Mergers and Acquisitions:

Case study of Portucel and Altri

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Abstract

The Portuguese pulp and paper market has currently two main players which are Altri (on the pulp side) and Portucel (on the paper side), however this is a small market if we compare it with others like the Scandinavian or the North American ones. This makes the global pulp and paper market a very competitive one with companies that are much larger than the ones at study, nonetheless both Altri and Portucel are recognized by their high quality products and brands. Not only that, both these two firms are always aiming at being more competitive and efficient by lowering their costs, and currently they are one of the most operationally efficient companies in the industry.

This paper will aim to provide arguments for the merger between Altri and Portucel, the main one analyses the added value that could be created through this merger by consolidating the strengths of these two Portuguese players. In this way, literature in valuation and in M&A will be reviewed and used to give strong arguments to the standalone valuation and the synergies that may occur in from this merger.

Altri's has been found to be undervalued along 2011 with a 13% upside potential, with synergies amounting to EUR 29,73 million. Hence this gives a premium of 25% over Altri's share price at 31-12-2013, the acquisition is expected to be paid entirely with cash.

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1. The purpose in Mergers and Acquisitions

The tendency in the private equity industry over the years has been of a steep positive growth as it is expressed in the rise of deals in value and number, Viral V. Acharya et all (2007) this growth was noted in the more mature market in the United States and also in Europe where this particular market almost did not exist in the 1980's. Although with the subprime crisis in 2007 the industry was very damaged due to the excessive lending that was taken in the deals, particularly in the markets mentioned above, now with the economic issues that are arising in Europe and in the U.S can bring a somewhat dangerous environment in the next years but it is important to keep in mind that according to Karen H. Wruck (2008) private equities are prone to economic cycles.

The commitment of managers towards the its shareholders has been the primary focus of value creation in firms, in this way Mergers and Acquisitions have throughout the years been accomplished with the purpose of creating value to shareholders of both companies. The rationale behind this argument is that when putting together, two firms can achieve more value to their shareholders than the two companies separately.

This added value is studied in 2005 by Damodaran, where the author calls it synergy, this occurs when the two firms combined can achieve opportunities that individually could not. The synergy can translate at an operating level or financial level of the firms and in the end it will end up generating higher cash flows, by for example lowering operational costs, or lowering the discount rate, that could be because of a higher debt capacity.

This part of the paper has the objective to provide an insight on corporate theory in which M&A valuations are based upon, it will follow (1) a theoretical guideline; (2) M&A reality.

1.1 Theoretical guideline

For any proper M&A valuation solid theoretical background is required in order to achieve the price for which the maximum value for all shareholders involved, in this way this part of the paper is needed to provide and explain the necessary tools. Although there are a large number of ways of performing a valuation each of them requires different information, as such the choice of the most appropriated method will depend on the information available of the firms.

Although the use of discounted cash-flows method with the comparables method allows a more correct value of the deal according to Steven Kaplan et all (1996). Luehrman (1997) concluded that each relevant part of the valuation; operations, opportunities and ownership claims; requires a different valuation method. In this way the information available regarding the industry, the nature of the company, the opportunities at hand and the ownership claims will be essential in the choice of the valuation approach. Although the academia agrees that one should use more than one valuation method in order to mitigate specific disadvantages that exist in each model.

In order to understand the multiplicity of methods used in valuation and how they can change through each author, we will demonstrate the several models that are recognized by Pablo Fernández (2004) and Damodaran (2006). Although there are clear divergences in each author there is an important common ground in some models considered.

According to first author there are six main groups of valuation methods, but the author states that not all of them are normally used in firm valuation:

Balance Sheet	Income Statement	Mixed (goodwill)	Cash-flow Discounting	Value Creation	Options
Book Value	PER multiple	Union of European Accounting Experts	FCFE	EVA	Black and Scholes
Adjusted Book Value	Sales Multiple		Dividend Model	Dynamic ROE	Investment Option
Liquidation Value	EBITDA multiple	Abbreviated Income	FCFE	Economic Profit	
Substantial Value	Other multiples		CCC	Cash Value Added	
			APV		

The second author on the other hand divides the approaches into to four groups; the discounted cash flow relates the value of an asset to the present value of the future expected cash flows of that asset, the liquidation and accounting valuation is much like the balance sheet of the former author it is values the existing assets of the firm with accounting estimates, the relative valuation estimates the asset value by looking at comparable assets relative to a variable (sales, EBITDA, etc..), the last approach is the contingent claim valuation that uses option pricing models to measure the value of the asset, it is probably the most complex approach of all.

This last one is also referred by Luehrman (1997) has a very important method in the valuation of opportunities in which the future investments depend on a crucial unknown fact that can make this opportunity not viable. This is because in the case of an opportunity that has more certainty on its cash-flows it can be assessed as a regular project with a DCF approach.

The discounted cash flow valuation is the most studied and analyzed in the academia, and it is the main guideline for the other approaches, and according to the above mentioned author although all valuation approaches consider risk, cash and time; specific structural issues of the problem makes each valuation unique. This means that it is not necessary to use all valuation techniques in the same valuation as they consider the same three assumptions mentioned above. Nevertheless it is important to mention that the use of several valuation techniques in order to minimize the specific weaknesses of each method. As such this part of the paper will focus on the relative valuation and discounted cash flow (WACC and APV) approaches.

The WACC approach considers all the projected cash-flows and sum them considering the time value of money, which means that these cash-flows in the future do not have the same value as if they were considered today, that is when the valuation is being made. So this approach discounts the several cash-flows using an opportunity cost of capital that is called weighted average cost of capital (WACC), this rate reflects the cost of doing the business and it is given by a mix of the cost of equity and the cost of debt, these two will be later on explained in this paper.

The APV approach follows the same steps as the former approach, although the cash-flows are discounted to the unlevered cost of capital, the latter represents the cost of the business if this one was financed only through equity. In a last step, this model sums up the benefits of the business being financed with debt and discounts those benefits at an appropriate discount rate, which normally is the cost of debt but in the academia it is one subject that a consensus is not reached.

1.2 Discounted cash-flow approach

This method discounts back to the present all future cash-flows that the firm will generate, Frykman and Tolleryd (2003). This will involve forecasts on the returns on the investment made (ROIC), growth rate (g). In this way generally the cash-flows are estimated for some periods (explicit value) and after they are expected to grow at a constant rate for and infinite time (terminal value), the latter is based on the assumption that the business it is not expected to end in the future. Finally this approach will account for time value and business risk where the cash-flows will be discounted to a rate that reflects the risk of the business at hand. Although in practice there are differences in the WACC and APV method, both of them are based under the before mentioned guidelines, these differences were briefly presented earlier although in this section they are going to be analyzed with greater deepness.

1.2.1 The cost of capital

The cost of capital is a very important notion in valuation as it is the rate of opportunity cost for which a business with similar risk to the one being assessed. This cost will depend on the expected return that the shareholders and the debtholders have on the business at hand, Hitchner (2003), agrees with this statement by saying that the cost of capital is the expected return that the investors have on the business, as it will be analyzed in this paper.

Regarding the cost of debt (R_d), it is the firm's cost of borrowing funds to finance projects, which can be associated with the sum of a risk-free rate and a spread associated with the risk of default of the company, since interests are tax deductible we must consider the tax effect that will give us the after-tax cost of debt.

$$After-tax\ cost\ of\ debt = Pre-tax\ cost\ of\ debt * (1 - tax\ rate)$$

According to Damodaran (2002) the default risk can be estimated by synthetic rating by using the interest coverage ratio for firms which can be associated with a debt rating table (EBITDA/Interest payment). Another way to assess the cost of debt would be to find the weight the interest payments have on financial debt (Hitchner, 2003). However Koller et all (2005), state that the cost of debt can be assessed also by using the yield to maturity of the firm's long-term bond, this of course can only be plausible for public traded firms which is the case of the firms at study. For the analysis of the cost of capital and throughout the whole valuation we will consider Net debt (Short-term debt + Long-term debt – Cash and equivalents). Despite the fact that there more than one way of computing the cost of debt, it is only by computing the former in several ways that one can establish a more reliable solution. Hence, in this paper it the cost of debt will be ascertained using several different methodologies.

In what concerns the cost of equity (R_e), the academia suggest that the CAPM model (Modigliani and Miller, 1980) as the one to be used, in this model the return of any asset is the sum of a risk-free rate (R_f) with the risk-premium that will fluctuate according to a variable that changes with the market (β). According to the CAPM the cost of equity of a firm when it is totally financed by equity it is called unlevered cost of capital (R_u).

The inputs of the following equations will be later on analyzed in the paper.

$$R_e = R_f + \beta_l (R_m - R_f) \qquad R_u = R_f + \beta_u (R_m - R_f)$$

In the end it is possible to obtain the weighted average cost of capital (WACC), this rate represents the business risk. This rate is obtained by summing the cost of equity and the after-tax cost of debt weighted to their proportion in the capital structure, which is the weight of equity and debt. This approach assumes that the capital structure and the costs of debt and equity are fixed and there is a tendency in using book values for the capital structure, these two limitations contribute to a poor valuation of the assets at place.

$$WACC = R_e \times \frac{E}{D+E} + R_d \times \frac{D}{D+E} \times (1 - T_c)$$

Luehrman (1997) is of the opinion that the WACC model is an obsolete standard nowadays due to the fact that the simplicity factor, when in comparison with other DCF models, no longer is relevant because computer programs can easily assess a business through more complex models like the Adjusted Present Value (APV). In order to surpass the short coming of the capital structure it will be suggested in the present paper to take out the capital structure from the one assessed by the APV model, this approach enters in the same type as the one proposed by Damodaran (2002) where it is done one iteration to find out the capital structure, although the former author uses the WACC model for the iteration. Frykman and Tolleryd (2003) suggest that it is important to find a target capital structure, through the competitors leverage ratio, through the own firm's market value level of leverage and through the assessment of the ratio that brings the lowest cost of capital.

1.2.1.1 Risk-free rate

An asset is defined riskless when its future cash-flows are certain this implies that the expected return is equal to the actual return, this is also referred as the cost of money (Hitchner, 2003). The best way is to use long term U.S government bonds, the most used is a 10 year Treasury bond due to the consistency of its duration with the project's duration. However the subprime crisis in 2007 and particularly the sovereign debt crisis that came as a consequence of the former, the concept of riskless asset became a bit blurred, as such the most common now it is the German bonds for the Euro market than using the company's home country.

1.2.1.2 Market risk premium

Riskier investments should have higher expected returns than safer ones, and thus the expected return can be measured as the sum of a risk-free rate plus a risk premium to compensate the risk, according to Koller et all (2005) this additional expected return stimulates the investment in the financial markets instead of just investing in long-term government bonds.

This additional risk can be measured by looking at the historical premium earned by stocks (like a weighted stock index as the S&P 500) over default-free securities over a long period of time. Additionally, Damodaran, in 2011, states that there should be consider an additional risk premium relatively to the country default risk if only the risk cannot be diversified. In this case we must consider the liquidity of the Lisbon stock market where Portucel and Altri are traded.

According to the same paper the Equity risk premium for any given country is obtained by:

$$\text{Equity risk premium}_{\text{home country}} = \text{Equity premium}_{\text{mature market}} \times \text{STD}_{\text{home country}} / \text{STD}_{\text{mature market}}$$

$$\text{Country risk premium}_{\text{home country}} = \text{Equity risk premium}_{\text{home country}} - \text{Equity premium}_{\text{mature market}}$$

According to the former author the average total return on the S&P 500 from 2001 and 2007 has been 4.02%, this can give an idea of the expected return on a mature market. This notion of country risk premium is an essential part in the assessment of the additional expected return that shareholders have on Portucel and Altri, even if we consider that the German Bund as the risk-free asset, this will translate in an additional return that is applicable to mature markets. But the recent crisis in 2007 has change Portugal's economy dramatically and since then its state has been characterized by high levels of debt, recession, negative returns in the stock exchange, political and fiscal instability, to the point that it was needed an intervention from the IMF. This means that we cannot state that investors from Portucel and Altri will expect the same returns as investors of similar firms in Germany or France, in this way this notion of country risk premium gains additional important in our valuation. Athoner way of determing this additional premium when someone is investing in these markets would be to look at the CDS of that country, as this gives the return that the market is willing to accept in or to buy protection for the Debt of that specific country.

1.2.1.3 Beta

The beta is a measure of sensitivity of the business towards shifts in the market, which implies that if the beta is close to 1 or -1 the more sensitive the business is against economic depressions and booms, the systematic risk. This is another aspect where some within the academia are in agreement; the levered beta (β_l) is assessed through the CAPM model where it is made a regression that relates the return of the stock with the return of an equity benchmark, like the S&P 500 or the MSCI World Index.

Koller et all (2005) points out that one should also compute the industry's levered beta in order to have an additional measure that can mitigate biases results. For Damodaran (2002) we can estimate the unlevered beta (β_u) by finding out the weighted average levered beta (β_l) of the comparable firms and then deleveraging the beta.

$\beta_u = \beta_l / [1+ (1-T) * (D/E)]$

According to the same paper the levered beta will always be higher due to the debt interest payments that result in high income in good times and at the same time makes the firm riskier to default. Due to its historical nature in estimation, one should always consider analysts forecast of the unlevered beta in order to have a more forward look of the business. In the deleveraging of the beta, there will be the problem of assessing the correct capital structure but as it will be mentioned in this paper it is possible to determine a target capital structure.

1.2.2 Free cash-flow to the firm model (FCFF) or WACC model

Although it is considered an obsolete standard by many of the academia particularly by Luehrman, it is still one of most used not only due to its simplicity but because it has became a standard in Corporate Valuation, and it is always an important method that enables the analyst to compare it with other valuation approaches. This model values a firm based on the expected future free cash-flows to the firm (FCFF) and then, taking in consideration the time value of money, discounts them at the weighted average cost of capital (WACC) which represents the cost of doing business and thus it is the expected return that all investors have on the company.

Enterprise Value = $\sum_{i=1}^{n} \frac{FCFF_i}{(1+WACC)^i} + \frac{FCFF_{n+1}/(WACC-terminal\ g)}{(1+WACC)^n}$

This model divides itself in the estimation of future cash-flows to a certain point (explicit period) and afterwards the terminal value is subsequently computed. In this paper it is proposed an explicit period of 5 years.

$FCFF = EBIT \times (1-T) - CAPEX + Dep. - \Delta NWC \pm \Delta Other\ non\ cash\ items$

The FCFF is the gain after all the operations but before any distributions (interest payments or dividends). All these estimated cash-flows are then discounted to the WACC rate. It is important to consider that this model give us the enterprise value, as such in order to find the equity value it is necessary to deduct debt. Regarding the last phase of this process, the estimation of the terminal value (TV), this is the main responsible for the value of the business and it is very sensitivity as such the estimation of the growth rates applied, especially the terminal growth rate.

1.2.2.1 Growth rate

According to Palepu et all (2008) a firm's sustainable growth rate (g) is the product of the return on investment capital (ROIC) with the reinvestment rate, it is the rate at which the firm can grow without changing its operating, investment and financing policies.

$$g = \begin{cases} Reinvestment\ rate = \frac{CAPEX - Dep. + \Delta NWC - \Delta Debt}{Net\ Income} \\ \quad \times \\ ROIC = \frac{Net\ Income}{Total\ Assets - Excess\ Cash - Non\ Interest\ Bearing\ Current\ Liabilities} \end{cases}$$

When estimating the terminal growth rate we have to consider the growth of the economy, which is inflation, Hitchner (2003) states that many analysts use a rate between 3% and 6%, with these considerations we eliminate a possible bias sustainable growth rate from the above equation. One should also take in consideration the growth rate for the industry as an additional comparable. Also in the long run it is assumed that the capital expenditures will be equal to the depreciations.

1.2.3 Adjusted Present Value Model (APV)

This model was firstly presented by Myers (1974), and according to the academia it is the dominant model in the approach of discounted cash-flow, and the best for the assessment of business operations. This model is more flexible as it needs a less amount of assumptions, mainly regarding debt equity ratios and can give the analyst more information than merely the value of NPV, as it can be separated into several parts that allow to ascertain where the added value from operations is coming from.

This model can be used in the simplest businesses as the WACC and also it can be used in more complex cases where the firm is high leveraged or the debt equity ratio changes significantly throughout the valuation period Koller et all (2005). Firstly the firm's expected future cash-flows are discounted to an unlevered cost of capital that treats the firm as an unlevered one, this cost represents the cost of doing business if the company would be only financed through equity. Secondly it is added the benefits of debt (interest tax shields). Thirdly it is subtracted the costs of debt (costs of financial distress). These cash-flows in the two last steps are both then discounted at an appropriate rate that usually tends to be the cost of debt. Nevertheless the estimation of the last step is a very complex one, because it is the one that tends to need more assumptions.

$$Unlevered\ Value = \sum_{i=1}^{n} \frac{FCFF_i}{(1+R_U)^i} + \frac{FCFF_{n+1}/(R_U - terminal\ g)}{(1+R_U)^n}$$

The signature of this model is that the discount rate only takes in account the time value and the risk premium, thus it needs fewer assumptions than the WACC model, in practice the procedure is the same as the WACC except the cash-flows will be discounted at the unlevered cost of capital. This will bring up the next step of valuing the benefits of debt in the business.

$$Present\ Value\ of\ Tax\ Shields = \sum_{i=1}^{n} \frac{D_i \times R_D \times T_C}{(1+R_D)^i} + \frac{D_i \times R_D \times {T_C}/(R_D - g)}{(1+R_D)^n}$$

In the long run it is assumed that the Debt will grow at the same level as the company in order to maintain the same Debt equity ratio, this implies that the terminal growth of the tax shields are equal to the TGR (Luehrman, 1997). This is a particularly important assumption in order to facilitate what otherwise would be an hazardous endeavor that would change the entire equation for the terminal value as it would be impossible to use the perpetuity formula.

The disagreement between the scholars resides on the discount rate to be used in the tax shields. Most of the academia, like Cooper and Nyborg (2006), state that the most appropriate approach is to discount the tax shields at the cost of debt. However there can be an upwards adjustment as the tax shields are more uncertain, especially in cases of firms in stressful situations where the interest payments are paid but they cannot use the interest tax shields (ITS). This adjustment is commonly used by practitioners by adding the probability of default to the cost of debt (Damodaran, 2002).

