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M&A: The Case of Secil and Lafarge Betões

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ABSTRACT

The drive of the choice of the acquisition of Lafarge Betões by Secil as the subject of this dissertation was to try to understand the rationale of investing in a business that is currently in a very adverse economic environment.

The forecast in this uncertain period is now a question of belief. Secil believed that, in Portugal, in this recessionary environment was worth paying €65 million for Lafarge Betões.

Secil had a long term perspective that the Portuguese economy and the industry will recover and the acquisition will bring a dominant market position overtaking Cimpor and improved efficiencies that will contribute to a better performance in 2014-2015 when the economy will start growing.

The holding company Semapa is negotiating the acquisition of the remaining 49% share in Secil and was recently a candidate to the acquisition of Cimpor.

It is this investment effort in the Portuguese industry, the optimistic belief of the “captains of industry”, that has attracted my curiosity and justified the choice of this subject.

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LIST OF ABBREVIATIONS

APV: Adjusted Present Value

CAPM: Capital Asset Pricing Model

CF: Cash Flow

DCF: Discounted Cash Flow

EBIT: Earnings before Interest and Taxes

EBITDA: Earnings before Interests, Taxes, Depreciation and Amortization

ECF: Equity Cash Flow

ERP: Equity Risk Premium

FCF: Free Cash Flow

FCFE: Free Cash Flow to Equity

FCFF: Free Cash Flow to the Firm

K_d : Cost of Debt

K_e : Require return on Equity

K_u : Cost of the Unlevered Equity

M&A: Mergers and Acquisitions

VR: Terminal Value

VTS: Value of the Tax Shields

WACC: Weighted Average Cost of Capital

β : Beta

1. Introduction

This study is a dissertation on Mergers & Acquisitions (M&A) using the example of the recent acquisition of Lafarge Betões by Secil.

In the case of this horizontal acquisition, there was public data available and it was subject of analysis by anti-trust authorities due to the fact that both companies operate in the concrete business.

The objective was to value the two companies separately and then perform the value of the combined firm and analyze if there was potential for value creation by the combined firm to justify the long-lasting and difficult process which is an acquisition.

Secil is major player in the cement industry, an industry that in Portugal has been subject to numerous acquisitions, since companies in the industry used acquisitions to grow.

This dissertation is formed by three parts, the literature review, the industry analysis and the companies' valuation.

The main objective of the literature review is to appraise the main valuation methods mentioned in academic readings with special emphasis in the ones that are going to be utilized in the analysis.

The literature review will also focus in the types of M&A and the strategic reasons that lead to the process of combining firms.

The Company and Industry overview will describe the cement and concrete markets with volumes, growth trends, main players, their market shares, the international markets where they operate, etc.

Finally, the valuation of the companies, that leads to a deep analysis of the strategic and financial reasons that explain the acquisition of Lafarge Betões by Secil.

It was conducted a standalone valuation of both firms which sum is the value of the merged firm without synergies. Then it was estimated the value of the potential synergies by quantifying the strategic rational of the deal (market leader position in the concrete market and cost efficiencies) to obtain the value of the merged firm with synergies.

Finally, it was compared the value of the valuation with the value of the transaction and described the rational of both firms in the completion of this deal.

2. Literature review

2.1. Valuation Methods

Damodaran (2006) considers that valuation is the “heart of finance” since it is a fundamental activity for corporate finance and portfolio management.

Fernández (2007b.) demonstrates how valuation is not only important to value a company and justify a premium in a public offer but it is also a primary tool to manage a company, being a guide to managers through some strategic decisions, such as:

- Sell, buy, hold recommendations;
- Compare companies performances;
- Portfolio composition;
- Valuation on business units to decide which one must sell, merge, abandon, etc;
- Measuring possible strategies;
- etc.

The first three valuation objectives show how valuation of listed companies will help a company to be more competitive, and the other two are purely strategic decisions that managers have to make on a business daily environment, which reinforces the importance of valuation for companies.

