer group. The high leverage of the company increases a lot the financial costs when compared with the peer companies that is why the share value using the PER is so high. In the ALTRI case we will just use the EV/EBTIDA multiple for the fact that the PER is not suitable due to the company's debt structure.

7. COMPARISON WITH INVESTMENT BANKING VALUATION

We will compare our valuation with the BPI Investimentos performed by the analysts José Rito and Bruno Bessa date back to March 2014.

The most distinctive choice starts with the methodology used to value the company. While we used the APV approach the BPI used the discounted FCF at the WACC.

The company assumes in the Report and Accounts that they will decrease the debt level due to their high leverage. Taking this into account the most suitable valuation method is the APV, but the Investment banking decided to use the WACC with a fixed Debt to Enterprise value equal to 40%.

- Industry expectation

The assumptions that were taken for the industry are almost the same between the BPI and thesis valuation, with the demand and supply of BEKP increasing and with the global capacity utilization decreasing. The difference between the thesis and BPI assumptions is that BPI assumes (as the thesis) that the prices will decrease in 2014 but after that will be increasing yearly, and in the thesis we try to recreate the cyclical behaviour of the prices with increases and decreases over the years.

- Operations forecast

The main difference in the Thesis valuation and BPI valuation in the company operations is that while we assume that this is a cyclical industry and so that will have impact on the company performance, BPI analysis assumes that the company is improving its performance over time. The thesis valuation is more conservative than the one performed by BPI.

- Investments

This is the topic where the thesis and BPI valuation differ the most. The values used to the CAPEX in the thesis were the ones suggested by company's reports and presentations and the same to the working capital needs, due to the company's straight focus on having low values, having the best conditions over suppliers and customers, and to sell almost all its production. The BPI valuation assumes high values of replacement CAPEX and in the working capital needs assumes that the accounts receivables will be much higher, due to the increasing sales but also they are expecting the company to take more time to collect its revenues.

- Net Debt value

The net debt in the thesis is computed using the market value of the financial debt less the cash and cash equivalents accounted in the end of 2013 in the company report and accounts, while BPI uses a net debt predicted to the end of the year of 2014.

	BPI				Thesis			
	2014	2015	2016	2017	2014	2015	2016	2017
Revenues	529	563	576	588	528	544	566	560
EBITDA %	22%	25%	27%	27%	22%	21%	22%	21%
EBITDA	116	140	157	159	118	116	127	118
Depreciations	51	52	53	54	49	45	42	39
Income tax	8	11	25	26	22	22	27	25
CF from Operations	159	181	185	187	145	138	141	132
Changes in NWC	11	13	4	1	0	6	3	2
CAPEX	26	30	28	26	17	17	17	17
FCFF	122	138	153	160	128	116	121	112
Financial results	-23	-24	-20	-18	-27	-23	-17	-15

Figure 61 – Thesis vs. BPI cash flow map

Analyzing the Cash flow map we can see that the EBITDA margin is very close in 2014 between both valuations, where from 2015 the differences arise for the assumption in the thesis that the industry has a cyclical behaviour and the BPI valuation assumes a continued growth in the industry.

DCF assumptions	BPI	Thesis
Re	11,20%	7,27%
Rf	3,25%	3,63%
CRP	1,65%	-
Beta levered	1,1	1,337
Beta unlevered	0,747	0,612
Market premium	6,00%	6,10%

Rd	7,30%	4,91%
tax rate	29,0%	31,5%
D/EV	40%	63%
WACC	8,80%	
G	2%	1%

Figure 62 – WACC vs. APV

Comparing the discount rates used on both valuations is important to say that in BPI valuation they use the WACC it means that the cost of equity is levered and in the thesis we used the APV so the discount factor is unlevered and that is why there is such a considerable difference. The cost of debt used in the thesis was computed using the average rate of the last bond issues from the company, for the simple fact that those interests represent the cost of debt for the company to be financed today in the market.

Using the WACC method is implied that a target Debt to equity value is established. However reading and studying the company we notice that the company has high levels of debt and that top management has special focus on reducing that level and so it will be changing over the next years. The APV method makes possible to capture effectively these changes.