One thing to have in mind in the computation of the interest tax shields is that, tax shields will be just the minimum amount between the interest payments after tax and the deductible tax on income, this adjustment is a crucial one as there are times in the company where the net income is equal or below zero, in these cases the firm does not pay taxes in that period which means that there are no possible ITS, and thus no advantage in the use of debt. However there are authors who disagree in the usage of the cost of debt to discount the tax shields to its present value, Kaplan and Ruback (1996) and Ehrhardt and Daves (1999) states that the tax shields have the same risk as the firm's assets, as such should be discounted at R_u. In this paper it will be used the cost of debt to discount the cash-flows from the ITS, because although they are linked to the business of the firm they are still strictly connected to the interest payments of the firm, has they come from the former payments, also they would not have existed if the firm didn't had debt.

$$Cost\ of\ Financial\ Distress\ (CFD) = \sum_{i=1}^{n} \frac{\%CFD_i \times V_{u_i}}{[1 + R_D + P(D)]^i}$$

$$P(D) = \frac{1 - e^{(R_D - R_F)}}{1 - \%CFD}$$

This is the cost the firm incurs when it defaults, Damodaran (2002) states that the percentage of loss in case of default varies from industry to industry, although it ranges from 10% to 25% of the firm's value. Also Korteweg (2007), states that the %CFD will vary not only from industry to industry but also from its own capital structure. This last study is very useful in order to determine the CFD.

$$Enterprise\ Value = V_u + [1 - P(D)] \times PVTS - P(D) \times CFD$$

The enterprise value will be given by the above equation, in relation to the ITS they are only available while the firm is operational that is why the probability of default (P(D)) is considered. For the opposite reason the CFD must also take in account the P(D) because they only occur when the company defaults. In sum not only the APV is capable of providing more information than the WACC regarding where the added value is created, but also it is a viable valuation model to simpler cases and is also applicable to more complex cases of D/E ratio with changing capital structures.

1.3 Relative Valuation (multiples valuation)

In relative valuation the objective is to value the assets based on how similar assets are priced in the market, in this way the firm in analysis will be valued accordingly to how its comparable peers behave in some ratios that are either related to the enterprise value or to the equity value. There are two main steps in this approach; firstly it is required to find similar firms in size, growth, ROIC and business industry (Hitchner, 2003), secondly it is necessary to calculate the average of some financial ratios for the comparable firms and afterwards applying it to the specific case. According to Cooper et all (2001) there are enterprise and equity multiples, the first expresses the whole enterprise value and the second gives the equity value.

The last choice is to choosing which multiples to use in the valuation, according to Koller et all (2005) it is better to use enterprise multiples because they are less affected by the capital structure. Multiples can be taken out from, sales, assets, book value, earnings and cash-flow. Normally more than one multiple is used in the comparables approach and the same multiplicity of multiples is used in all comparable firms, this way consistency is followed through and it is possible to make a valuation range for this assessment (Hitchner, 2003). Kaplan and Ruback (1996) state that the use of several multiples provides additional information to the valuations that use discounted cash-flow. It is important to state the possible shortcomings of this valuation approach, according to Cooper et all (2001) the multiples valuation has several shortcomings, they are simplistic, static and difficult to compare amongst other multiples. As such one should not trust its entire valuation of a deal entirely on multiples valuation.

According to Koller et all (2005) the multiples used should be forward-looking based on the latest data and the enterprise multiples should be adjusted to non-operating items, such as excess cash and operating leases, although this is a difficult way to assess the multiples as one should analyze all these components to each comparable firm.

1.4 M&A reality

1.4.1 Acquisitions

According to Damodaran (2002) there are several ways in which a firm can be acquired, the author first distinguishes acquisitions made by external agents and acquisitions made by internal agents to the firm. In the case of the acquisition being made by external agents it can have four different ways: merger, consolidation, tender offer and purchase of assets. In a merger the two firms agree to combine, in this type the target company ceases to exist. The consolidation takes a similar role as the previous one but with the distinction that a new firm is created after the merger and both stockholders receive stock in the new firm.

In a tender offer, a firm is willing to buy the outstanding stock of the other firm for a certain price and communicates this availability to stockholders, this is a more aggressive approach that normally happens when the two above fail, this is used for hostile takeovers, however most of the times, according to the same author, the tender offers become a merger. In a purchase of assets the acquiring firm buys the assets of the target firm through vote of the shareholders. There is the final case where the management undertakes a tender offer, this is known as a management buyout and after the deal the target firm, in the cases of publicly traded firms, can become a private entity, and if this offer is mainly made through debt it is called a leverage buyout.

1.4.2 Synergies

Synergy is the added value that comes from the combination of two separate entities, this effect is a very complex one and hard to measure, and it represents the main out of the possible rationales for the investment in M&A transactions it is fundamental that they are analyzed with special attention (Hitchner, 2003), has a miscalculation on this added value is reflected in an increase of the acquisition price thus it will be an unecessary cost that the acquiring firm will have to pay. The importance of this aspect comes with the degree of proximity between the two entities and usually it is more important horizontal and vertical transactions.

The added value in synergies appears in form of higher cash-flows or a lower discount rate, which come from operational or financial synergies Damodaran (2005). Although Koller et all (2005) distinguishes the synergies as cost and revenues in this paper it will be maintain the first authors approach. Operational synergies are able to increase the operational income, increase growth or both and the financial ones can either increase the cash-flows, lower the cost of capital or both.

According to the first author the operational synergies can happen through a combined firm that is more profitable and cost-efficient, these economies of scales are more likely to happen in horizontal mergers; greater pricing power from mitigated competition that results from a higher market share this usually occurs in horizontal mergers and concentrated industries; combination of different functional strengths or higher growth in new or existing markets. Financial synergies may occur due to excess cash and limited project opportunities of the bidding company and at the same time limited cash and high-return project opportunities on the target firm side; increase in debt capacity due to more stable cash-flows of the combined company that manifests in lower cost of capital; tax benefits from a non profitable target company and diversification of the risk by the investors although this last one is more common in private held firms. The valuation of this added value takes in the form of cash-flows that are able to compare the value of the firm with and without synergies.

1.4.3 Financing the deal

After evaluating the deal the next decision is to decide how it will be financed with cash or stock, for Bruner (2004), Sirower and Sahni (2006) and Hitchner (2003) buyers tend to favor cash deals due to expected higher stock returns than stock deals, although this is limited to the target's will because on its side it is favored a stock deal in order to take advantage of its own price increase. However further analysis on this subject is needed, because in short if the deal is financed solely by cash the acquirer takes all the risk of over valuating the synergies and the target remains equal, however in a stock deal this risk is shared and as such the potential losses and profits are taken by both of the players.

It is important to consider the accretion or dilution effects where the main factor is the P/E ratios of the two players involved, although undervaluation or overvaluation of the stock will also determine the tendency to pay the deal through stock or cash whereas in a bubble scenario it is more likely to pay with stock Koller et all (2005). It is also considered the current and the optimal capital structure and how the transaction can affect the rating of the company.

1.5 Conclusions

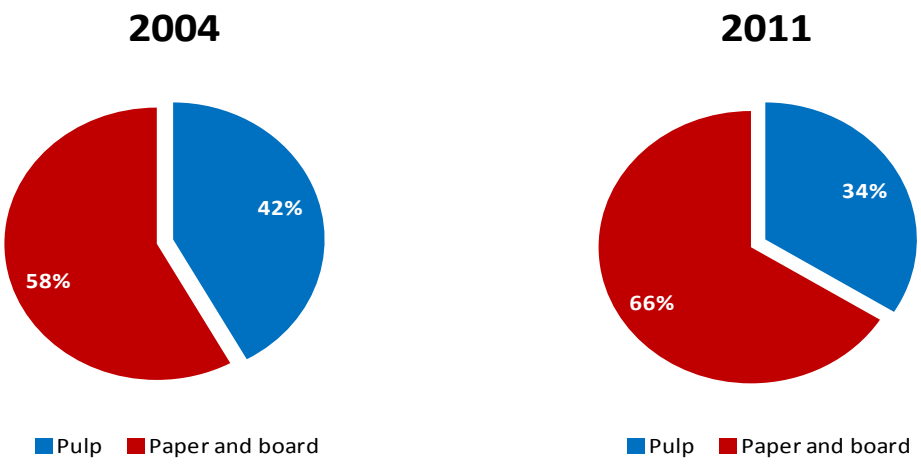
What was analyzed in these pages allows us to perceive M&A related topics as very controversial since there are many disagreements between scholars in several areas; one of those examples is the discussion of the most appropriate discount rate for the interest tax shields. Although many of the studies performed are on different and specific situations which can lead to the observed disagreement, it is important to mention that the conclusions on these deals will greatly depend on the economic and industry conjuncture (Bruner, 2004).

One aspect that is common ground for the academics is that M&A deals create value, for Damodaran (2005) it is due to the synergies in the transaction, and this added value according to Bruner (2004) and Sirower and Sahni (2006) is translated in the offset of the seller's gain to the acquirer's loss.

In sum we can see M&A transactions as an important part in the creation of value for the global economy, thus it is an important topic to study. Although, because this topic is a very complex and specific one, every aspect of the deal must be analyzed carefully in order to provide academic and economic value.

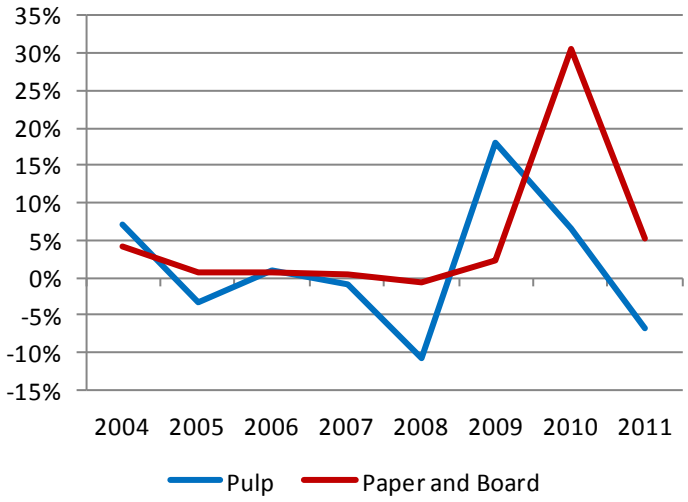
1.6 Overview of the Portuguese and European Pulp and Paper Industry

The pulp and paper industry in Portugal is worth almost 2.2 billion EUR and its production accounts for 2% of the Portuguese GDP. This is mainly due to the paper sales performance as the pulp's growth as stagnated due to more integration of its use in the production of paper which is clear in graph 1 where it can be seen decreasing importance of pulp in sales in the last years, from 42% to 34%. Although this industry faces a difficult macroeconomic environment in Portugal and Europe it has delivered solid financial results, that only can be achieved through the exportation of almost all of its products to a network of countries that enables the spread of several country risks.

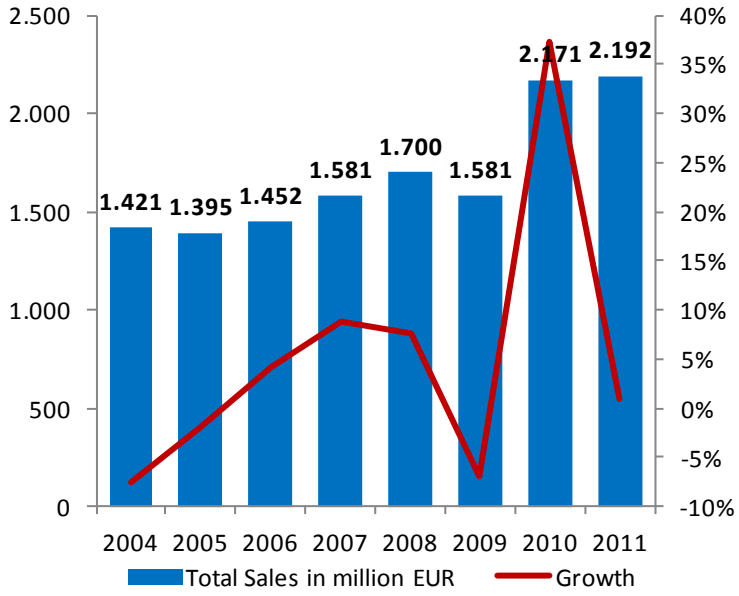


Graph 1: Weight of the quantities sold

Not only Paper and board has been growing more in turnover in the recent years but also it is in this area that it can be observed more growth in the same periods (graph 2), although this growth are very volatile there seems to be an understandable rationale behind the increasing investment in producing more paper and board than pulp due to its growth and higher added value, actually it can be seen in graph 3 that this before mentioned increase in paper and board is correlated with higher turnover in the industry.



Graph 2: Yearly growth rates



Graph 3: Yearly turnover in the pulp and paper industry (million EUR)

The main players of this industry in Portugal are: Portucel Soporcel Group, Altri Group, Renova and Euro CAP. Although this size of firms is quite considerable and good for competition the truth is that only the first one has a considerable size when comparing to other European firms of the same industry. In terms of European pulp production Portugal is ranked in number four (with 6,4% of the production) and in the European paper and board is ranked number eleventh (with 2,2% of the production).

Europe produces 25,2% of the worldwide pulp, which gives a production of 38,8 million tones, and produces 27,8% of the world paper and board, which accounts for nearly 95 million tones, in terms of turnover it reached 80,6 billion EUR. The main European players are: Svenska Cellulosa (SCA) (15,2 billion USD of sales); Stora Enso (13,7 billion USD of sales); UPM-Kymmene (11,8 billion USD of sales); Smurfit Kappa (8,7 billion USD of sales); Mondi Group (8,3 billion USD of sales); just to have a comparison with the Portuguese market, Portucel has 1,8 billion USD of sales. In terms of European M&A activity in the industry in 2010 there were three deals: the acquisition of Borregaard Skoger AS, Borregaard Vafos AS and Borresen by Statskog SF (Norwegian) for around 300 million USD; the acquisition of Tembec Saint Gaudens SAS and Tembec Tarascon SAS by Paper Excellence BV (Dutch) for 135 million USD; and the acquisition of ArjoWiggins SAS activities in Arches (France) and Dettingen (Germany) by Munksjo AB (Swedish) for 126 million USD.

1.7 Portucel Soporcel Group

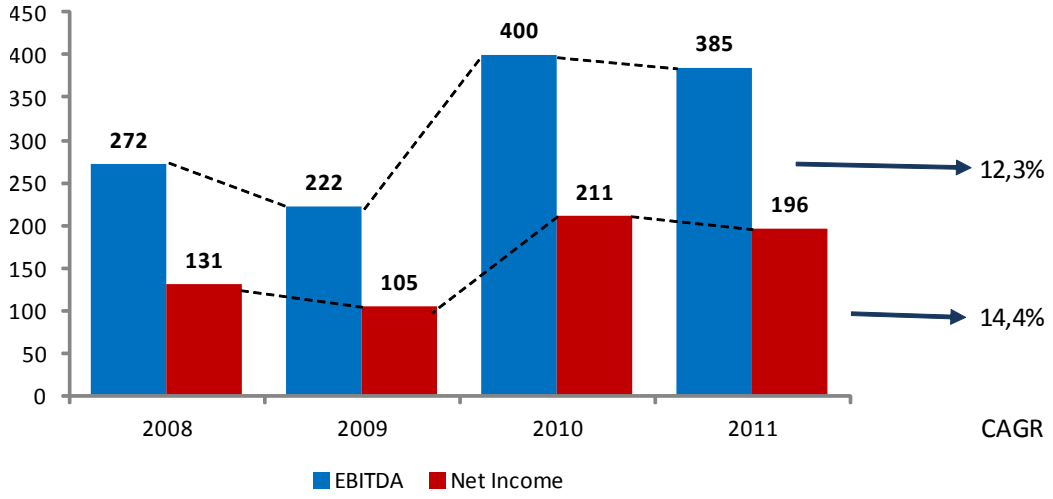
Portucel Soporcel is a Portuguese listed company that is engaged in the pulp and paper industry. The history of Portucel goes back into 1953 when the Cacia mill first started its operations, and in 1957 it became a worldwide pioneer by introducing the Kraft process in its production. After the 1974 Portucel was nationalized and remained that way until 2004 with the privatization to Semapa, another important aspect of the firm's history was the acquisition in 2000 of Papéis Inapa, which had the mill of Setúbal, and the merger in 2001 with Soporcel, an important player in the same industry. With this deal Portucel rebranded itself as Portucel and Soporcel Group and gained access to the mill in Figueira da Foz. Since then the group's main operation structure is on the mills of Cacia, Figueira da Foz and Setúbal.

In order to keep its source of raw materials the company holds 120 thousand hectares in several countries like Portugal, Brazil and Mozambique, this last one is gaining more

importance as it is the group's will to strengthen its position in the former market. The mills are supported with cutting edge technologies and solid know-how, which enables Portucel Soporcel to be the European leader in uncoated woodfree (UWF) printing and writing paper. The company is the leading producer in Portugal of renewable energy from forest biomass, which uses it to support 65% of the total electricity used.

All these characteristics allow the Group to produce worldwide paper brands, from the office paper (Navigator, Discovery, Pioneer, Inacopia and Explorer) and in the premium or Preprint varieties of the offset paper (Soporset and Inaset). Regarding the capital structure Semapa SGPS SA is clearly the main player as it owns almost 76% of the capital and almost 81% of the voting rights, Portucel has a market capitalization of 1,61 billion EUR (23rd of October of 2012).

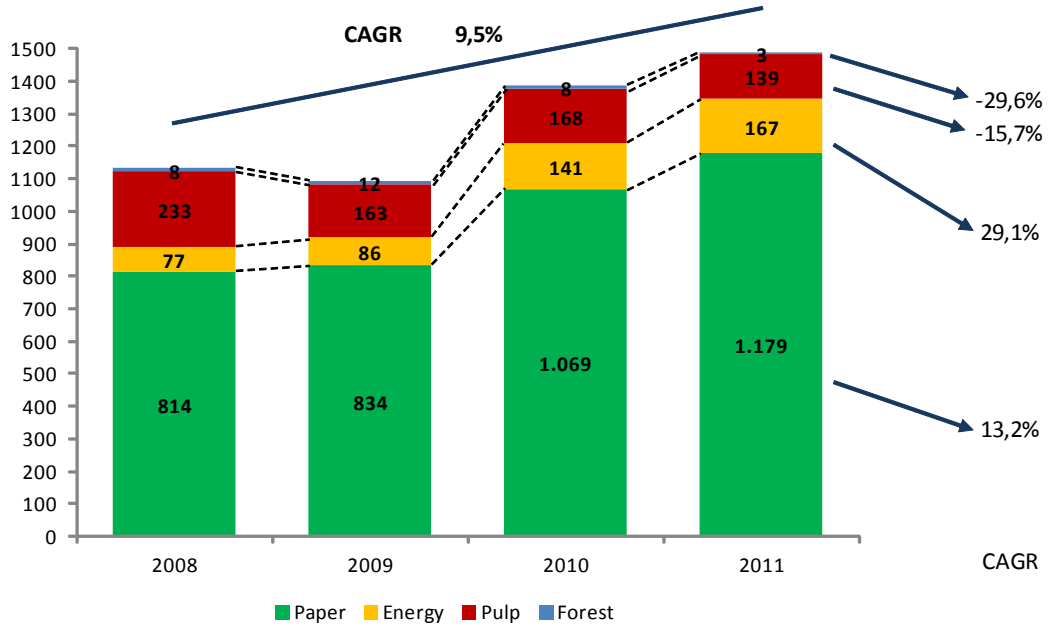
1.7.1 Financial Performance



Graph 4: Portucel's Financial Performance (million EUR)

From the analysis of Portucel's financial performance over the recent years (graph 4) we can see that this firm can be characterized by a solid and consistent EBITDA and Net Income levels, both of them also with good growth perspectives. This is the typical kind of company that every year is able to deliver cash-flows to all its investors. Hence it can also be characterized by financial stability, the latter provides enough financial slack for the company, and this is typical in cash cow firms. In conclusion to this analysis Portucel is a firm that has the financial performance required to make an M&A deal. Also, the merger with Soporcel in 2001 is a good indicator of the tendency study has on M&A that the firm at activity.