In the literature it is possible to find numerous views about valuation classifications.

Damodaran (2006) considers four types of valuation: Discounted Cash Flow (DCF), Liquidation and Accounting, Relative Valuation and Real Options. These four types of valuations are going to be analyzed and discussed in the literature review.

It is important to clarify that researchers agree that for DCF and Relative Valuation there are two possible approaches: the Equity Valuation and the Firm Valuation.

The Equity Valuation estimates the value of the firm for the shareholders and the Firm Valuation the value of the enterprise as a whole including debt and equity (Young et al. 1999).

Damodaran (2006) distinguish the two approaches by the nature of the Cash Flows (CF) and the Discount Rate by considering that the cash flows for a firm valuation are the ones that come from the assets prior to debt payments and after reinvestment at the weighted average cost of capital and in

the equity valuation, the cash flows are the ones that came from assets after debt payments and reinvestment discounted at the cost of equity.

The main conclusion is that to perform a firm valuation, analysts should use the weighted cost of capital, and to compute equity valuation the cost of equity is the correct discount rate. Although, there are different ways to compute each valuation approach and firm valuation requires more assumptions and both should result in the same company value.

2.1.1. Discounted Cash Flow Approach

In Discounted Cash Flow (DCF) valuation models, the value of an asset is the expected cash flows discounted at a rate that reflects the risk of the flow.

This method plays a prime role amongst all the valuation methods. Fernández (2007b.) states that the DCF valuation method is the only conceptually correct, as the value of a company is explained by the shareholders' future Cash Flows.

Luehrman (1997a.) believes that DCF valuation is the best method to evaluate operating assets like a business or a plant.

The general formula to value an asset through DCF methodology is:

$$Value = \frac{CF_1}{(1+k)} + \frac{CF_2}{(1+k)^2} + \dots + \frac{CF_n + VR_n}{(1+k)^n}$$

Where:

- $VR_n = \frac{CF_n \times (1+g)}{(k-g)}$
- g = expected growth rate.
- k = risk rate.
- CF_i = Expected cash flow for the period i . $i = 1, 2 \dots n$.

The formula can be divided in two parts: the cash flow for the forecasted project life and the residual or terminal value (VR). As the forecasts are limited to a number of years, after that period it is assumed a terminal value considering a stable growth rate.

The value of the assets depends upon the Cash Flow, the Rate of Discount and its Project Life.

Fernández (2009b.) refers to 10 DCF methods for valuing companies, the most common methods stated are:

- FCFE discount at required Cost of Equity
- FCF discounted at WACC before tax
- Adjusted Present Value (APV)

2.1.1.1. ECF discounted at required Cost of Equity

In this case, as the method takes in account the Equity Cash Flow (ECF), the correct rate to use is the required return on equity (K_e) which can be estimated using the Capital Asset Pricing Model (CAPM).

2.1.1.2. FCF discounted at WACC

In this method we are evaluating the company as a whole- Debt plus Equity- so the rate of discount must reflect the required return to equity and the cost of debt.

The Free Cash Flow (FCF) is discounted at a Weighted Cost of Capital (WACC) which is calculated by weighting the cost of debt and the return on equity in accordance with the financial structure of the firm. The following formula represents the WACC computation:

$$WACC = \frac{E \times K_e + D \times K_d \times (1 - T)}{[E + D]}$$

Where D represents the Market Value of Debt, E the Market Value of Equity, K_d the Cost of Debt before Tax, K_e the Required Return on Equity and T the Tax Rate.

The formula above takes into account that the interest paid on debt is tax deductible. The interest tax shields lead to a lower WACC.

2.1.1.3. Adjusted Present Value (APV)

This method takes into account the value of the firm, it is calculated by aggregating the value of the firm as it had no debt with the “value of all financing side effects” like interest tax shield, subsidies, costs of financial distress, etc.(Luehrman 1997a.).