	BPI	Thesis
Enterprise Value	1.164	1.096
Net Debt	526	563
Equity value	638	533
# shares	205,1	205,1
Price per share	3,11	2,60

Figure 63 – Compare EV and equity values

Analyzing the final values of the enterprise value, equity value and price per share the values have few differences. The thesis has much more conservative assumptions, that make the valuation has the enterprise value lower the BPI valuation and the net debt higher.

The differences valuing the net debt, that BPI uses a forecast value for the end of 2014 while the thesis valuation uses the value in the end of 2013 made the value of the company differ. If we used the same net debt of BPI the difference from the price per share would be almost half of the original difference; originally the valuations differ in 0.51€ per share, and if we used the same net debt the difference would be 0.33€.

8. CONCLUSION

The Valuation of Altri SGPS, S.A. was made using the most appropriate tools, taking into consideration the company and industry specifics. We used the APV method due to the fact that the company will be reducing the leverage in the next years. We also used the relative valuation through the EV/EBITDA ratio.

The prices target obtained were 2,41€ (EV/EBITDA) and 2,60€ (APV) per share which translate in a Neutral/ Buy recommendation since it is 14% upside of the company price in May 30th (2,28€).

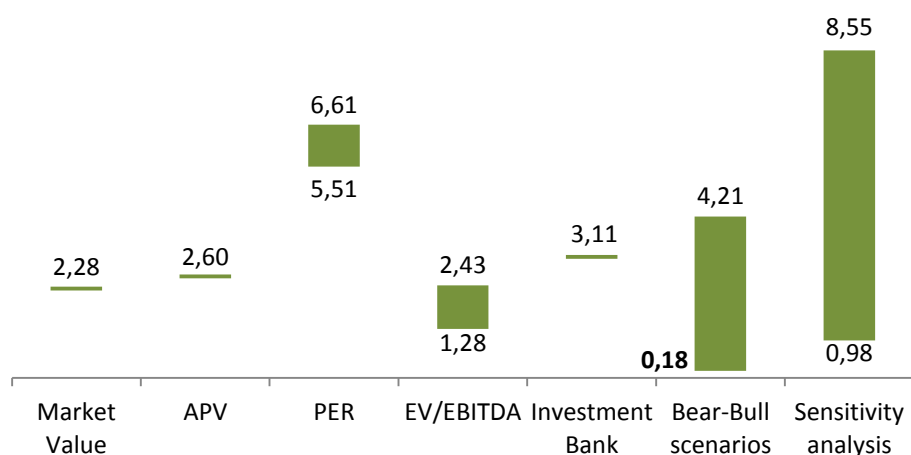


Figure 64 – Target prices

In the figure 64 we see the price range of the shares obtained in the valuation of the company. The differences in the Bear-Bull scenarios and sensitivity analysis compared to the others are explained by the simple fact that they analyse extreme scenarios. The PER as we already explained is due to the high debt level of the company when compared with the peer group.

The values obtained through the APV valuation and EV/EBITDA are close to the market values and to the valuation of the BPI Investment Bank

The valuation was made based on conservative projections of the price and sales, assumed that the company will have special focus on reducing costs with a low level of investments and will reduce the debt level.

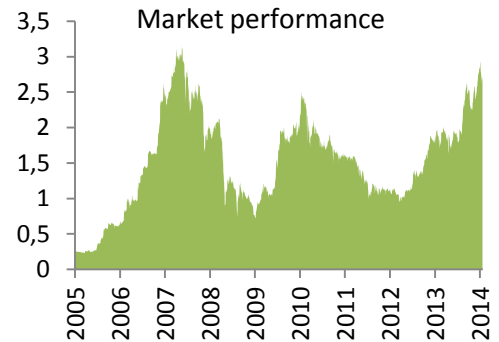
This strategy is the way that the company found to adapt to the industry and face the increasingly competition from Latin America. Reducing the leverage, in 10 years the company will be able to make considerable investments again and compete for prominent position in the industry.