1.7.2 Revenues

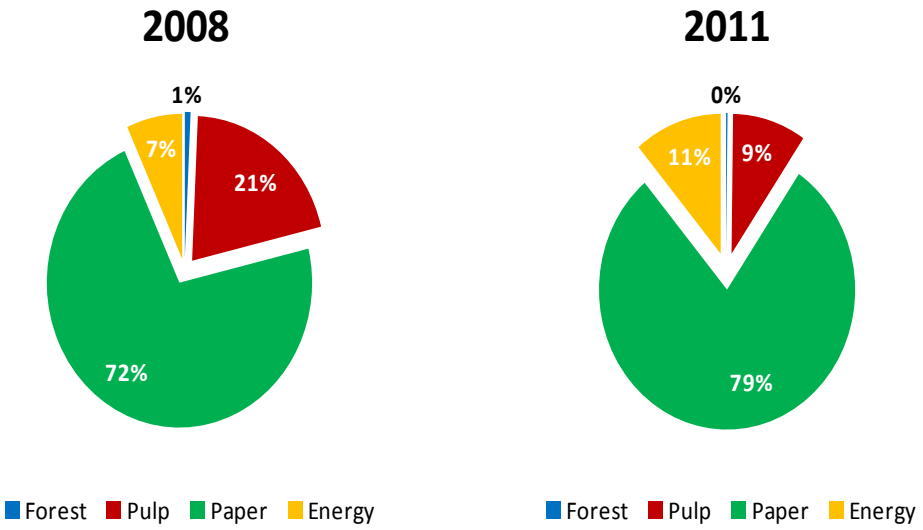


Graph 5: Portucel's Revenue Breakdown (million EUR)

From graph 5 we can understand how the revenue structure by products for Portucel has changed over the recent years, although it is clear that this company shows signs of growth (the total revenues shows an annual growth rate of 9,5%), this is not the essential question that we should be focusing on. What is important in this topic is the change overtime on the growth of each product in Portucel's revenues, in the above graph we denote.

Firstly, the decrease of forest and pulp contribution, not only in absolute value but also in proportion to the total revenues, this is due to a tendency that not only is becoming a trend in the industry but it is also embodied in the firm's strategy, the latter focuses on treating forest and pulp production as resources for the production in products with higher added value (paper and board). This decrease does not itself imply that Portucel is producing less pulp and forest products, it is happening quite the opposite, but because the firm is using more of these products for the transformation process to paper and board than before we see the steeped decrease in the CAGR of those two items along the four years, forest has an annual sales growth of -29,6% and pulp as an annual sales growth of -15,7%.

Secondly, we point out the increase in paper and energy contribution, in absolute value and in proportion to the total revenues, with a more steeped increase of the latter. In the paper it is clear that it is linked with the firm's will to bet on a product that brings more value to the company. The increasing output of energy over these years is a consequence of the group's energetic sustainability strategy which has been recognized has a success and what was at first just an area of support for the company, has now gained importance in the group. This is particularly helpful to reduce the risks of the cyclical cash-flows from paper products which can be a great help to maintain the stability of the financial performance, although this will have more effect if energy has more weight in the revenue structure. This change in the business strategy by Portucel contributed for this increase in CAGR on these products along the historical period, paper has an annual sales growth of 13,2% and energy has an annual sales growth of 29,1%.

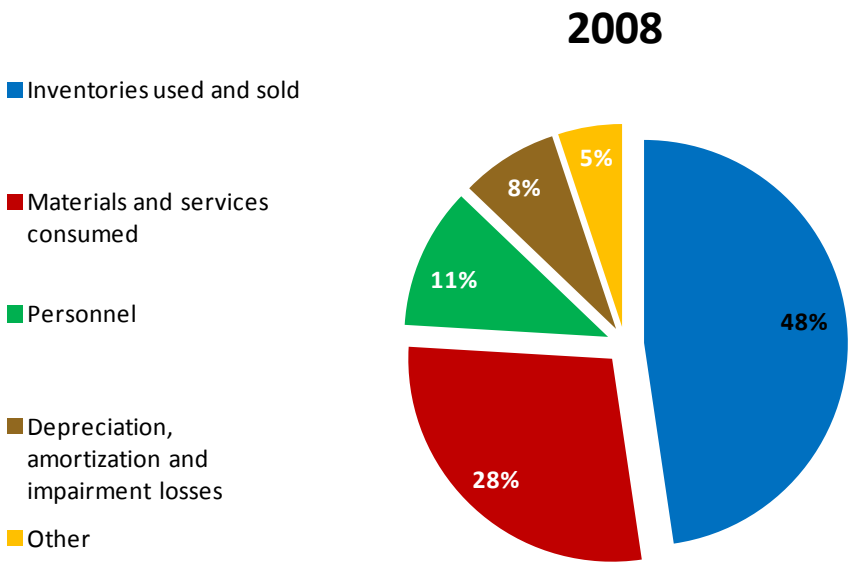


Graph 6: Portucel's Products Weights in the Revenue Structure

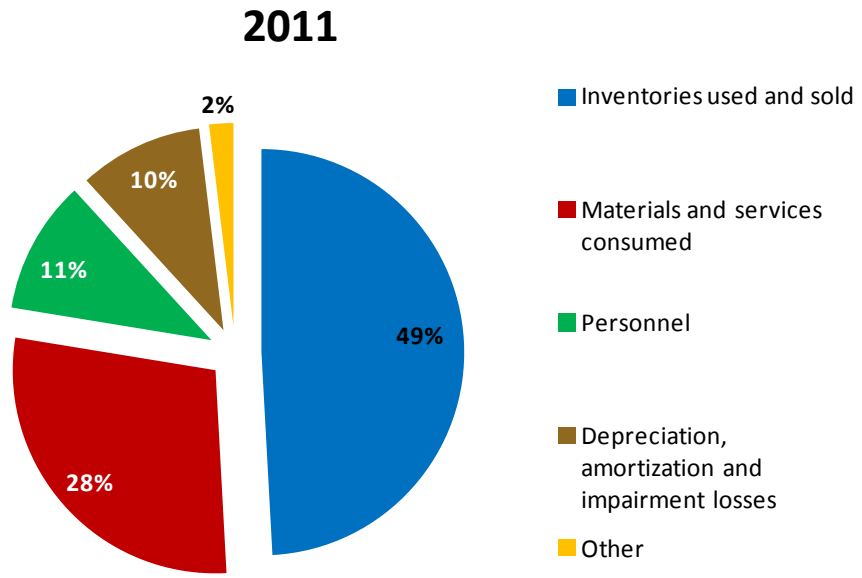
From the figure above (graph 6) it is clear the development of each product's contribution to Portucel's revenue, where it can be seen the confirmation of the decrease in proportion of forest and pulp and the increase in proportion of the paper and energy.

This information is quite important for us to have a deep understanding of the role of the Portucel's products in the company's revenues, and thus the projections regarding the revenues will have more explanatory reasons and can also be later on complemented with other sources of information. According to a research made by Fincor Corretora the projection in yearly sales growth are of 6% due to an expected increase in the paper price and a weaker EUR which is a smaller value to the one found historically. Also it is the analyst opinion that this firm will still be interesting due its premium products, increasing exposure to fast growing economies and a solid balance sheet.

1.7.3 Main Costs



Graph 7: Portucel's main costs breakdown (2008)



Graph 8: Portucel's main costs breakdown (2011)

From the above graphs it is clear that almost all costs, nearly 80%, of Portucel come from activities directly related to the business; the first, related to the inventories; the second related to materials and services consumed. Also it is important to state the decrease in proportion of costs related to inventories used and sold. Lastly we denote the increase in proportion of costs related to depreciation, amortization and impairment losses, increasing from 8% to 10% of the total costs. Nonetheless it is important for our analysis to understand how each cost has developed over the last for years not only in terms of value but also in terms of their weight to the total revenues.

Main costs	2008	2009	2010	2011	CAGR
Inventories used and sold	475,09	483,81	522,86	619,02	9,2%
Weight in revenues	42,0%	44,2%	37,7%	41,6%	n.a.
Materials and services consumed	281,80	288,95	336,91	358,30	8,3%
Weight in revenues	24,9%	26,4%	24,3%	24,1%	n.a.
Personnel	112,05	114,74	127,02	133,71	6,1%
Weight in revenues	9,9%	10,5%	9,2%	9,0%	n.a.
Depreciation, amortization and impairment losses	77,05	111,54	121,18	124,53	17,4%
Weight in revenues	6,8%	10,2%	8,7%	8,4%	n.a.
Other	50,64	1,94	34,82	24,27	-21,7%
Weight in revenues	4,5%	0,2%	2,5%	1,6%	n.a.
Total costs	**996,61**	**1.000,98**	**1.142,79**	**1.259,82**	**8,1%**
Weight in revenues	**88,0%**	**91,4%**	**82,5%**	**84,7%**	**n.a.**

Table 1: Portucel's main costs in million EUR and their weight on the revenues

This last figure (table 1) shows us how Portucel's main costs have been changing in the last years, as well as their weight in the revenues. As it is evident the main costs are growing at an annual rate of 8.1%, and their growth is lower than the 9,5% annual growth of revenues. Although in this analysis the main point is to understand how these costs relate with revenues.

As it can be seen almost all costs have grown in value over the recent years, only other costs have decreased in the same period, but what we want to point out is the positive growth in some costs over the homologous period. In this topic the costs related with depreciation, amortization and impairment losses have increased annually 17,4% from 77,05 million EUR in 2008 to 124,53 million EUR in 2011, costs related to inventories sold increased each year on average 9,1% from 475,09 million EUR in 2008 to 619,02 million EUR in 2011. This means what we have been stating throughout the analysis, which is Portucel is expanding its business and that is why costs with sales and depreciation are increasing.

This evidence clearly shows Portucel's policy on cutting costs, as they do not decrease the costs in value but they turn the firm more productive in order to have more output with the same resources which increase the company's profit margin. This information will be very helpful in the valuation part in order to provide the most accurate cost estimates, along with historical information we will also take in consideration management forecasts.

1.7.4 Capital Expenditure (capex) and Depreciation

Capex	2008	2009	2010	2011	CAGR
Forest	4,94	1,28	0,57	2,77	-17,5%
Weight in revenues	0,4%	0,1%	0,0%	0,2%	n.a.
Pulp	21,20	28,39	49,66	24,96	5,6%
Weight in revenues	1,9%	2,6%	3,6%	1,7%	n.a.
Paper	199,91	402,83	43,35	22,16	-52,0%
Weight in revenues	17,7%	36,8%	3,1%	1,5%	n.a.
Energy	27,52	89,80	2,31	3,90	-47,9%
Weight in revenues	2,4%	8,2%	0,2%	0,3%	n.a.
Total	**253,56**	**522,31**	**95,90**	**53,80**	**-40,4%**
Weight in revenues	**22,4%**	**47,7%**	**6,9%**	**3,6%**	**n.a.**

Table 2: Portucel's capital expenditure in million EUR and their weight on the revenues

In table 2 is presented the change over the recent years of capital expenditure (capex) in Portucel by product, it can be seen in value and also in percentage to the revenues. In total capex has been decreasing in value at an approximate annual rate of 40,4% from 253,56 million EUR in 2008 to 53,80 million EUR in 2011. Also from 2008 onwards the capex level decreased immensely from 22,4% of the revenues in 2008 to 3.6% in 2011. We can clearly see a negative tendency here both in weight and in value which could indicate an estimate for investment in the years to come. Although due to the macroeconomic environment in Portugal, the fact that Portucel in recent years has made heavy investment in its paper and energy sectors and knowing it is a cash cow type of firm it is not expected to make any heavy investment in the near future. In the light of this information it is highly recommended to complement this with the management forecasts, before engaging in any effort to forecast the capex level only based on the information previously presented.

Depreciation	2008	2009	2010	2011	CAGR
Forest	0,69	0,73	0,53	0,70	0,1%
Weight in revenues	0,1%	0,1%	0,0%	0,0%	n.a.
Pulp	54,06	34,07	18,19	6,73	-50,1%
Weight in revenues	4,8%	3,1%	1,3%	0,5%	n.a.
Paper	20,58	56,14	88,37	102,00	70,5%
Weight in revenues	1,8%	5,1%	6,4%	6,9%	n.a.
Energy	1,61	20,61	14,09	15,09	110,9%
Weight in revenues	0,1%	1,9%	1,0%	1,0%	n.a.
Total	**76,95**	**111,54**	**121,18**	**124,53**	**17,4%**
Weight in revenues	**6,8%**	**10,2%**	**8,7%**	**8,4%**	**n.a.**

Table 3: Portucel's depreciation in million EUR and their weight on the revenues

In the above figure (table 3) it is possible to look at the development of depreciation, in value and as percentage of revenues, in Portucel by each product. As the analysis of capex, here too we will be focusing our analysis on the developments in value and in terms of weight to revenues.

Depreciations have been increasing in value at an annual rate of 17,4%, the responsible for this increase are the paper and energy sectors, the former increased on average 70,5% each year and the latter 110,9% per year, this clearly confirms Portucel's strategy of betting in the these two mentioned sectors as they're found to have more added value. In terms of weight on the revenues we see that they have increased over the historical period from 6,8% in 2008 to 8,4% in 2011. Although these values are more reliable to forecast depreciation levels in a near future, it would be good to add the management forecasts on this subject in order to have better estimates of depreciation values in the explicit period.

1.7.5 Conclusions

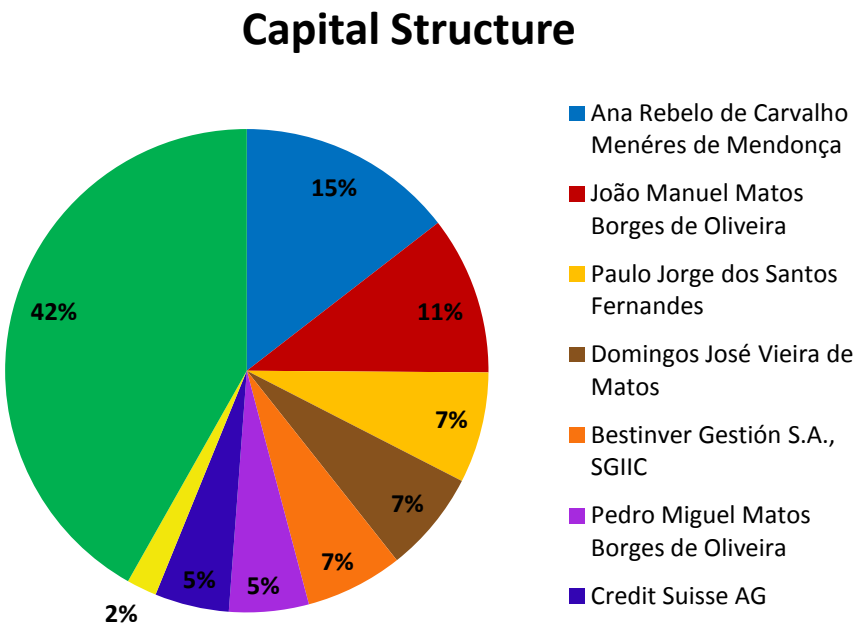
The historical information found here evidences that Portucel is in fact expanding its operations, as we saw that revenues, costs and depreciation are growing throughout the years and between the last two only the former is growing more than revenues. This is another important aspect as it shows the firm's willingness and capacity to invest and expand its business, which is one of the rationales for the proceeding with the deal at hand. On a final note, the historical findings in capex do not necessarily mean that Portucel will disinvest in a near future in fact the increasing depreciations justify the opposite conclusion, what is clear is that the firm does not invest on a constant basis but on a cyclical basis, because one will not replace several costly machines constantly in several years but in a single year in case of need.

1.8 Altri Group

Altri Group is a Portuguese listed company engaged in the pulp industry. The group's history begins in 2005 resulting of a restructuring process of Cofina through a spin-off of the industrial assets, by this time Altri was in the steel, paper and pulp business and owned only the Caima mill for pulp. Although in 2005 acquired Celtejo mill and in 2006 bought Celbi mill and EDP Bioeléctrica, which allowed a rapid growth of the company, later in 2008 it was made a spin-off of Altri's steel retailer and in this same year Altri closed its paper mill and with these operations the firm began just operating in pulp industry. Since then, the firm's core business has been pulp and it produces in the Celbi, Caima and Celtejo mills.

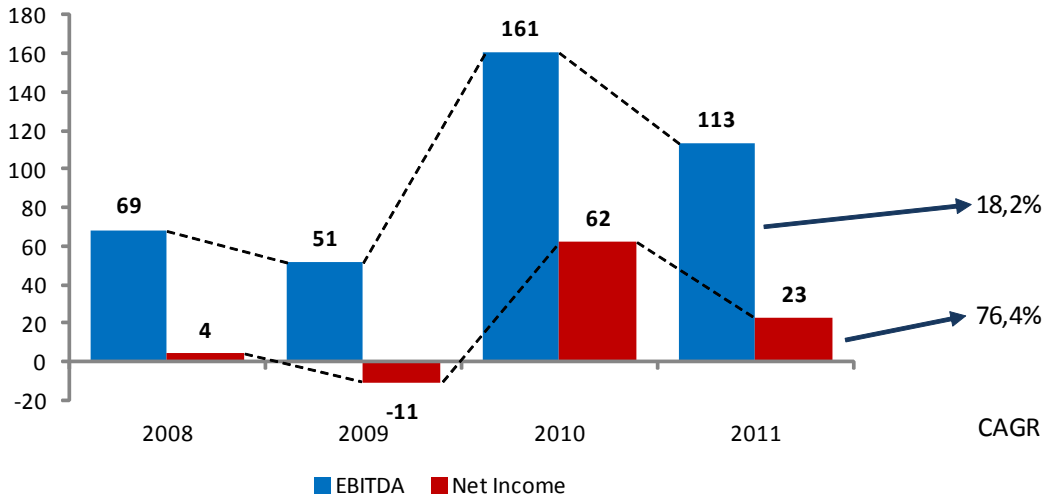
In order to help the production of the pulp Altri has in its assets 84 thousand hectares all of them in Portugal. The company produces bleached eucalyptus kraft pulp (BEKP) from Celbi and Celtejo mills and produces totally chloride free (TCF) bleached hardwood sulphite pulp from Caima mill, in the BEKP pulp Altri is a worldwide reference for its quality and known low cost pulp. This is only possible through the use of skilled know-how and cutting edge technology.

Altri also uses its forest resources to produce energy through Biomass and Cogeneration. Regarding its capital structure it is presented in the graph below (graph 9), and it should pointed out the strength that the directors have on this subject with more than 50%.