In the literature it is very common to find references just to the Value of the Tax Shields. If a company has debt it will have more financial costs and, consequently, the profit before tax will be lower, and so, the tax paid will be lower, which will result in saving in taxes, this is called Value of the Tax Shields (VPS).

The value of the firm without debt is obtained by discounting the FCF at unlevered rate (K_u) or at a required return on assets. If the firm has debt, the K_u is smaller than the cost of equity (K_e) because shareholders will demand a higher risk premium since the existence of debt will result in an increase of the financial risk. The rate of discount used with VTS is a very controversial subject. The formula to value a firm using APV is:

$$\begin{aligned} \text{Value of the firm} &= \text{Equity} + \text{Debt} \\ &= \text{Value of Unlevered Firm (Discounted at } K_U) \\ &+ \text{Present Value of Interest Tax Shields} \end{aligned}$$

2.1.1.4. APV, ECF or WACC

Luehrman (1997a.) considers “WACC is absolute” and suggests that APV (Adjusted Present Value) is a better tool because decompose all sources of value and permits a more accurate analysis.

Damodaran (2006) states that there is an advantage in using Free Cash Flow instead of Free Cash Flow from Equity because it is not required to take in account debt.

Damodaran (2006), states that the benefit of WACC is that it is easy to use when the leverage will change over time. Although, it is not possible to calculate WACC without the capital structure of the firm which makes WACC the correct method for companies with stable capital structure.

Fernández (2007b.) demonstrates that all methods, under consistent assumptions, will give the same result. In fact, WACC incorporates the tax benefit through adjustments in cost of debt, APV valuation of the tax benefit is calculated by discounting the savings related with existence of debt. Lastly, in a firm with no debt the ECF will be equal FCF (Fernández 2007a.).

Cooper and Nyborg (2006) conclude that with different assumptions about debt policy APV is consistent in all scenarios, while WACC and Equity cannot be used in certain situations.

In conclusion, besides all methods under the same assumptions give the same enterprise value, it is better to use WACC approach when the company financial structure does not have major changes and use APV in the opposite situation. The use of ECF is considered less interesting than WACC since it requires fewer assumptions and does not take into consideration the companies leverage.

2.1.2. Forecasting expected cash flow

In order to obtain an accurate valuation, the forecast cash flow must be equal to expected cash flow.

Fernández (2007b.) proposes 3 stages to perform cash flow projections:

A. Financial forecasts, that include:

- Income statement and balance sheet projections;
- Cash flows projections;
- Investments projections;
- Financing projections;
- Terminal value forecast, and;
- Computations of various scenarios.

B. Strategic and competitive forecasts, which include:

- Industry evolution;
- Competitive position of company, and;
- Competitive position of competitors.

C. Consistency of Cash Flow forecasts, that include:

- Financial consistency between forecasts;
- Comparison of forecasts with historic, and;
- Consistency with strategic analysis.

The Cash Flow forecast is a quantitative and qualitative process including subjective aspects in the analysis like the expected evolution of macroeconomic conditions, industry evolution, and other aspects mentioned above.

To understand the risk in a valuation it is good practice to consider a best, a worst and a base case scenario.

Ruback (2010) argues that the Cash Flow forecast can be biased in relation to the expected Cash Flow because the forecasts do not incorporate, e.g. the probability of downsizing. Therefore proposes to calculate the expected Cash Flow as the forecast plus a “missing component”. The formula is the following:

$$EPV(X) = \frac{X_L}{K} + (1 - \Lambda) \frac{(X_H - X_L)}{K}$$

In this formula, Λ represents the probability of downsizing, X_L the forecast cash flow and X_H the cash flow if downsizing take place.

Damodaran (2006) suggests conservative cash flow haircuts according to the risk of the project.

The residual value merits a special remark, for project life between 5 and 25 years, it represents between 79% and 26% of the valuation.

2.1.3 Types of cash flow

Depending from the approach Equity or Firm DCF models, it is possible to consider the two types of Cash Flows.