9. RESEARCH NOTE

- Altri is a leading Portuguese pulp producer, one of the most efficient companies in the industry. The company sells bleached eucalyptus kraft pulp (BEKP) and dissolving pulp, having a production capacity of 1.025 thousand tonnes. The company also operates in forest management and in the energy production through cogeneration and biomass (Joint venture with EDP).
- The company is completing a capacity expansion and the strategies for the next years are related with optimizing efficiency through cost control and efficiency driven projects such as debottlenecking projects. The main goal is to reduce the cash cost per ton.
- Another strategic focus is on the decreasing the high values of debt. The company registers high values of financial leverage when compared with its peers. The company will focus on strong discipline in CAPEX and in Cash flow generation.

Recommendation: Neutral / Buy

Valuation Summary (€ mn)	
EV	1.096.175
Net Debt	563.200
Equity Value	532.975
# shares	205.132
2014 Price target	2,60
EV/EBITDA	2,41

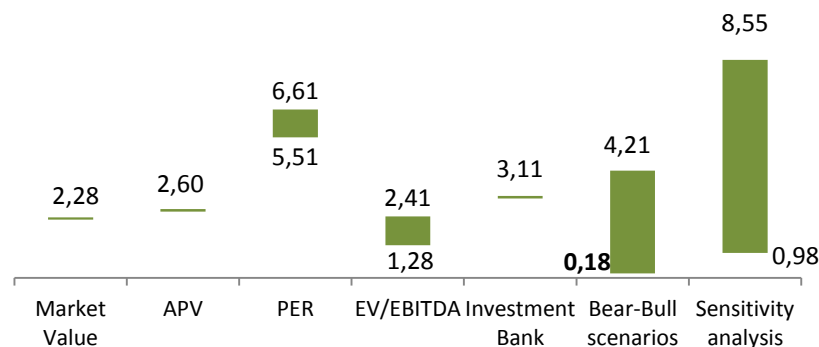


Estimates (€ mn)	2013	E2014	E2019	E2023
Revenues	572.570	549.228	594.757	621.761
EBITDA	141.400	117.858	117.142	115.586
EBIT	88.741	69.017	83.210	87.855
Earnings	55.366	39.852	54.834	61.615
EPS	0,27	0,19	0,27	0,30
FCFF	105.248	79.641	77.343	74.179
EV/EBITDA(1)	3,31	3,97	3,99	4,05
PER(1)	8,45	11,74	8,53	7,59

(1) Assuming the market cap in 30th May 2014

Stock data (€ mn)	
Price (30th May)	2,28
shares	205.132
Mark. Cap.	467.700
Free float	37%
Avg. Daily Vol.	369.008
2014 High - Low	2,99 - 2,08

- The average BEKP price should decline in 2014 and for the next 10 years it's expected to have a cyclical behaviour being expected an average price growth per year equal to 1%. Overall the company will have a significant decrease in the EBITDA in 2014. For the next years the EBITDA will have the same cyclical behaviour; however the EBIT and the Earnings will be increasing for the simple fact that the depreciations (low investment in CAPEX) and the financial costs (debt reduction will lead to lower interests) will both decrease.
- Using the most appropriate tools and taking into consideration the company and industry's specifications, the price target of the company is 2,60€ representing a 14% upside of the company's price in May 30th (2,28€) translating in a Neutral/Buy recommendation. When comparing the company with its peers, the multiples valuation using the EV/EBITDA gives a price target of 2,41€. The valuation performed by the BPI Investment bank suggests a price target of 3,10€.