Graph 9: Altri's Capital Structure

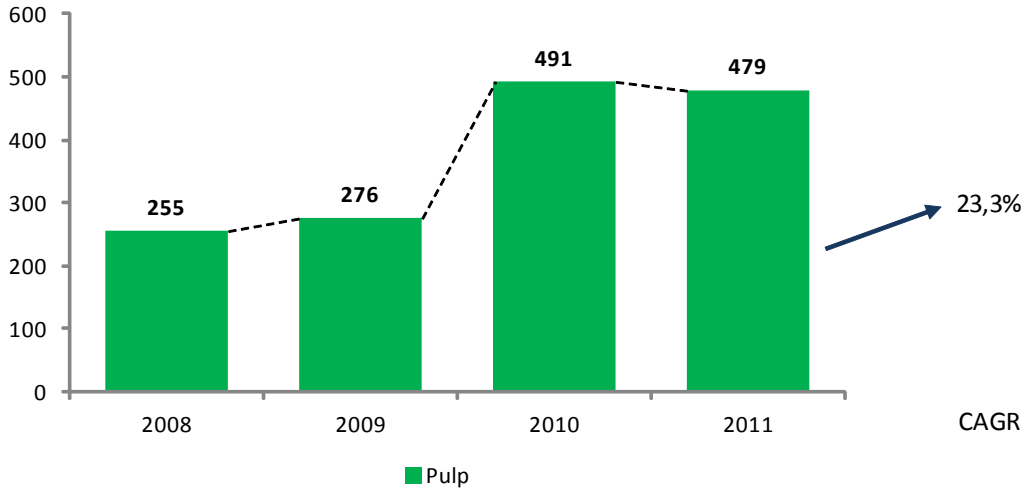
1.8.1 Financial Performance



Graph 10: Altri's Financial Performance (million EUR)

In the above figure (graph 10) it is shown the financial performance for Altri in the recent years, what we can take from here is that operationally (in terms of EBITDA) the firm shows solid results with an annual growth of 18,2%. Although the net income levels show an annual growth of 76,4% this is due to the fact that 2008 and 2009 were a bad year for Altri in profit (2007's net income is nearly 20 million EUR). So this profitability that is not at the same level as the operational part happens because Altri is on a restructuring process, acquiring pulp mills and discontinuing some businesses that are no longer strategic. In order to do this restructuring Altri had to finance all the operations which imply that the weight of amortization, depreciation and financial expenses are very high and contribute to the poor profit performance. In sum this company shows already signs of a high leverage capital structure.

1.8.2 Revenues

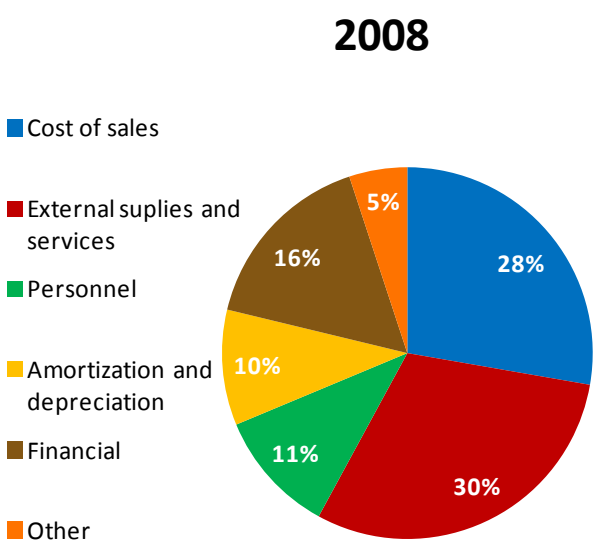


Graph 11: Altri's Revenues (million EUR)

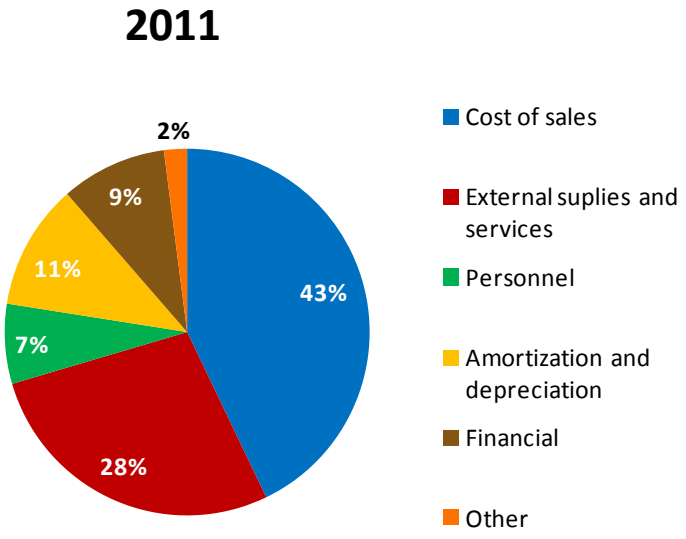
As it was said before since 2008 that the core business of Altri is pulp production, and in graph 11 this is very clear. This above figure shows the development of Altri's revenues in the last four years, and we distinguish the first two years from the rest, because in the first two it was made an investment to increase the production capacity of Celbi mill which granted the accentuated increase in the revenues for this period. Actually this latest information supports the previous findings of low net income levels and high levels of EBITDA for 2008 and 2009 that were due to an increase in investment for the business expansion.

All in all Altri's revenues during the homologous period have increased at an annual rate of 23,3%. This data tell us the profile this company has in terms of strategy and their willingness to expand their business, also the high annual growth rate only shows the many growth opportunities this firm has, in this matter it is a good target for Portucel because it is a firm of high growth but financially constrained and Portucel is a firm with less growth opportunities but is less financially constrained. A BPI research forecasts an average yearly growth in revenues of 6% which is a value considerably different from the one got by the historical information, the analyst also expects the deleveraging of the firm in the next years mainly because of the high leverage profile of the company and will probably go into the market to issue new debt only in 2015.

1.8.3 Main Costs



Graph 12: Altri's Main costs Breakdown (2008)



Graph 13: Altri's Main costs Breakdown (2011)

In the figures above (graph 10 and 11) we can see how Altri's costs have changed in the historical period. First we can denote that the costs related to goods sold increased in weight of total costs from 60% in 2008 to 75% in 2011 and there is a decrease in external supplies and services in the homologous period here it is implied the strategy of the firm to depend less on a third party for the production and sale of their product and this is also due to the high increase in sales. We can also see a decrease in the personnel costs weight and in the financial costs weight on the total costs. The first has to do with the productivity strategy of the firm to be able to produce more with fewer resources. The second has to with the heavy investments made and because no more were made so far it reduces the amount of debt to be paid, thus less financial costs in the following years.

Main Costs	2008	2009	2010	2011	CAGR
Cost of sales	79,54	112,02	163,54	201,46	36,3%
Weight in revenues	31,1%	40,6%	33,3%	42,0%	n.a.
External suplies and services	86,64	109,01	119,50	129,24	14,3%
Weight in revenues	33,9%	39,5%	24,3%	27,0%	n.a.
Personnel	30,92	33,39	34,86	33,23	2,4%
Weight in revenues	12,1%	12,1%	7,1%	6,9%	n.a.
Amortization and depreciation	28,82	38,91	51,20	52,26	21,9%
Weight in revenues	11,3%	14,1%	10,4%	10,9%	n.a.
Financial	46,38	29,86	36,09	43,89	-1,8%
Weight in revenues	18,2%	10,8%	7,3%	9,2%	n.a.
Other	14,54	3,69	22,39	9,54	-13,1%
Weight in revenues	5,7%	1,3%	4,6%	2,0%	n.a.
Total	**286,84**	**326,88**	**427,57**	**469,62**	**17,9%**
Weight in revenues	**112,3%**	**118,6%**	**87,0%**	**98,0%**	**n.a.**

Table 4: Altri's main costs in million EUR and their weight on the revenues

In the table above we can see how the main costs of Altri have been growing in terms of weight when comparing with revenues and how it has been growing in value. In total the former is growing at an annual rate of 17,9% and it should be pointed out that this is lower than the annual revenues growth.

As it can be seen almost all costs are increasing, in fact costs with inventories sold grow at an annual rate of 36,3% and the external supplies and services are increasing at a rate of 14,3% this goes in line with what we saw before, first it is normal to have a positive growth here because of the revenues growth, the fact that the former is growing at a higher rate than the revenues and the latter is not is due to the fact of the firm is now investing more in relying less on third parties to produce its pulp. The growth in value of costs with depreciation and amortization, of 21,9% annually, tells us that this firm is expanding its operations by buying facilities in order to produce more. Although in value personnel costs are increasing 2,4% annually, which is a low value if take in consideration costs annual growth and the revenues conjuncture this is an important value as the human capital is becoming more efficient and producing more with less overhead costs.

1.8.4 Capital Expenditure (capex) and Depreciation

	2008	2009	2010	2011	CAGR
Capex	261,80	92,10	26,80	13,40	-62,87%
Weight in revenues	102,47%	33,41%	5,45%	2,80%	n.a.

Table 5: Altri's capital expenditure in million EUR and their weight on the revenues

This next table (table 5) evidences the development of capital expenditures expense (capex) along the historical period and its weight in total revenues, which is what, is relevant for this analysis. We can see that capex has decreased both in value and weight, the former at an annual rate of 62,9% and the latter from 102,5% in 2008 to 2,8% in 2011. This happened because in during 2008 and 2009 Altri made a huge investment with the purpose of doubling the production capacity of Celbi mill, this proved to be a successful investment in terms of actually transferring that production increase into an increase in sales as it can be seen in graph 9. An important aspect to have in mind is that we should not fundament our forecasts only in light of these findings due to the same reason given in Portucel, which is the fact that these firms do not invest constantly in tangible assets throughout the years but rather they invest in a big amount in one year in order to build or expand mills.

This means that we must complement our answer if possible with management forecasts in order to give a range of results that could mitigate the shortcomings of the first analysis. It is although likely that Altri will not make any big investment in the near future because right now the firm is already high leveraged due to Celbi mill investment.

	2008	2009	2010	2011	CAGR
Depreciation	28,57	38,81	51,32	51,59	21,8%
Weight in revenues	11,2%	14,1%	10,4%	10,8%	n.a.

Table 6: Altri's depreciation in million EUR and their weight on the revenues

In the figure above (table 6) it can be observed how the depreciation costs have changed for Altri during the last four years in terms of value and in terms of their weight to revenues. As it is a clear sign of the business expansion the depreciation is increasing at an annual rate of 21,8% and regarding its weight to revenues is has remained a level approximate to 10% with the exception of 2009 that was immediately after the celbi mill investment. This data gives us a notion of how depreciation has been behaving and how it can behave in the near future. Although it is still important to keep in mind that managerial projections on depreciation would be good to compare with the first findings and thus obtaining better forecasts on these costs.

1.8.5 Conclusions

In light of these findings we clearly see that in fact Altri is expanding its operations although at a slower level than before, this is evident in the growth of revenues, costs and depreciation, these last two have a lower growth rate than the revenues. This can be because in recent years has made big investments for their operations in order to expand its core business and reducing those that are no longer strategic. Operationally the firm is very solid with high and constant EBITDA levels, and they are seriously damaged by the costs associated with heavy investments. Nevertheless these facts Altri is a relatively new company that is passing a big restructuring phase on which will surely have many investment opportunities in the upcoming years, thus these can be good signs for Altri to become a target for the deal at study.

1.9 Altri standalone valuation

As it was seen earlier, in the past years Altri has been struggling with all the costs associated with its restructuring process, making significant investments and disinvestments, which has enabled the firm to specialized itself on paper pulp manufacture and it is considered today an important worldwide player in the industry. These efforts although were at the company's profitability cost, with the latter seeing its financial and depreciation costs pushing down good operational results to low income levels along the past years, in practice this made Altri's annual ROE to be below its potential. Adding to this line of thought this firm can be characterized as a high leveraged one, this is an important fact because the interest expenses push down the firm's profitability which in turn makes harder for the firm to finance itself using its own funds. Thus it is expected that in the future Altri will deleverage itself by simply retiring debt, in order to regain its profitability and a new financing source that will be increasingly more important in an economy where the other sources are getting scarcer.

The firm at study will be assessed using the WACC, APV and Relative Valuation methods. So this part of the paper will focus on the components that influence the Free-cash Flow to the Firm (FCFF), that are the drivers, later it will be analyzed the capital structure and the cost of capital, all these will influence our WCC and APV valuations. Although for the latter method it will be also considered the tax shields and the distress costs. Lastly in this part it will be ascertained the peer group that can give an accurate comparable valuation. It is important to state that this methodology will also be applied to the other company at study (Portucel).

1.9.1 Drivers

The drivers are inputs from the Statement of income and the Balance sheet that will influence the calculation and estimation of the EBIT (earnings before interest and taxes) and the Free-Cash Flows, in this part it will be assessed all the rationales for the estimation of the former two items. It is the first step in the analysis and it is a very important one as it will influence substantially the firm's enterprise value (EV).

1.9.1.1 Drivers based on historical growth

1.9.1.1.1 Revenues

Altri only produces and sell paper pulp and the information regarding these revenues are clear in the firm's financials. It is important to state that Altri, like some companies in the industry, produces at almost its capacity and this productivity level has little changed, which means that the growth in revenues is either due to changes in the commodity or in the total capacity of the firm. Regarding the pulp price, it is expected to decrease substantially in 2014 due to an uncontrollable increase in the worldwide production capacity (Brazil and Chile), other than that the price will remain quite flat. Regarding production capacity it is not expected any substantial increase in the following years due to the large investments made in the recent years. Nonetheless, a certain level of growth will be considered due to historical information.

During the historical period Total Revenues have grown on average 23% p.a. and Other revenues have decreased almost 34% p.a.. These values however are misleading in the sense that from 2009 to 2010 the incorporation of Celbi mill gives these biases growth rates. In this way it was computed the average growth excluding the period from 2009 to 2010 giving an average growth of 2,4% p.a.. As for Other Revenues due to their small values and volatile historical sample it was considered 0% growth. These new growth rates much more plausible and go in line with the current macroeconomic environment in Europe, although taking in consideration the pulp commodity price forecasts for 2014 the growth rate for Revenues were cut by 4% in the same year and from then they would continue to grow at a normal pace.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Revenues	**255,48**	**275,65**	**491,33**	**479,34**	**23,3%**	**491,05**	**503,03**	**495,19**	**507,28**	**519,66**
Growth	n.a.	7,6%	57,8%	-2,5%	**n.a.**	2,4%	2,4%	-1,6%	2,4%	2,4%
Other revenues	**24,69**	**33,96**	**9,05**	**7,26**	**-33,5%**	**7,26**	**7,26**	**7,26**	**7,26**	**7,26**
Growth	n.a.	31,9%	-132,3%	-22,0%	**n.a.**	0,0%	0,0%	0,0%	0,0%	0,0%
Total Revenues	**280,17**	**309,61**	**500,38**	**486,60**		**498,30**	**510,29**	**502,45**	**514,54**	**526,92**

Table 1: Altri's historical and projected revenues in million EUR

1.9.1.1.2 Personnel Costs

As we are analyzing a commodity producer company it is normal that its revenues are somewhat volatile. As they greatly depend on the commodity price (paper pulp) which by itself depends on the fluctuations of demand and supply. As such, in practice Altri can sell the same number of products but because the price for paper pulp changes this will affect the financial performance of that specific year. Taking this into consideration it is only normal that we should not consider the costs associated with personnel as being correlated with Altri's business. This statement follows the rational that the firm will somewhat produce the same amount of pulp and in this way will not change its workforce size with the same volatility as the commodity's price. As it can be seen in table 2 these expenses have grown on average of 2,4% p.a., which is the growth rate that will be assumed for the explicit period.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
		Historical data								
Personnel	**30,92**	**33,39**	**34,86**	**33,23**	**2,4%**	**34,03**	**34,86**	**35,71**	**36,57**	**37,46**
Growth	n.a.	7,7%	4,3%	-4,8%	**n.a.**	2,4%	2,4%	2,4%	2,4%	2,4%

Table 2: Altri's historical and projected personnel costs in million EUR

1.9.1.1.3 Financial Costs

Along the recent years Altri has made significant investments with the objective to restructure business, more specifically has been focusing on its core business and expanding its pulp production capacity through the incorporation of the new Celbi mill and the increase in production in Celtejo. These investments were particularly stronger until 2009 which is the year in which Debt reaches its highest level, from then on it has been decreasing. Following this line of thought, it is my believe that due to the financial effort done before and considering the current macroeconomic conjecture it is more likely that Altri will reduce its Debt by retiring it. Thus, significant investments are not expected in the future.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Interest expenses	**34,53**	**22,04**	**19,90**	**26,63**	**-8,3%**	**24,42**	**22,40**	**20,54**	**18,83**	**17,27**
Growth	n.a.	-44,9%	-10,2%	29,1%	**n.a.**	-8,7%	-8,7%	-8,7%	-8,7%	-8,7%
Net Debt	759,87	837,90	739,39	731,46	**-1,3%**	645,74	537,19	452,06	457,56	407,92
Interest rate	4,5%	2,6%	2,7%	3,6%	**n.a.**	3,8%	4,2%	4,5%	4,1%	4,2%
Other financial costs	**11,85**	**7,82**	**16,20**	**17,25**	**13,3%**	**17,25**	**17,25**	**17,25**	**17,25**	**17,25**
Growth	n.a.	-41,6%	72,8%	6,3%	**n.a.**	0,0%	0,0%	0,0%	0,0%	0,0%

Table 3: Altri's historical and projected financial costs in million EUR

In the table 3 it can be seen that both Interest expenses and other financial costs (which include mainly losses in interest rate and commodities derivatives with hedging purposes) have been quite volatile.

Regarding the former, they have decreased on average 8% p.a., although they increase quite significantly in 2011. This can be explained by the rise in the Euribor rate of 6 months, to which almost all loans are indexed to. On a final note, it is important to mention that the actual interest expenses for 2011 are nearly 8 million above what was expected according to the remaining principal and interest payments expected at the end of 2010. So it will be assumed that the firm will effectively hedge against the Euribor rate risk, which will allow to forecast these costs accordingly with its historical average.

As for other financial costs, it shows they decreased on average 13% p.a. mostly due to the commodity price changes that were unfavorable to the derivatives instruments outcome, which increased also because of the increase in production, which created the need for more contracts to hedge a greater output. Giving this line of thought and because it is expected that the production remains somewhat flat, I expect that these costs will remain constant for the next five years.