The Free Cash Flow to Equity (FCFE) or Equity Cash Flow is the value of equity. It can be represented by the following formula:

$$FCFE = FCFE - \text{interest payments} \times (1 - T) - \text{debt payments} + \text{new debt}$$

The Equity Cash Flow takes in account debt, which is obtained by subtracting from Free Cash Flow the debt and interest payments. The estimation of ECF takes into account the financial structure of the firm, by taking in account the payments of principal and interest as well the new debt.

FCFE represents the money available to shareholders.

The other type of cash flow is the Free Cash Flow to Firm (FCFF) or Free Cash Flow is the total value of the firm and can be represented by the following formula:

$$FCFF = \text{Earnings after Tax and before Interest (EBIT)} + \text{Depreciation} \\ - \text{Increase in Fixed Assets} - \text{Increase in Working Capital}$$

FFCF does not take into account the debt. The Free Cash Flow is obtained by the sum of operating income after tax, plus depreciation and variation in Fixed Assets and Working Capital.

FFCF is the money available to shareholders and creditors.

2.1.4. The Capital Asset Pricing Model (CAPM)

The CAPM is an important method for estimating the required return on equity. This method defines K_e as:

$$K_e = R_f + \beta_l \times (R_m - R_f)$$

Where the K_e is Required Return on Equity, R_f is the Rate of Return for Risk Free Investment, β is the Equity Beta, R_m the Expected Market Return and $R_m - R_f$ is equal to the Market Risk Premium.

The calculation of the cost of capital requires three inputs: the Risk Free Rate, the Equity Beta and the Market Risk Premium.

2.1.4.1. Risk Free Rate

A risk free investment is an investment where the expected return is equal to the real return.

According Damodaran (2008) the risk free rate has two characteristics:

- No default risk
- No reinvestment risk

The Treasury Bonds rate is normally used as a reference of the Risk Free Rate, the reason is as government can print currency so they are able to accomplish their obligations at least in local currency (Damodaran 2010).

However, there is the possibility that governments default in local currency in Damodaran (2010) opinion, one reason, among others, is the fact that the country don't have the power to print currency as, for example, the case of Euro zone countries and points out the following variables to measure the country default risk:

- Degree of indebtedness (Debt as % of GDP);
- Revenues/Inflows to government;
- Stability of revenues which lies with the degree of diversification of the economy and a tax system based on sales instead of income based;
- Political risk since the default is in essence a political decision;
- Implicit support from others entities.

German Treasury bonds are often a reference as risk free rate. In fact the German T bonds are classified AAA by rating agency Moody's the higher classification in local and foreign currency.

The rationale behind this rating (Moody's, 2012) are the following factors:

- Economic strength – very high
- Institutional strength– very high
- Government Financial strength– very high
- Susceptibility to event risk – very low

Concerning the second characteristic, it is important to choose a rate which tenor matches the investment horizon, because if timing is inferior to the timing of the project, it will be required to reinvest at a rate that is not known.

2.1.4.2. Beta

The Beta (β) measures the systematic risk of an asset relative to the market portfolio, i.e., it is a measure of the volatility of the asset return compared with the market returns.

The formula used to compute the beta is:

$$\beta = \frac{Cov(R_a + R_p)}{Var(R_p)}$$

Where:

- R_a = Return on a Asset, and;
- R_p = Return on Portfolio.

If β is zero the return on the asset is independent of the market portfolio, if beta is 1 there is a perfect correlation between the return on asset and return on portfolio.

This is a historical measure carrying three problems in its calculation (Damodaran 1999):

- Which market index to use?
- Which time period?
- Which return interval?

The market index should be representative of the market where the investor is located. One solution is to analyze the largest stockholders and chose the markets more associated with the investors.

As a historical measure it may not reflect the current market conditions. In order to mitigate this, Damodaran (1999) suggests the use of, for example:

- Modified Regression Betas, that consists in adjusting historical Betas with the current information about market capitalization, dividend yield and operating income;
- Relative risk measures as relative volatility;
- Bottom ups Betas taking in consideration the cost and financial leverage of the firm.