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11. APPENDIX

Balance sheet

	2010	2011	2012	2013	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Biological assets	93.552	103.340	108.035	107.123	101.767	96.679	91.845	87.252	82.890	78.745	74.808	71.068	67.514	64.138
Tangible fixed assets	500.487	460.119	424.105	390.512	358.171	329.884	305.213	283.726	265.044	248.835	234.804	222.695	212.280	203.359
Investment property	214	534	468	461	459	453	446	440	433	427	420	414	408	402
Goodwill	269.594	265.531	265.531	265.531	265.531	265.531	265.531	265.531	265.531	265.531	265.531	265.531	265.531	265.531
Intangible assets	524	989	605	194	0	0	0	0	0	0	0	0	0	0
Investments in associated companies and joint ventures	10.722	7.035	6.338	8.642	8.685	8.789	8.921	9.055	9.191	9.329	9.469	9.611	9.755	9.901
Investments available for sale	10.101	10.094	14.982	14.657	14.584	14.409	14.193	13.980	13.770	13.563	13.360	13.160	12.962	12.768
Others non-current assets	517	706	385	3.072	3.057	3.020	2.975	2.930	2.886	2.843	2.800	2.758	2.717	2.676
Deferred tax assets	14.712	13.699	33.358	31.166	31.010	30.638	30.178	29.726	29.280	28.841	28.408	27.982	27.562	27.149
Total Non-Current assets	900.423	862.047	853.807	821.358	783.263	749.403	719.302	692.639	669.025	648.113	629.601	613.218	598.729	585.924
Inventories	49.549	61.729	47.440	54.829	58.253	64.677	65.718	69.671	72.340	76.668	78.860	83.862	85.553	89.553
Customers	92.068	66.673	94.859	80.295	76.742	79.021	82.160	81.418	83.502	83.103	85.446	84.752	87.435	86.876
Other debtors	4.569	9.087	7.241	7.562	7.524	7.434	7.322	7.213	7.104	6.998	6.893	6.789	6.688	6.587
State and other public entities	7.734	12.101	9.811	20.224	20.123	19.881	19.583	19.289	19.000	18.715	18.434	18.158	17.885	17.617
Other current assets:	6.265	3.340	2.547	3.455	3.438	3.396	3.346	3.295	3.246	3.197	3.149	3.102	3.055	3.010
Derivatives	0	0	262	1.204	0	0	0	0	0	0	0	0	0	0
Cash and cash equivalents	129.868	112.747	112.393	232.450	325.400	19.462	39.530	86.638	5.474	80.648	163.531	238.796	319.782	394.271
Total Current assets	290.053	265.677	274.553	400.019	491.479	193.872	217.658	267.525	190.666	269.329	356.313	435.460	520.399	597.915
Total Assets	1.190.476	1.127.724	1.128.360	1.221.377	1.274.742	943.275	936.960	960.164	859.691	917.442	985.914	1.048.678	1.119.128	1.183.839
Share Capital	25.642	25.642	25.642	25.641	25.642	25.642	25.642	25.642	25.642	25.642	25.642	25.642	25.642	25.642
Legal reserve	2.863	2.863	2.863	2.863	2.863	2.863	2.863	2.863	2.863	2.863	2.863	2.863	2.863	2.863
Other reserves	24.531	89.585	103.112	157.811	213.159	253.011	286.328	332.339	377.828	436.600	491.434	556.946	616.704	684.105
Consolidated net profit	62.014	22.568	52.182	55.348	39.852	33.317	46.010	45.489	58.772	54.834	65.512	59.759	67.401	61.615
Total shareholders' funds attributable to the parent company's shareholders	115.050	140.658	183.799	241.663	281.516	314.833	360.844	406.333	465.105	519.939	585.451	645.209	712.610	774.226
Non controlling interests	112	105	128	146	146	146	146	146	146	146	146	146	146	146
Shareholder's equity and minority interests	115.162	140.763	183.927	241.809	281.662	314.979	360.990	406.479	465.251	520.085	585.597	645.355	712.756	774.372
Bank loans	139.153	11.875	103.557	74.213	450.000	395.000	370.000	200.000	120.000	150.000	200.000	130.000	200.000	200.000
Other loans	548.481	538.772	454.999	439.370	0	0	0	0	0	0	0	0	0	0
Reimbursable subsidies	0	0	22.770	11.228	11.055	11.188	11.355	11.526	12.699	12.889	13.083	13.279	13.478	13.680
Other non-current creditors	373	700	529	404	406	411	417	423	430	436	443	449	456	463
Other non-current liabilities	23.629	20.756	22.096	32.385	32.547	32.937	33.432	33.933	35.442	35.974	36.513	37.061	37.617	38.181
Deferred tax liabilities	777	444	16.932	17.896	17.985	18.201	18.474	18.751	20.033	20.333	20.638	20.948	21.262	21.581
Provisions	1.981	1.149	1.535	5.124	5.150	5.211	5.290	5.369	6.449	6.546	6.644	6.744	6.845	6.948
Total Non-Current liabilities	714.394	573.696	622.418	580.620	517.143	462.949	438.968	270.003	195.053	226.178	277.321	208.481	279.658	280.853
Bank loans	26.959	157.122	45.467	78.693	336.000	55.000	25.000	170.000	80.000	50.000	0	70.000	0	0
Other current loans	154.668	136.443	139.404	213.720	33.347	0	0	0	0	0	0	0	0	0
Reimbursable subsidies	0	0	11.695	71	0	0	0	0	0	0	0	0	0	0
Suppliers	82.687	66.609	56.343	60.035	59.929	63.126	64.073	65.034	66.010	67.000	68.005	69.025	70.061	71.111
Other current creditors	39.869	8.233	6.680	6.395	6.427	6.504	6.602	6.701	7.801	7.918	8.037	8.158	8.280	8.404
State and other public entities	13.607	1.736	5.091	1.914	1.924	1.947	1.976	2.005	3.036	3.081	3.127	3.174	3.222	3.270
Other current liabilities	19.673	28.370	35.221	31.631	31.789	32.171	32.653	33.143	34.640	35.160	35.687	36.222	36.766	37.317
Derivatives	23.457	14.752	22.114	6.489	6.521	6.600	6.699	6.799	7.901	8.020	8.140	8.262	8.386	8.512
Total Current liabilities	360.920	413.265	322.015	398.948	475.937	165.348	137.003	283.683	199.388	171.179	122.997	194.841	126.714	128.615
Total Liabilities	1.075.314	986.961	944.433	979.568	993.080	628.296	575.971	553.685	394.441	397.357	400.318	403.322	406.372	409.468
Total Shareholders' funds and Liabilities	1.190.476	1.127.724	1.128.360	1.221.377	1.274.742	943.275	936.960	960.164	859.691	917.442	985.914	1.048.678	1.119.128	1.183.839