1.9.1.1.4 Financial Income

The Financial Income item of Altri is related to interest bearing instruments and derivatives both with a somewhat equal weight of the total financial income along the previous years. As it can observed in the table below, that these costs have been quite volatile and are also relatively small in value when they are compared with all other costs. Due to the latter characteristic I will expect these costs to be the same as for 2011 and remaining constant.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Financial Income	**10,78**	**4,67**	**3,83**	**9,45**	**-4,3%**	**9,45**	**9,45**	**9,45**	**9,45**	**9,45**
Growth	n.a.	-83,7%	-19,8%	90,3%	**n.a.**	0,0%	0,0%	0,0%	0,0%	0,0%

Table 4: Altri's historical and projected financial income in million EUR

1.9.1.2 Drivers based on revenues

1.9.1.2.1 Cost of sales

These costs are the ones directly linked to the firm's cost to sell paper pulp, more specifically they are mostly composed by the purchases in raw materials that are used in the production process. Thus, they are strictly correlated to the firm's activity varying accordingly to the revenues performance.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Cost of sales	79,54	112,02	163,54	201,46	36,3%	159,46	163,29	180,88	164,65	168,61
Weight in revenues	28,4%	36,2%	32,7%	41,4%	n.a.	32,0%	32,0%	36,0%	32,0%	32,0%

Table 5: Altri's historical and projected cost of sales in million EUR

As it can be observed in the above table these costs have been increasing on the past years and in 2009 and 2011 they have rose to high amounts in terms of total revenues. In 2009 this was mainly due low pulp prices during the whole year which decreased the revenues and thus its profitability and because it was the year of the Celbi mill integration which hadn't still the necessary productivity. In 2011 the pulp price had also a very important role, especially in the second semester which was due to the European macroeconomic deteriorating situation and the deterioration of the European currency.

Despite that in the past years these values have been quite volatile as a weight of sales, it is clear that 2009 and 2011 were exceptional years in terms of cost of sales that are only likely to be repeated in times of great turmoil, in this way I will not consider them in the analysis. Due to the fact that Altri is expected to maintain the same productivity, production capacity and sales of 2010 and that the commodity prices will stabilize. I will expect that in the explicit period will have the weight of these costs will be the same of 2010.

Also, as it is expected that there will be supply issues that will lead to price pressures and as seen before they increase these costs, in this way a 4% increase should reflect properly the before mentioned pressures that are expected in 2014.

1.9.1.2.2 External Supplies and Services

These costs account for all the external services which Altri undertakes along the year. Although are not directly linked to the production process they are essential to it and that is why they are considered as being linked to the revenues.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
External supplies and services	**86,64**	**109,01**	**119,50**	**129,24**	**14,3%**	**119,59**	**122,47**	**130,64**	**123,49**	**126,46**
Weight in revenues	30,9%	35,2%	23,9%	26,6%	**n.a.**	24,0%	24,0%	26,0%	24,0%	24,0%

Table 6: Altri's historical and projected external supplies and services in million EUR

In the above table it can be observed that these costs have behaved in the recent years in a similar pattern as the cost of sales high numbers in relative values to total revenues for 2009 and 2011. This pattern in the values can be explained by the same rational used for the former costs, which means that in 2009 and 2011 there were price and macroeconomic pressures that led to lower revenues. Although it is important to note that they are less affected than the previous costs, it should be also pointed out that these were exceptional years that are not expected to reoccur. Nonetheless it is clear that these costs have an increasing tendency as values, and decreasing in relative values, so in order to have a conservative approach on these costs I will expect them to be in line with the values of 2011. Also, as seen before it will be expected an increase in these costs due to price pressures, in this way a 2% increase should reflect properly the before mentioned pressures.

1.9.1.2.3 Other

These costs are not directly related to the sales, although they still are accounted in the statement of income. These costs have decreased on average 20% p.a. which is due to the fact that in 2008 and 2010 it is seen high amounts and in 2009 and 2011 are seen low amounts. In fact, these costs show such volatility and a cyclical pattern that it cannot be feasible to attribute an historical growth or a weight to total revenues. Given the small values at hand and the historical volatility I assumed that for the explicit period these costs would be constant to the 2011.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Other	16,39	3,82	21,00	8,37	-20,1%	8,37	8,37	8,37	8,37	8,37

Table 7: Altri's historical and projected other costs in million EUR

1.9.1.3 Drivers based on fixed assets

1.9.1.3.1 Depreciation

These costs relate to the annual depreciation and amortization of assets such as mills and machinery, as such they are linked to the production capacity (mills) and other tangible assets as machines. Before analyzing these costs one should consider looking at the fixed assets, which as it can be seen in the table 8 they have greatly increase until 2009, this coincides with the investments for Celbi and Celtejo mills, and from then it has been stable because the investment mentioned earlier took some financial effort.

	2007	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Net fixed assets	314,75	473,14	525,14	500,49	460,12	13,5%	430,69	403,15	403,15	403,15	403,15
Growth	n.a.	40,8%	10,4%	-4,8%	-8,4%	n.a.	-6,6%	-6,6%	0,0%	0,0%	0,0%

Table 8: Altri's historical and projected net fixed asstes in million EUR

As mentioned above, 2008 and 2009 were exceptional years for fixed assets and will only reoccur if Altri should engage again in an expansion of such dimension which it is not expected. As such, if I disregard such years the adjusted growth should reach roughly -6% p.a. which is a very likely growth rate that takes in consideration a decrease of the net fixed assets due to the previous heavy investment. Although, if these assets would continue decreasing at -6% it

would reach EUR 330 million in 2016. But this rate is not feasible in the long term due to the fact that Altri is not expected to decrease its operations substantially in the long terms. As such I expect that from 2014 onwards these assets will remain stable.

In the table 9 it can be observed that depreciation grew steeply until 2010, which coincides with the conclusion of all the expansion plans and then it stabilized. As it is foreseeable in the next years that Altri will not incur in heavy investments, thus I will consequently expect that depreciation will stabilize for the next years at around EUR 50 mio.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Depreciation	**28,82**	**38,91**	**51,20**	**52,26**	**21,9%**	**52,26**	**52,26**	**52,26**	**52,26**	**52,26**
Growth	6,1%	7,4%	10,2%	11,4%	**n.a.**	10,0%	10,0%	10,0%	10,0%	10,0%

Table 9: Altri's historical and projected depreciation costs in million EUR

1.9.1.3.2 Capex

Costs related to capital expenditures (capex) have along the recent years have been characterized with high volatility and a decreasing tendency. This behavior goes in line with the investments mentioned earlier that increased twice fold the production capacity of Altri. However it is expected that these costs should not reach the same values seen in 2008 and 2009. In order to forecast the capex for the next years I used the below formula:

$$Net\ fixed\ assets_n = Net\ fixed\ assets_{n-1} + Capex_n - Depreciation_n$$

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Capex	**261,80**	**92,10**	**26,80**	**13,40**	**-62,9%**	**22,83**	**24,72**	**52,26**	**52,26**	**52,26**
Growth	n.a.	-104,5%	-123,4%	-69,3%	**n.a.**	53,3%	7,9%	74,9%	0,0%	0,0%

Table 10: Altri's historical and projected capex in million EUR

In table 10 it can be seen how capex is expected to be in the upcoming years using the above function, and it is clear that the values found are much lower than those up until 2009. The reason why capex increased after 2013 has to do with the fact that depreciation increased and it takes more capital to preserve the same levels of net fixed assets than before.

1.9.2 Net Working Capital and Other Non Cash Items

In the Net Working Capital (NWC) is an important item as it will be the one to assess the operational liquidity and it is quite relevant for the FCFF assessment. Inventories, receivables and payables were assumed as being associated with Altri's business cycle as their amount is not fixed as they move along with the operational needs, in this way they were weighted as a percentage of total revenues.

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Inventories	**57,61**	**37,89**	**49,55**	**61,73**	**63,21**	**64,73**	**63,74**	**65,27**	**66,84**
Weight in revenues	**21%**	**12%**	**10%**	**13%**	**13%**	**13%**	**13%**	**13%**	**13%**
Customers	57,82	69,60	92,07	66,67	n.a.	n.a.	n.a.	n.a.	n.a.
Other debtors	14,75	6,98	4,57	9,09	n.a.	n.a.	n.a.	n.a.	n.a.
State and other public entities	24,42	15,64	7,73	12,10	n.a.	n.a.	n.a.	n.a.	n.a.
Cash and equivalents	74,30	80,26	129,87	112,75	n.a.	n.a.	n.a.	n.a.	n.a.
Accounts Receivable	**171,29**	**172,49**	**234,24**	**200,61**	**204,30**	**209,22**	**206,00**	**210,96**	**216,04**
Weight in revenues	**61%**	**56%**	**47%**	**41%**	**41%**	**41%**	**41%**	**41%**	**41%**
Suppliers	58,90	66,00	82,69	66,61	n.a.	n.a.	n.a.	n.a.	n.a.
Other current creditors	70,91	10,78	39,87	8,23	n.a.	n.a.	n.a.	n.a.	n.a.
State and other public entities	3,06	3,81	13,61	1,74	n.a.	n.a.	n.a.	n.a.	n.a.
Accounts Payable	**132,87**	**80,59**	**136,16**	**76,58**	**79,73**	**81,65**	**80,39**	**82,33**	**84,31**
Weight in revenues	**47%**	**26%**	**27%**	**16%**	**16%**	**16%**	**16%**	**16%**	**16%**

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Working Capital	96,03	129,79	147,63	185,76	187,79	192,31	189,35	193,91	198,57
ΔNet Working Capital	n.a.	33,76	17,83	38,13	2,03	4,52	-2,96	4,56	4,67

Table 11: Altri's historical and projected net working capital in million EUR

As it can be ascertained in table 11, Inventories have remained stable around 12% with exception for 2008 and it is expected that they will somewhat stabilize as revenues are expected to also follow the same behavior, as such it was considered a weight of 12%. As for receivables they show a decreasing tendency in relative values although considering the stable prospects for Altri it is likely that receivables will follow the pattern of 2011. Payables show evidence of the same tendency as the previous item and it is also likely that it will remain at the same values of 2011.

1.9.3 Free-cash Flow to the Firm (FCFF)

All the forecasts of the drivers made until now are very useful for the estimation of the FCFF for Altri, as it was demonstrated it is a complex matter that requires a profound knowledge on the firm's business and strategy. With all the inputs estimated the next step is to the FCFF, using the below formula that was analyzed in the literature review.

$$FCFF = EBIT \times (1 - T) + Depreciation - Capex - \Delta NWC$$

Although, before getting to the forecasts of FCFF it should also be shown the forecasts for relevant items of Altri items, like EBITDA, EBIT, Net Income, that are obtained from the forecast of the drivers.

	2008	2009	2010	2011	2012	2013	2014	2015	2016
EBITDA	66,68	51,37	161,48	114,30	176,85	181,30	146,86	181,46	186,02
EBITDA margin	23,8%	16,6%	32,3%	23,5%	35,5%	35,5%	29,2%	35,3%	35,3%
EBIT	37,86	12,46	110,29	62,04	124,59	129,04	94,60	129,20	133,76
Taxes	0,57	-3,18	16,32	6,90	23,09	24,71	16,57	25,64	27,17
Net Income	1,70	-12,73	61,70	20,71	69,28	74,13	49,70	76,92	81,52

Table 12: Altri's historical and projected main financial data in million EUR

	2008	2009	2010	2011	2012	2013	2014	2015	2016
EBIT	37,86	12,46	110,29	62,04	124,59	129,04	94,60	129,20	133,76
EBIT×(1-T)	28,40	9,34	82,71	46,53	93,44	96,78	70,95	96,90	100,32
Depreciation	28,82	38,91	51,20	52,26	52,26	52,26	52,26	52,26	52,26
Capex	261,80	92,10	26,80	13,40	22,83	24,72	52,26	52,26	52,26
ΔNWC	n.a.	33,76	17,83	38,13	2,03	4,52	-2,96	4,56	4,67
ΔOther non cash items	n.a.	14,15	0,80	-11,62	0,00	0,00	0,00	0,00	0,00
FCFF	**-204,58**	**-63,46**	**90,08**	**35,64**	**120,84**	**119,81**	**73,90**	**92,34**	**95,65**

Table 13: Altri's historical and projected FCFF in million EUR

1.9.4 Risk Parameters

At this stage of the paper it will be conducted an analysis of the several parameters linked to Altri's business and that will be crucial to the valuation of the different FCFF approaches. After this step it will be possible to get a feasible range of the enterprise value for Altri, which will reflect the firm's share price potential within 12 months, which is in December of 2012.

1.9.4.1 Risk-free Rate

The risk-free rate is the rate an investment should give without risk. With the sovereign debt crisis we saw that countries can enter in default of their debts and this changed how the investors look at the risk-free assets. This rate should represent a riskless investment in the same currency as the one the company has. Thus taking in consideration the post-crisis environment that we live now, it will be used the German bond as a risk-free asset, in this way it was chosen the former bond with a maturity of 10 years, which gives a rate of 1,8% at the end of 2011.

1.9.4.2 Cost of Debt

This represents the expected return the bondholders have on Altri. This cost was analyzed through several methods. Firstly it was assessed by the interest coverage ratio, as it can be seen in table 14 the implied cost of debt is very volatile. Lastly, the cost was analyzed by the ratio of interest payments to the current net debt outstanding, which although is less volatile than the previous measure, still it is not stable and the values are significantly lower.

	2008	2009	2010	2011
Interest payments	34,53	22,04	19,90	26,63
EBIT	37,86	12,46	110,29	62,04
Net Debt	759,87	837,90	739,39	731,46
Interest coverage ratio	1,10	0,57	5,54	2,33
Implied spread	11,5%	12,7%	2,0%	6,5%
German Bond (10 years)	2,9%	3,4%	2,9%	1,8%
Implied Rd	14,4%	16,1%	4,9%	8,3%
Interest/Net debt	4,5%	2,6%	2,7%	3,6%
Bloomberg Rd	5,1%	2,0%	6,6%	18,0%

Table 14: Altri's historical cost of debt

Although Altri does not have a credit ranking, it was possible to assess the historical cost of debt through the Bloomberg platform as it can be observed in the table above, which takes in account the economic conditions in Portugal at that time and to the capital structure of Altri. The value for 2011 is very high because at the time the Portuguese sovereign debt yields were at an all time high.

Considering that it is expected that Altri retires debt in the next years, thus reducing leverage the cost of debt should be lower than the historical values. In my view the cost of debt will be somewhat lower with the ones showed by the implied cost of debt, because the other two methods seem to show extreme values that do not reflect the current environment. Either because shows very low values that are simply not feasible or shows very high numbers that are based on historical all time high government debt yields. In this way it was assumed a cost of debt of 6,5%, which reflects all the above comments.

1.9.4.3 Risk Premium

In this specific part it will be ascertained the market risk and a specific country risk. For the first one it was seen the yearly returns on stocks and on 10 year bonds from 1928 to 2011, the data taken from Damodaran website showed a market risk premium of 5,8%, this time window was chosen in order to include several economic cycles, and as the data is annual only this way we could have a comfortable sample size that could mitigate exceptional extreme returns. As for the second premium, it was taken firstly the approach seen in the literature review, although it gave a country risk premium of 0,76% which is considerably low if it is analyzed in a practical way, this would mean an investor would only require this extra return when investing in Portugal than he would on a mature market like the U.S. As such it was taken in consideration also the data from Damodaran website which gave a country risk premium of 4,1%. As a last method it was taken the CDS for Portugal at 10 years by the end of 2011 which gave a rate of 4,8% a considerably higher premium but goes more in line with all the fiscal and economic issues that are lived in Europe and in particular in Portugal, and it also reflects the markets view on the extra return needed to invest in Portugal. Thus it was chosen a country risk premium of 4,8%.

1.9.4.4 Cost of Equity and Cost of Capital

In order to assess the expected return of Altry's business, it is needed in a first instance to determine the levered beta, for this it was taken several methodologies. One estimates a linear regression of that enables to give the correlation between the Morgan Stanley global equity index (MXWO Index) and Altri's daily returns from 2010 to 2011 which gave a beta of 0,914. Afterwards we compared it to the beta taken from Bloomberg data which gave a higher

value of 1,11 the difference here has to do with the fact that the Bloomberg takes in account weekly returns and also the timetable used by Bloomberg can be different.

	2011	2012	2013	2014	2015	2016
FCFF		120,84	119,81	73,90	92,34	95,65
D/V	74,8%	65,0%	55,0%	45,0%	45,0%	45,0%
E/V	25,2%	35,0%	45,0%	55,0%	55,0%	55,0%
D/E	297,2%	185,7%	122,2%	81,8%	81,8%	81,8%
bu	0,89	0,89	0,89	0,89	0,89	0,89
bl	2,87	2,13	1,71	1,44	1,44	1,44
re	23,3%	19,0%	16,5%	14,9%	14,9%	14,9%
pre-tax rd	6,5%	6,5%	6,5%	6,5%	6,5%	6,5%
after-tax rd	4,9%	4,9%	4,9%	4,9%	4,9%	4,9%
Rwacc	9,5%	9,8%	10,1%	10,4%	10,4%	10,4%

Table 15: Altri's forecasted cost of capital

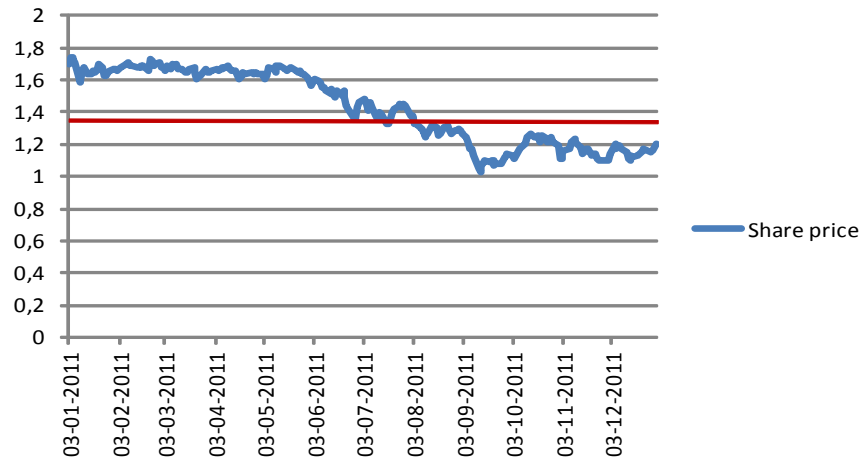
The third estimate, as it can be seen in table 15, the beta was ascertained by taking the average unlevered beta for the industry from Damodaran (0,89) and then using the target D/V ratio it was assessed the bl, until the ratio reaches the target of 45%, thus giving the levered betas above. Taking in consideration all the items analyzed earlier, the CAPM formula gives the Re seen above, varying accordingly the capital structure and in the end we can observe the implied expected cost of capital along the explicit period.

1.9.5 WACC and APV

Having all this analyzed it was performed the valuation of Altri using the WACC and the APV approaches like it was developed firstly in the literature review. Nonetheless before the valuation, the terminal growth rate as to be assessed. It was seen the tendency of the Portuguese nominal GDP growth over the last years and it shows a CAGR of 1% from 2008 to 2011. In this way, as seen before in the literature review it is not expected that a firm grows more than the economy in the long term.

In this way, the graph 9 shows the output for Altri's valuation at the end of 2011 and its comparison to the one year historical share price. It is clear that currently the stock is on a very low level when comparing to the beginning of the year and although the target price as a potential of nearly 13% it is still a lower price than the majority of the time along the past year.

	2011
Share Price	1,20
Market Cap.	277,90
# shares	246,16
Target Price	1,35
Potential	12,9%



Graph 9: Altri's historical stock price vs WACC target price

For the APV model it was computed firstly the ITS using the cost of debt and the corporate tax and computed the cost of financial distress like it was mentioned in the literature review. As it can be seen in table 16 the PV of ITS amounted to almost 123 million EUR, taking in consideration the probability of default this gives a value of almost 116 million EUR.