2.1.4.3. Market Risk Premium

Damodaran (2011) states that the determinants of the Equity Risk Premium are:

- Risk aversion;
- Economic risk;
- Information;
- Liquidity;
- Catastrophic risk;
- Irrational compared.

There are three estimation approaches to determining the market risk premium.

The first estimation approach is the historical approach. This approach consists in estimating the returns of an asset during a period and compare it with the risk free investment.

Damodaran (2011) mention that this approach is only applicable in markets with a reliable history and Fernández (2004) states that this method has inconsistent results “the market will value a share higher after a bad year than after a good year”.

The second approach is survey approach, which consists in identifying a subset of investors / managers or academics and ask them what are the expected returns. This method is, obviously, not very reliable.

The third method to estimate the risk premium is the implied premiums. This method is one of the most popular methods; it is a DCF based method that consists in applying the Gordon Shapiro formula:

$$P_0 = \frac{EPS_1}{(K_e - g)}$$

It assumes that the growth in dividends in the long term will be equal to risk free rate and the dividends yield will be the Equity Risk Premium (ERP).

This model has the advantage of not requiring historical data and, if we believe markets are efficient, will be the best approach (Damodaran 2011). Campbell and Shillem (1988) consider this method as the one with the best predictive power.

Regarding the Portuguese market risk premium, the source that was considered was the study: 'Market Risk Premium used in 5 countries in 2011: A Survey with 6014 answers' by Pablo Fernández, Javier Aguirreamalloa and Luis Corres.

2.1.6. Balance Sheet Approach

This type of valuation is based on balance sheet valuation. The balance sheet shows the situation in a certain date and therefore the valuation that is obtained is a static valuation.

It is different from methods like the CF valuation that estimates the value by taking in account expected cash flows.

Fernandez (2007b.) refers four methods: book value, adjusted book value, liquidation value and substantial value.

The liquidation value is used often in a scenario of closure (Damodaran 2006).

2.1.7. Multiples Approach

Damodaran (2006) refers to multiples as a comparable tool for firm values. They are simple estimates, based upon market experience, that allow a cross reference with the other more sophisticated methods, such as the DCF valuation.

According to Goedhart et al. (2005), although the multiples are considered the simplest valuation method there are two major problems:

- Defining a peer group;
- Defining the right multiples.

Kaplan (1996) consider that the relative valuation method relies on two assumptions, (1) the comparables companies are assumed to have expected future Cash Flow that grow at the same rate and have the same level of risk as those of the firm being valued and (2) the value of the firm is assumed to vary proportionally to the changes in the variables being measured.

Goedhart et al. (2005) defends that there are four main principles in the multiples approach, those are:

- Use peers with similar prospects for ROIC and growth;
- Use forward looking multiples;
- Use Enterprise value multiples;

- Adjust the EV/EBITDA for non operating items

According to Liu et al. to improve the multiples performance, the analysts should compare companies in the same industry.

Forward-looking earnings forecasts reflect value better than historical accounting information, accounting accruals add value-relevant information to cash flows, and profitability can be better measured when revenue is matched with expenses.

Multiples based on the residual income model, which explicitly forecasts terminal value and adjusts for risk; perform worse than simple multiples based on earnings forecasts.

Liu et al. (2000) considered that multiples based on forward earnings give a better comparable value for the firm followed by historical measures, cash flow measures and book value, the multiples related to sales are considered to give the worst comparable value about the companies.

There is a main discussion about which multiple to use to value a company. According to Liu et al. (2000) there are no specific multiples for each specific industry. Instead there are some principles to take into consideration.

On the other hand, Fernández summarized the most current multiples in 18 industries. In Building and Construction he refers P/LFCF, EV, ECF, PER and EV/EBITDA.