Income Statement

	2010	2011	2012	2013	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Sales	488.856	472.337	522.314	550.432	528.228	543.606	565.519	560.099	574.577	571.560	587.856	582.757	601.445	597.290
Services rendered	2.476	7.008	7.793	8.638	7.275	7.472	7.805	7.699	7.912	7.844	8.086	7.984	8.263	8.176
Other income	9.045	7.257	12.720	13.500	13.726	14.465	14.682	14.902	15.125	15.352	15.583	15.816	16.054	16.294
Total Revenues	500.377	486.602	542.827	572.570	549.228	565.543	588.005	582.700	597.615	594.757	611.524	606.557	625.761	621.761
% yearly growth		-2,8%	11,6%	5,5%	-4,1%	3,0%	4,0%	-0,9%	2,6%	-0,5%	2,8%	-0,8%	3,2%	-0,6%
Cost of sales	163.535	201.463	208.834	240.344	241.154	250.550	259.146	259.552	264.260	266.139	271.925	272.885	280.087	281.722
External supplies and services	119.497	129.240	144.558	151.341	150.902	158.948	161.332	163.752	166.208	168.701	171.232	173.800	176.407	179.054
Payroll expenses	34.859	33.229	31.488	27.376	26.977	27.300	27.710	28.126	28.548	28.976	29.410	29.852	30.299	30.754
Provisions and Impairment losses	158	80	4.544	-25	0	0	0	0	0	0	0	0	0	0
Other expenses	22.232	9.464	10.353	12.134	12.337	13.001	13.196	13.394	13.595	13.799	14.006	14.216	14.429	14.646
Total Expenses	340.281	373.476	399.777	431.170	431.370	449.800	461.384	464.823	472.611	477.615	486.573	490.753	501.223	506.175
% yearly growth		9,8%	7,0%	7,9%	0,0%	4,3%	2,6%	0,7%	1,7%	1,1%	1,9%	0,9%	2,1%	1,0%
EBITDA	160.096	113.126	143.050	141.400	117.858	115.743	126.621	117.876	125.003	117.142	124.951	115.804	124.539	115.586
% yearly growth		-29,3%	26,5%	-1,2%	-16,6%	-1,8%	9,4%	-6,9%	6,0%	-6,3%	6,7%	-7,3%	7,5%	-7,2%
Amortization and Depreciation	51.195	52.260	48.862	49.236	48.841	44.984	41.620	38.690	36.142	33.932	32.019	30.368	28.947	27.731
Other indirect taxes				3.423										
EBIT	108.901	60.866	94.188	88.741	69.017	70.759	85.001	79.187	88.861	83.210	92.933	85.437	95.591	87.855
% yearly growth		-44,1%	54,7%	-5,8%	-22,2%	2,5%	20,1%	-6,8%	12,2%	-6,4%	11,7%	-8,1%	11,9%	-8,1%
Gains and losses in associated companies and joint ventures	1.387	1.178	2.302	2.305	2.305	2.317	2.344	2.379	2.415	2.451	2.488	2.526	2.563	2.602
Financial expenses	-36.094	-43.885	-39.905	-30.986	-27.374	-27.374	-22.601	-16.980	-15.047	-14.599	-9.690	-9.870	-9.950	-9.910
Financial income	3.848	9.447	4.281	5.223	2.937	2.937	2.425	1.822	1.614	1.566	1.040	1.059	1.067	1.063
Financial Profit	-30.859	-33.260	-33.322	-23.458	-22.132	-22.121	-17.832	-12.779	-11.018	-10.581	-6.162	-6.286	-6.319	-6.245
Profit Before Income Tax (EBT)	78.042	27.606	60.866	65.283	46.885	48.638	67.169	66.408	77.843	72.628	86.770	79.151	89.272	81.610
Income tax	-16.627	-2.437	-8.661	-9.917	-7.033	-15.321	-21.158	-20.918	-19.072	-17.794	-21.259	-19.392	-21.872	-19.994
% tax	21,3%	8,8%	14,2%	15,2%	15%	31,50%	31,50%	31,50%	24,50%	24,50%	24,50%	24,50%	24,50%	24,50%
Consolidated Net Profit	61.415	25.169	52.205	55.366	39.852	33.317	46.010	45.489	58.772	54.834	65.512	59.759	67.401	61.615