	2012	2013	2014	2015	2016
Debt	645,25	536,77	451,66	457,15	407,54
ITS	10,49	8,72	7,34	7,43	6,62

	2011
PV of ITS	122,98
P(D) ITS	115,96

Table 16: Altri's projected and PV of ITS in million EUR

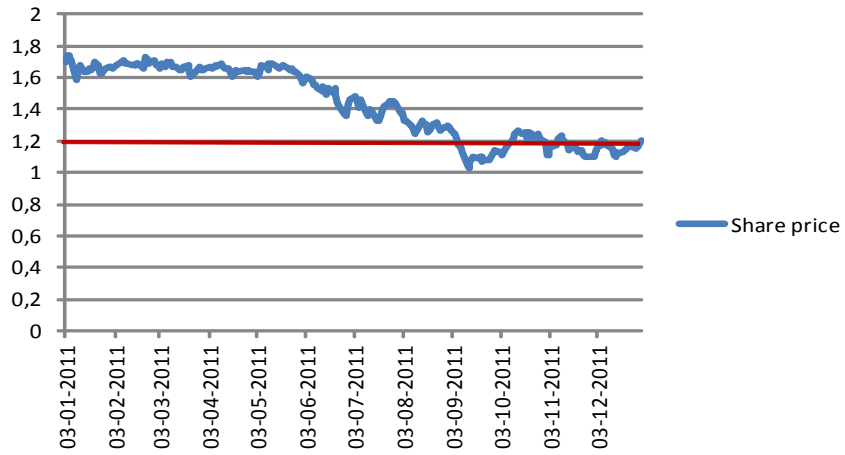
	2011	2012	2013	2014	2015
D/V	74,8%	65,0%	55,0%	45,0%	45,0%
% CFD	20,0%	15,0%	10,0%	7,0%	7,0%
P (D)	5,7%	5,4%	5,1%	4,9%	4,9%
CFD	176,82	130,12	84,99	61,33	62,09

	2011
PV of CFD	398,67
P(D) CFD	22,78

Table 17: Altri's projected and PV of CFD in million EUR

As it can be ascertained above the PV of CFD amounts up to almost 400 million EUR, but taking in account the probability of default this accounts for almost 23 million EUR. Important to bear in mind that the probability of default was computed as it was seen previously in this paper, and the CFD as percentage were forecasted based on the leverage structure along the explicit period as it was also seen in the literature review.

	2011
Share Price	1,20
Market Cap.	245,82
# shares	246,16
Target Price	1,20
Potential	-0,1%



Graph 10: Altri's historical stock price vs APV target price

In graph 10 it can be observed the target price for Altri in 2011, which gave a price per share of 1,20 EUR and a potential upside of around 0% over the price at the end of 2011. Also by looking at the same graph it can be seen that the target price is lower than most of the closing prices along 2011, which is a common conclusion from the WACC valuation.

1.9.6 Multiple Analysis

In this part of the paper it will be assessed the value for the company at study by using multiples that are based on an average of a group of comparable companies (peer group), as initially described in the literature. The purpose shall be to ascertain a range of feasible values from comparable firms in terms of core business and size. The peer group was found by assembling the companies with these characteristics in the Bloomberg platform.

Then I computed the average multiples of the peer group for price to book ratio (P/B), the price to earnings ratio (P/E), enterprise value to EBITDA (EV/EBITDA), enterprise value to EBIT (EV/EBIT) and finally it was added a not so common multiple of price to fixed assets (P/Fixed assets). The rationale for the last multiple is quite simple; these assets are strictly related to the production capacity which is a very important factor to the firm's revenues. In the table below it can be seen the comparable firms found according to the above characteristics and it can also be seen the average for each multiple which disregards any extreme sample that is below the first quartile or above the third.

Name	P/B	P/E	EV/EBITDA	EV/EBIT	P/Fix. Assets
ALTRI SGPS SA	**1,63**	**10,17**	**8,25**	**13,74**	**0,87**
MERCER INTERNATIONAL INC	0,99	14,13	6,44	0,00	0,37
ENCE ENERGIA Y CELULOSA SA	0,73	10,18	4,74	7,61	0,62
BUCKEYE TECHNOLOGIES INC	1,48	10,44	5,34	6,95	2,10
CANFOR PULP PRODUCTS INC	1,83	18,82	6,23	0,00	1,35
SATERI HOLDINGS LTD	0,45	7,91	4,99	7,77	0,53
MIQUEL Y COSTAS	1,35	10,61	4,96	7,10	2,02
FORTRESS PAPER LTD-CL A	0,47	0,00	6,81	0,00	0,23
Average	**1,02**	**10,53**	**5,52**	**7,36**	**0,53**

Table 18: Altri's peer's and respective multiples

Afterwards I computed the share price for Altri given the above averages, which gave the following output:

	Book Value	Earnings	EBITDA	EBIT	Fix. Assets
Altri	165,66	69,28	176,85	124,59	430,69

	P/B	P/E	EV/EBITDA	EV/EBIT	P/Fix. Assets
Market Cap.	169,27	729,39	331,15	271,26	226,25
# Shares	205,13	205,13	205,13	205,13	205,13
Share Price	0,83	3,56	1,61	1,32	1,10

Table 19: Portucel's multiple valuation output. Values in million EUR

No multiple, with exception of EV/EBIT, is in line with the valuation obtained in the cash-flows models, which means that the market is not in concordance with the underlying theoretical and macroeconomic assumptions in the latter models. Also, one should note that the majority of the multiples undervalues Altri's current share price of 1,2 EUR (year end 2011).

1.9.7 The Valuation

As we saw before, the valuations methods used on Altri gave outcomes that with very distinct results, with the cash-flows models having similar results and the relative valuation having the opposite output. Most of the multiples approaches undervalues Altri (with exception to P/E and P/Fix. Assets), this characteristic complies with the WACC approach. All in all, the estimated market capitalization for Altri almost 278 million EUR and target price is estimated to be at EUR 1,35 giving a 13% upside potential for the next 12 months as of 31th December of 2011. In order to sum up the assumptions on Altri that gave this final market capitalization value, it is important to recall that Altri has a solid operational performance, but due to its over leveraged capital structure, the financial performance has been lagging. In fact this is due to

the restructuring process that the company is going through and it is expected to be almost finished which takes our assumption of a deleveraging process in the upcoming years; second the pulp price expected drop in 2013 due to an uncontrollable increase in worldwide pulp supply is an important factor to take in consideration; lastly Altri is also expected to improve slightly its operational performance as part of the consolidation of the restructuring process.

1.10 Portucel

Portucel was earlier described as a stable company that in the past has provided strong financial results and has been investing in new machinery in order to increase its paper and energy production. This however, did not negatively affected the financial performance, as the firm at the time and this is clear throughout the whole historical period has a low leverage capital structure and high cash reserves. Actually if we do not consider the capital structure Portucel has the characteristics of a typical cash-cow firm. If we take in consideration the macroeconomic context that exists in Europe and in particular in Portugal we cannot expect much room for growth, thus in the next years the company will struggle in order to maintain its market share and thus the same levels of profitability it has been delivering.

In this way this part of the paper will follow the same structure as the one made to Altri. Firstly, it will be analyzed all the components essential for the FCFF forecast, which are the drivers. Afterwards, as it was made previously, we will assess the risk parameters which will allow us to ascertain the risk of this business; these will finally lead to a feasible valuation range of Portucel through the WACC and APV methods. Lastly, the company at study will be assessed through a range of peer companies in this last method we will use several ratios that help us to get a comparable value for the company at study.

1.10.1 Drivers

In this part of the paper it will be taken the first step towards the valuation of Portucel, we will go through the several items that were found relevant for FCFF estimation, this is one of the most important steps in the valuation as it accounts for a great part of the valuation process. Like what was done for Altri, we will start on the drivers which are assessed by their historical

growth, then by those that are influenced by the performance of the business, and finally by those that are moved by the amount of fixed assets.

1.10.1.1 Drivers based on historical growth

1.10.1.1.1 Revenues

Portucel produces paper, energy, paper pulp and biological assets, although the most relevant for revenues in the upcoming years will be the first two, this is due to the fact that the last two are seen by the company mainly as resources. Regarding the pulp commodity price expectations, we have already analyzed them in Altri's valuation, although it is important to mention that they are expected to decrease in 2014 due to an increase in supply. As for the paper commodity price, it is expected to remain flat over the next years which are mainly due to flat supply and demand forecasts, also Portucel's profitability is already in a limit and production capacity is not expected to increase substantially in the next years.

As it can be seen in the table below (table 18) paper sales have grown 13% per annum (p.a.) during the historical period while energy increased 29% p.a.. These two items show a high volatility pattern. This is due to the increases in production capacity that are visible below, in particular a new paper mill in Setúbal and new power plants for energy production, thus these high growth rates are not expected to repeat in the near future. With the recent investments, paper production reached 1,6 million tones in 2011 which is also is the production capacity. Having this said, it is expected that this production level will maintain in the next years as well as the level of sales. Although it is expected that these sales will not be below the Portuguese economy, in this way the proposed growth rate shall be 1%. The sales in energy follow the same volatility pattern seen in paper, which is also due to an increase in production capacity, although the difference lies in the fact that in 2011 the production of 1,8 TWh is below the production capacity of 2,5 TWh. In this way it is expected that the production will keep rising through the explicit period at the same rate seen in the historical period until it reaches 2,5 TWh in 2016, the sales generated on each unit produced are expected to maintain the levels of 2011 which goes in line with keeping constant the productivity level obtained in energy.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Paper revenues	**814,10**	**833,53**	**1068,68**	**1179,47**	**13,2%**	**1191,27**	**1203,18**	**1215,21**	**1227,37**	**1239,64**
Growth	n.a.	2,4%	24,9%	9,9%	**n.a.**	1,0%	1,0%	1,0%	1,0%	1,0%
Paper production	1,05	1,13	1,50	1,60	**15,1%**	1,60	1,60	1,60	1,60	1,60
Pulp revenues	**232,59**	**163,15**	**168,44**	**139,09**	**-15,7%**	**168,44**	**168,44**	**161,70**	**168,44**	**168,44**
Growth	n.a.	-35,5%	3,2%	-19,1%	**n.a.**	19,1%	0,0%	-4,1%	4,1%	0,0%
Pulp production	1,33	1,34	1,30	1,37	**1,0%**	n.a.	n.a.	n.a.	n.a.	n.a.
Quantity sold	0,51	0,50	0,50	0,49	**-1,3%**	0,50	0,50	0,50	0,50	0,50
Energy sales	**77,38**	**86,15**	**140,51**	**166,58**	**29,1%**	**177,85**	**189,88**	**202,73**	**216,44**	**228,94**
Growth	n.a.	10,7%	48,9%	17,0%	**n.a.**	6,5%	6,5%	6,5%	6,5%	5,6%
Energy production	977,00	1148,00	1700,00	1819,00	**23,0%**	1942,07	2073,47	2213,76	2363,54	2500,00
Growth	n.a.	16,1%	39,3%	6,8%	**n.a.**	6,5%	6,5%	6,5%	6,5%	5,6%
Energy sales/ Production	0,08	0,08	0,08	0,09	**5,0%**	0,09	0,09	0,09	0,09	0,09
Forest sales	**7,86**	**12,48**	**7,83**	**2,74**	**-29,6%**	**2,74**	**2,74**	**2,74**	**2,74**	**2,74**
Growth	n.a.	46,2%	-46,6%	-105,0%	**n.a.**	0,0%	0,0%	0,0%	0,0%	0,0%
Other operating revenue	**26,27**	**34,74**	**22,86**	**21,48**	**-6,5%**	**20,09**	**18,79**	**17,57**	**16,43**	**15,36**
Growth	n.a.	27,9%	-41,9%	-6,2%	**n.a.**	-6,5%	-6,5%	-6,5%	-6,5%	-6,5%
Total Revenues	**1158,21**	**1130,05**	**1408,31**	**1509,37**		**1560,38**	**1583,03**	**1599,95**	**1631,42**	**1655,12**

Table 18: Portucel's historical and projected revenues in million EUR. Quantities in million of tonnes

As for paper pulp and forest, they decreased 16% p.a. for the former and 29% p.a. for the latter. This happened because Portucel in the last years has made an effort to consolidate its core business in paper and in energy, thus these two were increasingly incorporated in the paper manufacture. Due to the fact that it is expected that paper production will keep constant in the next years, the sales in pulp and forest should follow the same pattern. Nevertheless, it is important to mention that 2011 was a rough year for pulp due to commodity price pressures, so it is expected that pulp should reach and maintain 2010 levels. Apart from that, it is expected a price slump in 2014 due to supply pressures which will decrease revenues in pulp by 4% as seen for Altri.

Regarding other operating income, it gave an historical yearly growth rate of -6,5% p.a.. Taking in consideration the small amount in this item and the fact that the company is making its efforts to focus on its core business this makes the historical rate a feasible assumption.

1.10.1.1.2 Personnel

Like Altri, Portucel's personnel are linked to commodity price changes and not considered as correlated to the business activity. As it can be seen in the table below (table 19) these costs show a increasing tendency with an historical average of 6% p.a., this value shows a positive trend when considering the employment environment that is lived in Portugal, not only that but it is a feasible growth rate if we take in consideration that the firm is financially healthy and it intends to seek new growth opportunities in the energy sector.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Personnel	**112,05**	**114,74**	**127,02**	**133,71**	**6,1%**	**141,83**	**150,44**	**159,57**	**169,26**	**179,53**
Growth	n.a.	2,4%	10,2%	5,1%	**n.a.**	6,1%	6,1%	6,1%	6,1%	6,1%

Table 19: Portucel's historical and projected personnel costs in million EUR

1.10.1.1.3 Financial Expenses

Although it is already a low leveraged company, Portucel has still made some significant investments through the historical period, for which Portucel financed it with cash and debt. As it can be seen in the table below (table 20), interest expenses show a somewhat stable tendency, around EUR 25 million, with exception in 2008. This was due to the fact that Portucel swapped its interest rate from a variable one indexed to the Euribor to a fixed one. In this way 2008 should be regarded as an exceptional year in terms of interest expense.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Interest expense	**47,68**	**28,42**	**21,54**	**22,76**	**-21,8%**	**24,30**	**25,87**	**28,95**	**34,09**	**38,17**
Growth	n.a.	-51,7%	-27,7%	5,5%	**n.a.**	6,5%	6,2%	11,3%	16,3%	11,3%
Net debt	480,43	699,75	686,99	463,47	**-1,2%**	494,83	526,70	589,53	694,25	777,20
Growth	n.a.	37,6%	-1,8%	-39,4%	**n.a.**	6,5%	6,2%	11,3%	16,3%	11,3%
Interest rate	9,9%	4,1%	3,1%	4,9%	**n.a.**	4,9%	4,9%	4,9%	4,9%	4,9%
Other financial costs	**5,55**	**4,20**	**2,29**	**7,78**	**11,9%**	**7,78**	**7,78**	**7,78**	**7,78**	**7,78**
Growth	n.a.	-27,9%	-60,7%	122,3%	**n.a.**	0,0%	0,0%	0,0%	0,0%	0,0%

Table 20: Portucel's historical and projected financial costs in million EUR

Nevertheless, I expect that in the following years Portucel will increase its Debt as the operational results would allow a more levered structure, hence higher interest expenses. Nonetheless this increase would not compromise the financial health for the company at study and consequently its interest rate. Thus I expect that the interest rate in the next years will be constant to 2011, at 4,9%, so the payments will vary according to the growth of the Debt.

As for the other financial costs they have been very volatile, this as to do with the nature of the costs. As they represent the losses related with interest, FX swaps and derivatives to hedge shifts in the commodities prices (paper and pulp), although the latter represents almost the whole costs. It is also seen an increasing tendency, this has to do with the increase in production that requires more hedging contracts to be signed. As stated in Altri, these hedging contracts will roughly remain the same due to the expected stable production both in Pulp and Paper.In this way these costs are expected to remain stable in the next years.

1.10.1.1.4 Financial Income

The Financial Income in the table below related to interest bearing instruments and derivatives, both with somewhat equal weights. As it can be seen in the table below (table 21), these costs have been quite volatile. Also, they are relatively small in value when they are compared with all other costs. Due to these characteristics I will expect that these costs to be the same as for 2011 and remaining constant.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Other financial income	**33,60**	**25,04**	**3,74**	**14,20**	**-25,0%**	**14,20**	**14,20**	**14,20**	**14,20**	**14,20**
Growth	n.a.	-29,4%	-190,1%	133,4%	**n.a.**	0,0%	0,0%	0,0%	0,0%	0,0%

Table 21: Portucel's historical and projected financial income in million EUR

1.10.1.1.5 Provisions

As it can be observed in the table below provision costs along the historical period has shown a high volatility, these are related to provisions made for future losses like for example legal ones which account for the biggest weight. Despite the volatility of these costs, in terms of amount they are not significant and so in the next years it is forecasted that these costs will remain at zero.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Provisions (net)	-13,54	21,46	-1,17	5,61	**n.a.**	0,00	0,00	0,00	0,00	0,00

Table 24: Portucel's historical and projected provisions (net) in million of EUR

1.10.1.2 Drivers based on revenues

1.10.1.2.1 Cost of inventories

Cost of inventories represent the direct costs to the production process, these operational costs are then strictly correlated with the firm's activity, which means that they will behave according to the revenues pattern over the next years.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Cost of inventories	**475,09**	**483,81**	**522,86**	**619,02**	**9,2%**	**639,76**	**649,04**	**655,98**	**668,88**	**678,60**
Weight in revenues	41,0%	42,8%	37,1%	41,0%	**n.a.**	41,0%	41,0%	41,0%	41,0%	41,0%

Table 22: Portucel's historical and projected cost of revenues in million EUR

As we can see in the table 22, throughout the historical period these costs have remained quite stable over the past years and showing an increasing tendency. It is important to point out that the decrease in relative terms in 2010 is because this was the year when the largest increase in production occurred and also the commodity paper and pulp prices contributed for a very profitable year giving an increase in sales of 22%. As such, because I expect that there will be no increase in the production capacity and I also expect somewhat stable commodity prices for pulp and paper, these costs follow the pattern seen in 2011.

1.10.1.2.2 Cost of materials consumed

These costs, like the previous ones, are also essential to the production process. Hence they are also correlated to Portucel's business activity. These costs are associated with the consumption of resources in the production process, like for example, the pulp used for the paper. For this reason these costs were forecasted as a weight of the total revenues.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Cost of materials consumed	**281,80**	**288,95**	**336,91**	**358,30**	**8,3%**	**374,49**	**379,93**	**383,99**	**391,54**	**397,23**
Weight in revenues	24,3%	25,6%	23,9%	23,7%	**n.a.**	24,0%	24,0%	24,0%	24,0%	24,0%

Table 23: Portucel's historical and projected cost of materials in million EUR

In the table 23 one can observe that these costs have been quite stable in relative terms to sales and have also an increasing tendency in total values. Although in 2009 these costs jumped, and like the previous costs this was due to a decrease in revenues which is not expected in the next years. In this way I expect that these costs will remain constant to 2011.