Analysts put up with the question of which is the ideal method to use to perform a more accurate valuation of a company, Kaplan et al. (1996) have the opinion that discounted cash flow and the multiples methods used together will give a more reliable valuation.

According to Fernández (2007b.) one of the methods used to value cement companies is by multiplying the annual production capacity by a multiple.

2.2. M&A related issues

2.2.1. Types of M&A

According to Ruback et al. (1983) takeovers can be classified into three types:

1. Merger;
2. Tender Offer;
3. Proxy Contest.

In a merger and tender offer the bidding company offers a price for the target firm that is higher to the target's market value. This is due because they expect to have some synergies related to the acquisition.

The major difference between a merger and a tender offer is to whom the offer is made to.

In a merger the bidding company negotiates with the target company's managers and in a tender offer the bidding company makes its proposal to the shareholders of the target company.

In a proxy contest a group of former managers or large shareholders propose to take control of the company, and so there are no expected synergies.

2.2.2. Synergies

When a company acquires another company, acquires with the expectation that it is going to create additional value which was not possible to create alone, that value is called synergy.

Damodaran (2005) classifies synergies into two types, operating synergies and financial synergies.

Operating synergies are those synergies that have an effect on the operations of the combined firm and the payoff results in higher expected cash flows. Operating synergies can come from different sources, such as:

1. Economies of scale;
2. Greater pricing power;
3. Combination of different functional strengths, and
4. Higher growth in new or emerging markets.

These sources can be achieved in different ways, in the first two cases it can be achieved by firms in the same business (horizontal acquisition).

Ruback et al. (1990) study showed that the operating cash flow of firms subject to mergers has increased more than those that were not involved in a merger. It is also evident that these sources of cash flows come from the increase in asset turnover and so an increase on margins.

On the other hand, Financial Synergies result in higher cash flows or/and lower discount rates. Financial synergies also can have different sources, such as:

1. Uses for excess cash.

2. Diversification.
3. Tax benefits.
4. Increase in debt capacity.

Ruback et al. (1983) have a different perspective on synergies, considering that the only sources are:

- Production or distribution costs (Economies of scales, vertical integration, more efficient production, bidder's management team, decrease on agency costs);
- Financial Motivation (avoid bankruptcy costs, increase on leverage, tax advantages);
- Market power;
- Eliminate inefficient target management.

Besides some analysts concluding that M&A destroy value for the shareholder's, Bruner (has a different view by analyzing that most studies are biased.

2.2.3. Payment methods

In M&A there are 2 payment methods, Cash and Stock (shares) and the deals are classified according to their payment method: cash only, stock only or mixed.

As per Faccio and Masulis (2004) there is no ideal method, in a successful deal, both parties had to be satisfied with the payment structure.

Amongst several, these are some of the considerations in the choice of the payment method. Cash is mainly obtained via debt, therefore highly levered companies tend to use stock in their acquisitions.

Large companies with better access to the debt markets will tend to cash finance their deals.

Firms will use stock when its stock is overvalued and use cash when their stock is undervalued.

2.3. Private company related issues

As private companies have no information that can be analyzed as public traded companies it is more difficult and subjective to make a valuation of this type of companies and so, there is a need to use information of public traded companies to value private companies.

2.3.1. Lack of Liquidity

Lack of liquidity is an issue that arises when valuing a private company.

As there is no observable information about private companies, analyst sometimes have to use the same information of comparable public companies, and because these two type of companies are

different from each other a percentage has to be discounted to the valuation made of a private held company. This percentage that reflects the different characteristics between private and public companies is called the lack of liquidity.

There are numerous views about the discount that must be applied.

According to Kopelin, j., Sarin, A. and Shapiro, C.A. (2000) there are two types of empirical studies used by analyst and investment banks:

- Restricted Stock Studies;
- Pre-IPO Discount.