PRODUCTION

Production (ton)	2009	2010	2011	2012	2013	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
CAP max															
Celbi (BEKP)	700000	398.300	539.800	599.279	625.760	666.457	667.443	700.000	700.000	700.000	700.000	700.000	700.000	700.000	700.000
% growth			35,5%	11,0%	4,4%	6,5%	0,1%	4,9%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Celtejo (BEKP)	220000	115.300	133.200	140.982	193.120	217.726	220.000	220.000	220.000	220.000	220.000	220.000	220.000	220.000	220.000
% growth			15,5%	5,8%	37,0%	12,7%	1,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Caima (DP)	105000	141.200	113.600	106.979	90.851	88.779	96.890	105.000	105.000	105.000	105.000	105.000	105.000	105.000	105.000
% growth			-19,5%	-5,8%	-15,1%	-2,3%	9,1%	8,4%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Total	654.800	786.600	847.240	909.731	972.962	984.333	1.025.000	1.025.000	1.025.000	1.025.000	1.025.000	1.025.000	1.025.000	1.025.000	1.025.000

SALES

Sales (ton)	2009	2010	2011	2012	2013	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Celbi		n.d.	n.d.	618.681	657.956	658.099	682.500	697.200	689.500	693.000	688.800	694.400	687.400	695.800	690.200
Celtejo		n.d.	n.d.	210.424	214.936	216.920	214.500	219.120	216.700	217.800	216.480	218.240	216.040	218.680	216.920
Caima		n.d.	n.d.	93.191	91.499	95.533	102.375	104.580	103.425	103.950	103.320	104.160	103.110	104.370	103.530
Total	677.300	805.900	826.000	922.296	964.391	970.552	999.375	1.020.900	1.009.625	1.014.750	1.008.600	1.016.800	1.006.550	1.018.850	1.010.650

DATA

DATA	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Inflation	0,50%	1,20%	1,50%	1,50%	1,50%	1,50%	1,50%	1,50%	1,50%	1,50%
EURIBOR 6M	1,26%	1,25%	1,22%	1,19%	1,13%	1,18%	1,27%	1,31%	1,29%	1,31%