1.10.1.2.3 Other

As it can be observed in table 24 these costs show small amounts in value, in a decreasing tendency with an average growth of -10% p.a.. Due to the fact that these costs are not very relevant in value and their somewhat stable behavior, I expect that in the next years these costs will also be stable and constant to the values of 2011.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Other	17,46	15,86	13,57	12,94	-9,5%	12,94	12,94	12,94	12,94	12,94
Weight in revenues	1,5%	1,4%	1,0%	0,9%	n.a.	0,8%	0,8%	0,8%	0,8%	0,8%

Table 24: Portucel's historical and projected other costs in million EUR

1.10.1.3 Drivers based on fixed assets

1.10.1.3.1 Depreciation

Depreciation accounts for the annual costs that the company incurs upon the utilization of fixed assets, like mills and machinery. So first, I took in consideration the fixed assets historical tendency and as it can be seen in table 25 this item has been quite volatile growing at an average rate of 10%, which was due the investments made in the paper and energy sector up until 2009.

	2007	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Net fixed assets	1053,23	1220,05	1626,39	1604,13	1529,71	9,8%	1482,61	1436,96	1436,96	1436,96	1436,96
Growth	n.a.	14,7%	28,7%	-1,4%	-4,8%	n.a.	-3,1%	-3,1%	0,0%	0,0%	0,0%

Table 25: Portucel's historical and projected net fixed assets in million EUR

As such, the first three years should be seen as exceptional years, because Portucel is not expected to make significant investments in the upcoming years. Hence, it was taken in

consideration the growth of the last two years that gave a decrease of roughly 3% p.a.. This is likely to be the behavior in the next years due to the previous heavy investment made. Nevertheless if this pattern would continue, the fixed assets would amount roughly at USD 1300 mio, this is a very low value given historical information. So in order to maintain a reasonable amount in fixed assets, this item will remain constant from 2014 onwards. In this way we expect that the company will maintain its assets in the long run.

In the table 26 one can observe the depreciation costs along the years, which have following an upwards tendency until 2010 where it stabilized around EUR 124 mio, this behavior coincides with the end of the heavy investment and it is now expected to follow the same pattern in the next years as the firm is not expected to invest intensively.

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Depreciation	**76,95**	**111,54**	**121,18**	**124,53**	**17,4%**	**124,53**	**124,53**	**124,53**	**124,53**	**124,53**
Growth	n.a.	37,1%	8,3%	2,7%	**n.a.**	0,0%	0,0%	0,0%	0,0%	0,0%

Table 26: Portucel's historical and projected depreciation costs in million EUR

1.10.1.3.2 Capex

These costs reflect the annual expenditure on investment, as for example mills, and machinery, along the historical period these costs have shown a high volatility. This is due to the investment needs of Portucel that needed to expand its mills and energy sector, and use new machinery. As it was seen in Altri, the Capex (table 27) was assessed through the following formula:

$$Net\ Fixed\ Asstets_n = Net\ Fixed\ Assets_{n-1} + Capex_n - Depreciation_n$$

	2008	2009	2010	2011	CAGR	2012	2013	2014	2015	2016
Capex	**246,90**	**505,40**	**95,50**	**33,00**	**-48,9%**	**77,43**	**78,88**	**124,53**	**124,53**	**124,53**
Growth	n.a.	71,6%	-166,6%	-106,3%	**n.a.**	85,3%	1,9%	45,7%	0,0%	0,0%

Table 27: Portucel's historical and projected capital expenditures in million EUR

1.10.2 Net Working Capital and Other Non Cash Items

As mentioned earlier, the Net Working Capital (NWC) measures the operational liquidity for the company. Like in Altri all the components were forecasted as a percentage to total revenues. In the assessment of the NWC it was not considered Biological products as inventories and derivatives were also disregarded, either as receivables and payables.

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Inventories	**239,39**	**145,23**	**171,66**	**187,36**	**193,69**	**196,50**	**198,60**	**202,51**	**205,45**
Weight in revenues	**20,7%**	**12,9%**	**12,2%**	**12,4%**	**12,4%**	**12,4%**	**12,4%**	**12,4%**	**12,4%**
Receivable and other current assets	189,56	168,19	212,60	242,26	n.a.	n.a.	n.a.	n.a.	na.
State and other public entities (receivable)	47,07	51,48	32,23	54,68	n.a.	n.a.	n.a.	n.a.	na.
Cash and equivalents	222,55	52,55	133,96	267,43	n.a.	n.a.	n.a.	n.a.	na.
Accounts receivable	**459,17**	**272,22**	**378,79**	**564,37**	**583,45**	**591,92**	**598,24**	**610,01**	**618,87**
Weight in revenues	**39,6%**	**24,1%**	**26,9%**	**37,4%**	**37,4%**	**37,4%**	**37,4%**	**37,4%**	**37,4%**
Payables and other current liabilities	248,66	269,17	264,65	280,45	n.a.	n.a.	n.a.	n.a.	na.
State and other public entities (payable)	38,91	55,58	49,33	79,67	n.a.	n.a.	n.a.	n.a.	na.
Accounts payable	**287,57**	**324,75**	**313,98**	**360,12**	**372,29**	**377,69**	**381,73**	**389,24**	**394,89**
Weight in revenues	**24,8%**	**28,7%**	**22,3%**	**23,9%**	**23,9%**	**23,9%**	**23,9%**	**23,9%**	**23,9%**

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Working Capital	411,00	92,70	236,47	391,61	404,85	410,73	415,12	423,28	429,43
Δ Net Working Capital	n.a.	-318,29	143,76	155,15	13,24	5,87	4,39	8,16	6,15

Table 28: Portucel's historical and projected net working capital in million EUR

As it can be seen in table 28 Inventories have roughly stayed stable around the 12% weight to revenues with an exception in 2008. This change occurred because the firm had the purpose to reduce the Working Capital level, as it was too high for the business level, so this is seen as an exceptional year. Hence inventories are expected to be constant to 2011. As for account receivables they have been somewhat volatile, although with an increasing tendency. This has been influenced by increasing clients' receivables and volatile cash. The latter though has been exceptional in 2009 and 2010 because it financed the investments with cash. Only in 2011 has the firm managed to get back on normal cash levels, in this way it will be expected receivables of the levels of 2011. As for the payables they have been somewhat stable as total values but in relative terms they reach a peak in 2009 that is mainly due to higher other creditors and lower revenue levels, the creditors increased from this year onward due to the investments

and higher business production and capacity although I expect that the levels of the next years shall reflect the ones from 2011.

1.10.3 Free-cash Flow to the Firm

All the forecasts made until now are to compute the FCFF for Portucel, and as it was demonstrated it is a complex matter that requires a profound knowledge on the firm's business and strategy for the near future. So we followed the formula of FCFF that was mentioned in the literature review.

$$FCFF = EBIT \times (1 - Tax\ rate) + Depreciation - Capex - \Delta NWC$$

Although before getting to the forecasts of FCFF it should also be shown the forecasts for other useful items, like EBITDA, EBIT, Net Income, that were obtained from the items initially covered in this part of the paper.

	2008	2009	2010	2011	2012	2013	2014	2015	2016
EBITDA	258,18	243,62	399,00	391,28	391,37	390,69	387,48	388,80	386,83
EBITDA margin	22,3%	21,6%	28,3%	25,9%	25,1%	24,7%	24,2%	23,8%	23,4%
EBIT	181,23	132,08	277,82	266,75	266,84	266,16	262,95	264,28	262,30
Taxes	40,40	31,12	64,43	62,75	62,39	61,82	60,25	59,29	57,78
Net Income	121,20	93,37	193,30	188,25	187,16	185,47	180,75	177,88	173,34

Table 29: Portucel's historical and projected main financial data in million EUR

	2008	2009	2010	2011	2012	2013	2014	2015	2016
EBIT	181,23	132,08	277,82	266,75	266,84	266,16	262,95	264,28	262,30
EBIT×(1-T)	135,92	99,06	208,36	200,06	200,13	199,62	197,21	198,21	196,72
Depreciation	76,95	111,54	121,18	124,53	124,53	124,53	124,53	124,53	124,53
Capex	246,90	505,40	95,50	33,00	77,43	78,88	124,53	124,53	124,53
ΔNWC	0,00	-318,29	143,76	155,15	13,24	5,87	4,39	8,16	6,15
FCFF	**-34,03**	**23,50**	**90,28**	**136,44**	**233,99**	**239,39**	**192,82**	**190,04**	**190,57**

Table 30: Portucel's historical and projected FCFF in million EUR

1.10.4 Risk Parameters

As it was done earlier for Altri, in this stage of the paper it will be analyzed all the risk parameters that will allow to measure Portucel's business risk and that will be crucial to the valuation of the different FCFF approaches. Like before, this analysis intends to support the

FCCF analysis with a feasible enterprise value for Portucel, which will reflect the firm's share price potential within 12 months, which is in December of 2012.

1.10.4.1 Risk-free Rate

By now we know that the risk-free rate should reflect demanded return for a riskless investment. As it was seen earlier for Altri, the rationale and macroeconomic context for choosing the risk-free rate are the same. In this way it was chosen the German bond with a maturity of 10 years at 30-12-2013, which gives a rate of 1,842%.

1.10.4.2 Cost of Debt

I will ascertain the cost of debt for Portucel as it was done before. Below (table 30), one can see that the implied Rd has the lowest cost of debt and follows a somewhat stable behavior, although in 2011 there was a significant decrease due to the macroeconomic conditions that led central banks (including Deutsche Bundesbank) to decrease their interest rates.

	2008	2009	2010	2011
Interest payments	47,68	28,42	21,54	22,76
EBIT	266,84	266,16	262,95	264,28
Net Debt	480,43	699,75	686,99	463,47
Interest coverage ratio	5,60	9,37	12,21	11,61
Implied spread	2,0%	1,5%	1,0%	1,0%
German Bond (10 years)	3,0%	3,4%	3,0%	1,8%
Implied Rd	5,0%	4,9%	4,0%	2,8%
Interest/Net debt	9,9%	4,1%	3,1%	4,9%
Bloomberg Rd	4,4%	3,4%	7,2%	15,1%

Table 30: Portucel's historical cost of debt

It was possible to assess the historical cost of debt for the firm at study through the Bloomberg platform, which takes in consideration the economic conditions in Portugal at that time and to the capital structure of Portucel. The reason for the value of 2011 is because at the time the Portuguese sovereign debt yields were at an all time high.

It is expected that Portucel will increase its Debt in the next years, thus increasing the cost of debt, which should be higher than the historical values. In my view the cost of debt will be higher than the ones of implied cost of debt and the interest rate, as these do not reflect

macroeconomic conditions. Also, I expect that the cost should be lower than the one saw in Bloomberg, as the values reflect all time high government debt yields. In this way it was assumed a cost of debt of 6%, which reflects a reasonable increase.

1.10.4.3 Risk Premium

Like it was done for Altri, in this part it was assessed the market risk and a specific country risk for Portucel. The values are similar to the ones saw in Altri, be it in terms of market premium risk because it is equal to all stocks, or in terms of country risk, as both companies operate and produce in the same country (Portugal). For these reasons it was used the same risk premium, for both market and country. As such the market risk premium and country risk premium are 5,8% and 4,8% respectively.

1.10.4.4 Cost of Equity and Cost of Capital

In this part we will assess the Portucel's business risk, for this we will follow the same logic as the one for Altri. Firstly we will determine the levered beta through an estimation by a linear regression, that enables to give the correlation between the Morgan Stanley global equity index (MXWO Index) and Portucel's daily returns from 2010 to 2011, which gave a beta of 0,643. Which I compared it to the beta taken from Bloomberg data which gave a very similar value of 0,69. The small difference here has to do with the fact that the Bloomberg takes in account weekly returns and also the timetable used Bloomberg's analysis can be different.

	2011	2012	2013	2014	2015	2016
FCFF		233,99	239,39	192,82	190,04	190,57
D/V	24,7%	25,0%	27,0%	30,0%	35,0%	35,0%
E/V	75,3%	75,0%	73,0%	70,0%	65,0%	65,0%
D/E	32,8%	33,3%	37,0%	42,9%	53,8%	53,8%
bu	0,89	0,89	0,89	0,89	0,89	0,89
bl	1,11	1,11	1,14	1,18	1,25	1,25
Re	13,1%	13,1%	13,2%	13,5%	13,9%	13,9%
pre-tax rd	6,0%	6,0%	6,0%	6,0%	6,0%	6,0%
after-tax rd	4,5%	4,5%	4,5%	4,5%	4,5%	4,5%
Rwacc	11,0%	10,9%	10,9%	10,8%	10,6%	10,6%

Table 31: Portucel's forecasted cost of capital

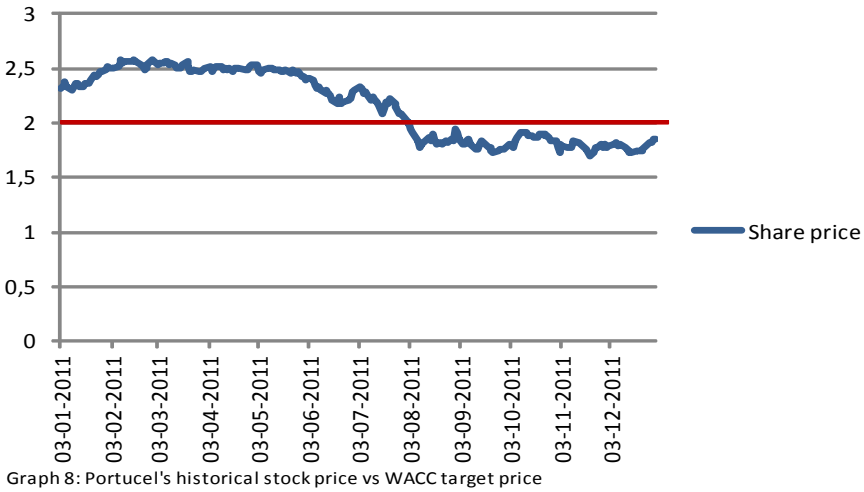
As it can be seen in table 31, the bu was ascertained like it was for Altri. After, I used the target D/V ratio to obtain bl, thus giving the levered betas above. Taking in consideration all the items analyzed earlier, the CAPM formula gives the Re seen above varying accordingly the capital structure and in the end we can observe the implied expected cost of capital along the explicit period.

1.10.5 WACC and APV

Like it was done in Altri's valuation it was assessed the enterprise value for Portucel using the WACC and the APV approaches like it was also developed firstly in the literature review. For the first approach, all the cash-flows from 1012 to 2016 were discounted back to 2011 which is the year of our valuation. For the terminal growth rate it was used the same reasoning and analysis as with Altri, once again due to the fact that both of the companies are very similar in these terms, also it is our believe that Portucel will not grow at a higher rate than the Portuguese nominal GDP mainly due the fact that we are referring to a cash-cow firm that is expected to be somewhat stable in terms of growth, as such our estimate goes back to 1%.

In this way, the table below shows the output for Portucel's valuation at the end of 2011 and its comparison to the one year historical share price. It is clear that currently the stock is on a very low level when comparing to the beginning of the year, and the target price's potential of nearly 9% gives still a lower price than the majority of the price along the past year.

	2011
Share Price	1,84
Market Cap.	1537,33
# shares	767,50
Target Price	2,00
Potential	8,9%



Graph 8: Portucel's historical stock price vs WACC target price

As for the second approach, like for Altri, the ITS using the cost of debt and the corporate tax and computed the cost of financial distress like it was mentioned in the literature review. As it can be seen in table 32 the PV of ITS amounted to almost 215 million EUR, taking in consideration the probability of default this gives a value of roughly 205 million EUR.

	2012	2013	2014	2015	2016
Debt	463,47	495,11	527,01	589,89	694,65
ITS	6,95	7,43	7,91	8,85	10,42

	2011
PV of ITS	214,52
P(D) ITS	205,60

Table 32: Portucel's forecasted PV of ITS in million EUR

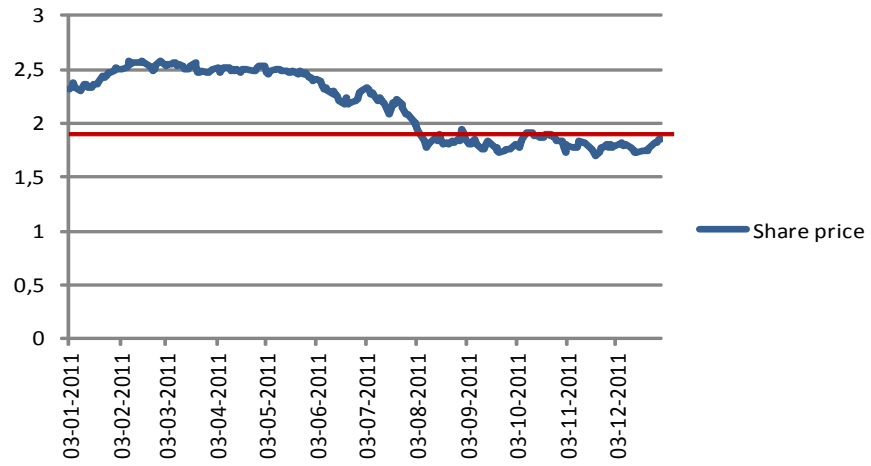
	2011	2012	2013	2014	2015
D/V	24,7%	25,0%	27,0%	30,0%	35,0%
% CFD	2,0%	2,0%	2,5%	2,5%	3,0%
P (D)	4,2%	4,2%	4,2%	4,2%	4,2%
CFD	35,78	35,33	43,39	43,69	52,91

	2011
PV of CFD	156,25
P(D) CFD	6,49

Table 33: Portucel's forecasted PV of CFD in million EUR

As it can be ascertained in table 33 the PV of CFD amounts up to almost 156 million EUR, but taking in account the probability of default this accounts for roughly 6 million EUR. It is important to bear in mind that the probability of default was computed as it was seen previously in this paper, and the % CFD were forecasted based on the leverage structure along the explicit period as it was also seen in the literature review.

	2011
Share Price	1,84
Market Cap.	1524,79
# shares	767,50
Target Price	1,99
Potential	8,0%



Graph 9: Portucel's historical stock price vs target price

In the above graph it can be observed the target price for Portucel in 2011, which gave a price per share of 1,99 EUR and a potential upside of 8% over the price at the end of 2011. Also by looking at the same graph it can be seen that the target price is lower than most of the closing prices along 2011, which is a common conclusion from the WACC valuation.

1.10.6 Multiple Analysis

As it was seen earlier for Altri, in this section the company Portucel will be analyzed through the method of comparables that was firstly introduced in the literature review. In order to briefly the methodology of this method as it was approached in the literature review and in Altri multiples valuation; firstly it is assembled a group of similar companies that can will form the peer group; secondly it is computed the average of several relevant financial ratios of the former group, that will be used to assess the value for the firm at study. Like Altri it was used the same multiples under the same rationale.

Name	P/B	P/E	EV/EBITDA	EV/EBIT	P/ Fix. Assets
PORTUCEL SA	**1,35**	**10,95**	**6,97**	**9,83**	**1,48**
SHANDONG CHENMING PAPER-H	0,36	7,42	7,64	15,38	0,26
NORSKE SKOGINDUSTRIER ASA	0,15	0,00	5,92	22,13	0,07
HOKUETSU KISHU PAPER CO LTD	0,54	17,48	7,80	38,36	0,35
SUZANO PAPEL E CELULO-PREF A	0,65	283,57	10,56	22,97	0,61
HOLMEN AB-B SHARES	0,76	15,18	7,81	14,44	1,31
LEE & MAN PAPER MANUFACTURIN	1,71	14,28	11,79	15,31	1,42
SHANDONG SUN PAPER INDUSTR-A	1,03	14,22	7,16	13,72	0,56
HANSOL PAPER CO LTD	0,52	8,14	0,00	0,00	0,25
GLATFELTER	1,38	13,00	5,97	0,00	1,26
ENCE ENERGIA Y CELULOSA SA	0,73	10,18	4,74	7,61	0,62
PAPELES Y CARTONES DE EUROPA	0,73	10,96	6,07	11,83	0,36
BALLARPUR INDUSTRIES LTD	0,44	7,37	5,58	9,97	0,17
BUCKEYE TECHNOLOGIES INC	1,48	10,44	5,34	6,95	2,10
WAUSAU PAPER CORP	2,57	25,82	8,08	19,34	1,08
ARCTIC PAPER SA	0,46	10,36	3,33	9,48	0,43
NEENAH PAPER INC	1,87	10,18	6,08	0,00	1,83
Peer Average	**0,79**	**11,92**	**6,66**	**14,14**	**0,56**

Table 34: Portucel's peer's and respective multiples

In table 34 it is possible to see the several multiples for the peer companies and the respective average was obtained excluding the values lower than the first quartile and higher than the third. Afterwards, the multiples were computed with the respective values of Portucel and gave the share prices as shown in table 35.

	Book Value	Earnings	EBITDA	EBIT	Fix. Assets
Portucel	1564,46	187,16	391,37	266,84	1475,75

	P/B	P/E	EV/EBITDA	EV/EBIT	P/Fix. Assets
Market Cap.	1239,63	2230,70	2607,34	3277,58	823,61
# Shares	767,50	767,50	767,50	767,50	767,50
Share Price	1,62	2,91	2,75	4,27	1,07

Table 35: Portucel's multiple valuation output. Values in million EUR

None of the multiples are not in line with the valuation obtained in the cash-flows models, which means that the market is not in concordance with the underlying theoretical and macroeconomic assumptions in the latter models. Also, one should note that the majority of the multiples undervalue Portucel's current price per share of 2,84 EUR.

1.10.7 The Valuation

All the methods used for Portucel can give an immediate conclusion of disparity between the outputs given by the cash-flow models and the ones given by the relative approach, not only that but the given the wide spread in the multiples can mean that the market is not in agreement when it comes to estimate Portucel's value. This last conclusion is quite clear if it is taken in consideration the difference in value of the market estimates for the company using the EV/EBITDA and the EV/EBIT multiples, this kind lack of convergence means that it is better not to solely rely on this method to take conclusions on Portucel's potential.

Regarding, the WACC and APV models, they give very similar results which is quite predictable given that they both share the same theoretical assumptions. In this way, this paper estimates a market capitalization for Portucel of 1537,33 million EUR after 12 months as of 31th of December 2011 and a target price of 2 EUR giving a potential upside value of 8,9%. As a last note it is important to mention the most relevant assumptions that leaded to this target price, firstly it assumed that Portucel at the moment is underleveraged and that this tendency will change in the next couple of years, secondly Portucel's financial performance has been quite solid in the past years and it is likely to remain that way in the near future giving consistently positive cash-flows which is typically of a cash-cow firm like Portucel, this will lead to the last assumption in which Portucel is likely to remain stable in all the drivers of the FCFF which means that its revenues are not expected to grow at a fast rate nor its costs are expected to decrease at the same rate.

1.11 Valuing the merged entity

In this final section of the paper I will assess the value for the Portucel Altri deal with the potential synergies included, lastly I will determine the means of payment for such acquisition (cash or stock). As seen before in the literature review the first step is to assess the value of the combined entity without synergies and afterwards one must add the operational and financial synergies if applicable. In the sum of the value of both entities it is important to review the assumptions that are not common between Portucel and Altri and respectively build a new model for the new merged entity.

1.11.1 Valuing the merged entity without synergies

The purpose of this section is to build a new model that reflects the characteristics of the two firms combined and at the same time assures that the assumptions made in each firm's model are still valid. The valuation method considered was the WACC as in the standalone valuation it was the model that reflected the final target price for each firm, in order to confirm the values. In this way I consolidated the financials which would consequently lead to an estimation of the FCFF of the merged entity, and in table 36 it can be seen the expected financials of the merged entity over the next years.

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total revenues	1438,38	1439,66	1908,69	1995,97	2058,69	2093,32	2102,40	2145,95	2182,04
Total operational costs	1113,52	1144,67	1348,21	1490,39	1490,47	1521,33	1568,06	1575,69	1609,19
EBITDA	**324,86**	**294,99**	**560,48**	**505,58**	**568,22**	**571,99**	**534,33**	**570,26**	**572,85**
EBITDA margin	**22,6%**	**20,5%**	**29,4%**	**25,3%**	**27,6%**	**27,3%**	**25,4%**	**26,6%**	**26,3%**
Depreciation	105,77	150,46	172,38	176,79	176,79	176,79	176,79	176,79	176,79
EBIT	**219,09**	**144,53**	**388,10**	**328,79**	**391,43**	**395,20**	**357,55**	**393,47**	**396,06**
Group share of associated companies	0,00	0,00	0,00	0,59	0,59	0,59	0,59	0,59	0,59
Financial costs	99,61	62,48	59,93	74,42	73,76	73,31	74,54	77,98	80,49
Financial Income	44,38	29,71	7,57	23,65	23,65	23,65	23,65	23,65	23,65
Profit before tax	163,86	111,76	335,74	278,62	341,91	346,14	307,26	339,74	339,81
Taxes	40,97	27,94	80,75	69,65	85,48	86,53	76,81	84,94	84,95
Net income	**122,90**	**83,82**	**254,99**	**208,96**	**256,43**	**259,60**	**230,44**	**254,81**	**254,86**

Table 36: Merged Entity's historical and forecasted drivers in million EUR

As seen earlier in this paper both companies produce at its maximum capacity and are not expected to make significant investments in order to increase such capacity. Thus its capex

would shall be sufficient enough to able maintain the fixed assets. This means that for the merged entity these needs of capex will hold and as such depreciation and capital expenditure will be equal to the sum of the values for the separated entities. In this way, I consolidated the required data and the FCFF, which gave the output that can be seen in table 37.

	2008	2009	2010	2011	2012	2013	2014	2015	2016
EBIT	**219,09**	**144,53**	**388,10**	**328,79**	**391,43**	**395,20**	**357,55**	**393,47**	**396,06**
EBIT×(1-T)	164,32	108,40	291,08	246,60	293,58	296,40	268,16	295,11	297,04
Depreciation	105,77	150,46	172,38	176,79	176,79	176,79	176,79	176,79	176,79
Capex	508,70	597,50	122,30	46,40	100,26	103,60	176,79	176,79	176,79
Δ NWC	0,00	-284,53	161,59	193,28	15,27	10,39	1,44	12,72	10,82
FCFF	**-238,61**	**-54,11**	**179,56**	**183,70**	**354,83**	**359,20**	**266,73**	**282,39**	**286,23**

Table 37: Merged Entity's historical and forecasted FCFF in million EUR

Having estimated the future FCFF for the merged entity, I began the next step of estimating the appropriate cost of capital to value the new entity. So, I assessed the relevant items of the Rwacc formula (D/V, E/V, Re, Rd) in such way that they would comply with the assumptions seen for each company.

Regarding the capital structure, I consolidated the debt and enterprise value of both companies in each period giving the values seen below (table 37), however 2016 is an exception to this because I have not calculated neither the debt or enterprise values. But, due to the fact that the capital structure for both entities is the same in 2015 and 2016 I simply applied the same for the merged entity. As for Re, the capital structure is already known and Bu is the same for both companies as they belong to the same industry so it was calculated the Be according to the capital structure and then the respective cost of equity, as it can be seen in the table below.

	2011	2012	2013	2014	2015	2016
Net Debt	1194,93	1140,36	1063,78	1041,55	1151,80	
EV	3010,16	2973,12	2927,82	2969,99	3000,61	
D/V	39,70%	38,36%	36,33%	35,07%	38,39%	38,39%
E/V	60,30%	61,64%	63,67%	64,93%	61,61%	61,61%
D/E	65,83%	62,22%	57,07%	54,01%	62,30%	62,30%
bu	0,89	0,89	0,89	0,89	0,89	0,89
bl	1,33	1,31	1,27	1,25	1,31	1,31
re	14,33%	14,19%	13,99%	13,87%	14,19%	14,19%
pre-tax rd	6,23%	6,23%	6,23%	6,23%	6,23%	6,23%
after-tax rd	4,67%	4,67%	4,67%	4,67%	4,67%	4,67%
Rwacc	**10,50%**	**10,54%**	**10,61%**	**10,65%**	**10,54%**	**10,54%**

Table 38: Merged Entity's historical and forecasted cost of capital in million EUR

	2011	2012	2013	2014	2015
EV	**3010,16**	**2973,01**	**2927,61**	**2969,71**	**3000,33**
Debt	**1194,93**	**1140,36**	**1063,78**	**1041,55**	**1151,80**
Equity	**1815,23**	**1832,65**	**1863,83**	**1928,16**	**1848,53**

Table 39: Merged Entity's current and forecasted value in million EUR

The last item on the cost of capital that is needed to be assessed is the Rd which is different for each firm as they have different capital structures and financial health. As it was said before, the value of the merged company without synergies must be equal to the sum of the separated entities (EUR 3.010,16 million), so in order to rightfully assess this cost I used the Solver from Excel with the condition to change the value for Rd until the value for EV solved would be equal to the sum of the EV of both firms. Thus giving a new cost of debt of 6,23%.

Hence taking in consideration these parameters discussed above I assessed the cost of capital along the explicit period simply following the Rwacc formula, as it can be seen in table 38. In the next step I discounted the several FCFF using the new cost of capital of the merged entity and in table 39 it is possible to see the respective output that estimates the value for the merged firm.

1.11.2 Valuing the merged entity with synergies

As stated before in this paper this part will assess the several potential synergies that may arise from a deal between Altri and Portucel in the upcoming years, so I will go through both the potential operational and financial synergies. In terms of the former it is important to remind that both firms already sell almost all their production, both of them have recognized quality brands sold around the globe and so if there is potential it should be on the cost side, not only in terms of personnel but also in terms of the cost of materials and inventories. In terms of financial synergies, I believe that the merged entity will beneficiate from the fact that it could be room to renegotiate Altri's debt and that would consequently push down the cost of capital.

1.11.3 Operational Synergies

As discussed above it is expected that this merger will only beneficiate from cost synergies, hence I will review each item in this section which will enable to get a feasible operational saving that translates in an increase in EBITDA and consequently in FCFF. In this case I have separated the operational expenses by entity and calculated the operational gain that could occur and afterwards I took in consideration the cost of capital of the merged entity.

In terms of personnel when both firms merge there will be twice of the personnel required in the non operational departments, like marketing, sales, etc. So due to the fact that is Portucel that is acquiring Altri and due to the difference in size it is more likely that Altri will have the most significant reductions in these expenses. Regarding the cost of sales the benefits will somewhat distribute themselves equally among the two firms, nonetheless it is important to point out that these will arise from the gain in pulp production know-how, Portucel's pulp cost of inventories will save substantially due to Altri's experience in the business and negotiation with its suppliers, also Altri would not have to resort so much in external services as the merger with Portucel would mitigate some of the needs. Hence, in table 40 and 41 one can see the output of such potential savings along the explicit period and the respective total synergy (discounted by the cost of capital of the merged entity) attributable to each firm.

	2012	2013	2014	2015	2016
Cost of Inventories	6,96	7,00	6,97	7,10	7,15
Cost of materials consumed	8,98	9,07	9,14	9,24	9,33
Personnel	1,42	1,50	1,60	1,69	1,80

Table 40: Portucel's economies of scale synergies in million EUR

Total Synergy	**66,29**

Savings	
Costs attributable to pulp	
Cost of Inventories	3,0%
Cost of materials consumed	1,0%
Personnel	1,0%
Costs attributable to paper	
Cost of Inventories	1,0%
Cost of materials consumed	3,0%

	2012	2013	2014	2015	2016
Cost of sales	1,59	1,63	1,81	1,65	1,69
External supplies and services	2,39	2,45	2,61	2,47	2,53
Personnel	1,02	1,05	1,07	1,10	1,12

Table 41: Altri's economies of scale synergies in million EUR

Total Synergy	**19,50**

Savings	
Costs attributable to pulp	
Cost of sales	1,0%
External supplies and service	2,0%
Personnel	3,0%

1.11.4 Financial Synergies

As referred earlier it is expected that financial synergies arise from this transaction between Altri and Portucel, specifically it is expected that after the merger the new entity will be able to renegotiate the old Altri debt to a more competitive rate, hence lowering the cost of capital of the combined entity and consequently increasing the enterprise value. So it is assumed that the renegotiation of the old debt would bring the rate of those loans to 6% which is the same of Portucel, thus lowering the Rd of the merged company from 6,23% to 6%. In this way a new Rwacc was assessed given this cost of debt as it can be seen in table 42.

	2011	2012	2013	2014	2015	2016
FCFF	0,00	354,83	359,20	266,73	282,39	286,23
Net Debt	1194,93	1140,36	1063,78	1041,55	1151,80	
EV	3010,16	2973,12	2927,82	2969,99	3000,61	
D/V	39,7%	38,4%	36,3%	35,1%	38,4%	38,4%
E/V	60,3%	61,6%	63,7%	64,9%	61,6%	61,6%
D/E	65,8%	62,2%	57,1%	54,0%	62,3%	62,3%
bu	0,89	0,89	0,89	0,89	0,89	0,89
bl	1,33	1,31	1,27	1,25	1,31	1,31
re	14,33%	14,19%	13,99%	13,87%	14,19%	14,19%
pre-tax rd	6,00%	6,00%	6,00%	6,00%	6,00%	6,00%
after-tax rd	4,50%	4,50%	4,50%	4,50%	4,50%	4,50%
Rwacc	**10,43%**	**10,47%**	**10,54%**	**10,59%**	**10,47%**	**10,47%**

Table 42: Merged entity's cost of debt synergies in million EUR

	2011	2012	2013	2014	2015
EV	**3030,62**	**2993,62**	**2948,41**	**2990,74**	**3021,57**
Debt	**1194,93**	**1284,00**	**1231,03**	**1211,81**	**1344,32**
Equity	**1835,69**	**1709,61**	**1717,38**	**1778,93**	**1677,24**

Previous market cap.	**1815,23**

Synergy	**20,46**

Afterwards, I discounted the FCFF under the new cost of capital which led to a higher enterprise value than before (at the moment of the valuation of the merged entity without synergies), so the difference between the two would give the above synergy. It is important to point out that due to the fact that this synergy is not directly attributable to just one of the two firms I thought that because both Portucel and Altri have an important role in this synergy that they should be attributed equally.

1.11.5 Total Synergies

The value of the synergies in Portucel and Altri deal amount up to EUR 106,26 million which accounts for 6% of the value of the merged entity without synergies, this value clearly stands out the conservative approach in which these synergies were assessed, in table 42 on can see how this amount in synergies is allocated among the different types. Most of the synergies value is in savings in COGS which is very characteristic in the deals of the industry.

		EV with syn.	EV without syn.
Operational Synergies	**85,80**	**1901,03**	**1815,23**
COGS	75,90	1891,13	1815,23
Personnel	9,90	1825,13	1815,23
Financial Synergies	**20,46**	**1835,69**	**1815,23**
Renegotiation of Debt	20,46	1835,69	1815,23
Total synergies	**106,26**	**1921,49**	**1815,23**

Table 42: Merged entity's synergies in million EUR

1.12 Paying the deal

In this last part of the paper it was assessed the best way to pay the deal, as seen in the literature review it is preferable to pay in cash, and so I will assess if there is room for the merged entity to increase its debt in order to pay the deal in cash. Although, First I need to estimate the value to pay for Altri which I obtained by adding the synergies to Altri's target market capitalization. As seen in table 43 this amounts to a total of EUR 307 million, which, once again, translates in adding the operational synergies attributed to Altri and half of the financial synergies.

	EUR millions
Altri market cap.	**277,90**
Synergies	
Operational	19,50
Financial	10,23
Total value	**307,64**

Table 43: Altri's total value in million EUR

Price	Upside
1,35	**12,9%**
1,50	**25,0%**

In 2011, according to the merged entity's financials calculated earlier in this section Debt amounts at about EUR 1.194 million and EBIT up to EUR 328 million which gives an interest coverage ratio of 6,6, this means that the merged entity is able to increase its Debt as this ratio can go as low as 3,5 (which is the minimum coverage ratio for investment grade rating).

Hence I calculated the amount of Debt that was available to be raised by the implied Interest payments from the 3,5 ratio and assuming that the cost of debt would not increase because the company would still be classified with an investment grade rating then the implied maximum Debt would be EUR 1.507 million, about EUR 312 million more than the current

Debt. So this means that it is possible to pay the entire deal with cash. In this way by consolidating the synergies, enterprise values and number of shares, the new firm will have a target price of 1,98 EUR with a Enterprise Value of EUR 1.921 milion.

1.13 Conclusion

Along this paper we have seen that the pulp and paper industry has been characterized by high competitiveness which as lead into stronger pressures over operational margins and cost reductions. In Portugal this market is has two main entities (Altri and Portucel) which are recognized worldwide for their products quality. This recognition is extremely important in this industry as the Portuguese market is not a core one for each company, since they focus on the external markets.

Due to this extremely competitive environment where it is possible to find companies much larger than the ones at study, the opportunity to combine two players that are specialized in different products, Altri in pulp and Portucel in paper, will enable for a new entity to emerge that not only is more diversified but more importantly can become operationally more efficient. This new entity combines the specialization and knowhow of the pulp production process with the size and worldwide recognized quality paper. Also for the short and medium term this new entity would beneficiate of the fact that both companies completed a cycle of investments and so it means that they will remain stable, which makes it easier for the integration.

The acquisition of Altri through an offer to its shareholders, at this time is expected to be a good opportunity also as currently the stock is under valuated and acquiring shareholders will gain from such difference from the current to its target price. Adding to this argument, is important to state that both companies, and in this case is more relevant for Altri, were evaluated on a very conservative approach which means that acquiring shareholders could even see its potential gains to be higher than expected. Also, this acquisition is expected to create synergies, most of the through operational cost reductions by combining the strengths of two companies that are operationally more efficient than the other players in this industry.

On a final note, Portucel will make a bid to Altri's shareholders with the purpose to buy their shares entirely with cash, the price to offer will correspond to the fair value attributed to Altri plus its potential synergies, giving an offer of EUR 1,50 per share.

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