APV VALUATION

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
EBIT	69.017	70.759	85.001	79.187	88.861	83.210	92.933	85.437	95.591	87.855
Taxes on EBIT	21.740	22.289	26.775	24.944	20.438	19.138	21.374	19.650	21.986	20.207
Depreciation	48.841	44.984	41.620	38.690	36.142	33.932	32.019	30.368	28.947	27.731
CF from Operations	96.118	93.454	99.845	92.933	104.565	98.004	103.577	96.154	102.553	95.379
Investment in WC	-23	5.507	3.232	2.250	3.778	2.938	3.531	3.288	3.339	2.390
CAPEX	16.500	16.698	16.948	17.203	17.461	17.723	17.988	18.258	18.532	18.810
FCFF	79.641	71.249	79.664	73.480	83.327	77.343	82.058	74.608	80.682	74.179
Discount factor	0,9314	0,8675	0,8080	0,7526	0,7010	0,6529	0,6081	0,5664	0,5276	0,4914
PV FCFF	74.179	61.811	64.371	55.302	58.411	50.498	49.902	42.260	42.566	36.451
Terminal Value										603.882
Value of unlevered firm	1.139.634									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Interest tax shields	8.623	7.119	5.349	4.740	4.599	3.052	3.109	3.134	3.122	3.134
Discount factor	0,9532	0,9086	0,8661	0,8255	0,7869	0,7501	0,7150	0,6815	0,6496	0,6192
PV ITS	8.219	6.469	4.632	3.913	3.619	2.289	2.223	2.136	2.028	1.941
Terminal Value ITS										50.131
PV ITS	87.600									
Bankruptcy costs	131.058									
Enterprise Value	1.096.175									
Net debt	563.200									
Equity Value	532.975									
# shares	205.131.672									
price per share	2,60									

LOANS	Current	Non current	Total	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Bank loans	78.877	75.000	153.877	75.000	75.000	50.000	25.000	0	0	0	0	0	0
Bank overdrafts	79	0	79	0	0	0	0	0	0	0	0	0	0
Bank loans	78.956	75.000	153.956	75.000	75.000	50.000	25.000	0	0	0	0	0	0
Commercial paper	181.900	66.000	247.900	66.000	30.000	0	0	0	0	0	0	0	0
Bond loans	0	375.000	375.000	375.000	75.000	75.000	75.000	0	0	0	0	0	0
new Bond loans	0	0	0	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000
Other loans	33.347	0	33.347	0	0	0	0	0	0	0	0	0	0
Other loans	215.247	441.000	656.247	641.000	305.000	275.000	275.000	200.000	200.000	200.000	200.000	200.000	200.000
Total loans	294.203	516.000	810.203	716.000	380.000	325.000	300.000	200.000	200.000	200.000	200.000	200.000	200.000

Loans payments	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Bank loans											
Capital	78.877	0	25.000	25.000	25.000	0	0	0	0	0	153.877
Interests	7.283	3.845	4.261	3.141	1.881	0	0	0	0	0	20.411
Bank overdrafts											
Capital	79	0	0	0	0	0	0	0	0	0	79
Interests	1	0	0	0	0	0	0	0	0	0	1
Commercial paper											
Capital	181.900	36.000	30.000	0	0	0	0	0	0	0	247.900
Interests	7.599	2.282	1.204	0	0	0	0	0	0	0	11.085
Bond loans											
Capital	0	300.000	0	0	75.000	0	0	0	0	0	375.000
Interests	5.169	6.644	1.745	2.196	3.128	0	0	0	0	0	18.882
New Bond loans											
Capital	0	0	0	0	70.000	80.000	50.000	0	70.000	0	270.000
Interests	6.599	9.830	9.770	9.710	9.590	9.690	9.870	9.950	9.910	9.950	94.869
Other loans											
Capital	33.347	0	0	0	0	0	0	0	0	0	33.347
Interests	723	0	0	0	0	0	0	0	0	0	723
Total											
 Capital	294.203	336.000	55.000	25.000	170.000	80.000	50.000	0	70.000	0	1.080.203
 Interests	27.374	22.601	16.980	15.047	14.599	9.690	9.870	9.950	9.910	9.950	145.971