In a study developed by Koeplin et all (2000), in which they critique the two empirical studies above, they compared a set of private and public company transactions and found the percentage of the difference between the two types of transactions. This study reaches to the following conclusions:

- When using earnings multiples the average private company discount is higher than when using book value multiple (between 20% and 30% when using earnings multiples);
- The average discount for Non US –companies is higher than for US Companies (between 40% and 50% for Non US-companies).

In the same study followed by Koeplin et all (2000) they also found a simple way to find the discount that must be applied to private company valuation. The simple way is using the following formula to estimate the private company discount:

$$\text{Private Company Discount} = 1 - \frac{\text{Private Company Multiple}}{\text{Public Company Multiple}}$$

Damodaran gives two different alternatives to reach the discount that must be applied that reflects private companies' illiquidity. These two approaches are:

- Approach 1: Use a discount of 20% and adjust the value for the size of the company, larger firms should have a smaller discount.
- Approach 2: Estimate the liquidity discount through a regression function of four determinants. Those determinants are the size of the firm, CF stability, assets type and the firm capacity to generate CF and apply the numbers in the formula.

As can be observable Damodaran also agrees that to smaller firms a higher discount should be applied.

Damodaran presents in approach 1 discounts only for US-companies, when using multiple based on revenues which are lower than Koeplin, J. et all (2000) found on their research for Non US-companies and using earnings multiples. For the valuation of Non US-companies and using earnings multiples the 20% rate should be adjusted to have a more credible discount.

3. Industry and Company Overview

3.1. Industry Overview

This thesis has the purpose to analyze two companies, Secil and Lafarge Betões and their industries.

Secil operates mainly in the cement and concrete industry worldwide and Lafarge Betões in the concrete industry in Portugal, it will be analyzed, both, the cement and the concrete industry.

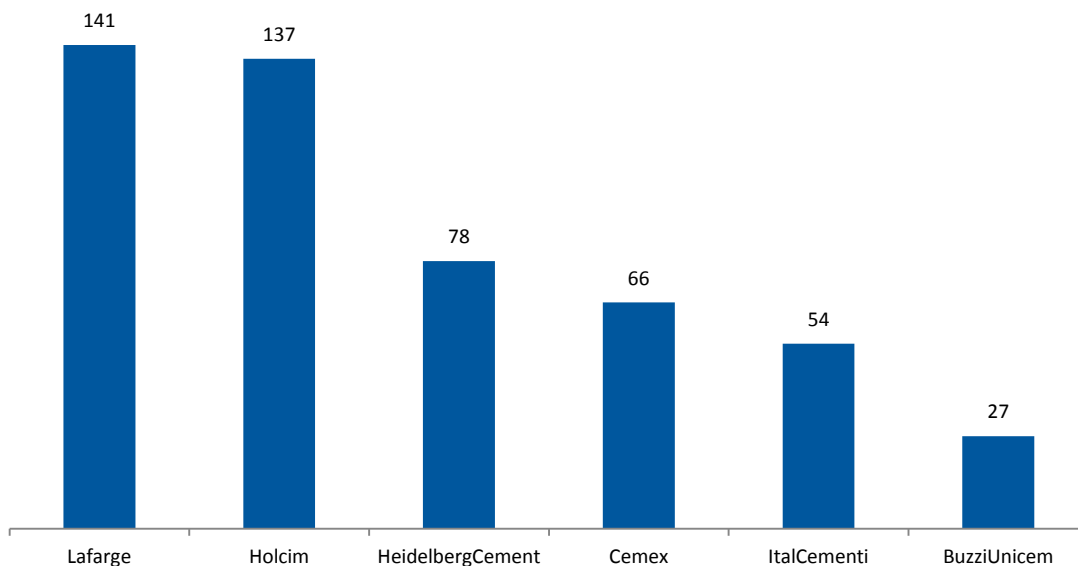
3.1.1. Cement Industry

Cement industry is very concentrated, with few international companies competing with national producers. Those international companies are Lafarge, Buzzi, Cemex, HeidelbergCement, Holcim and Votorantim.

Figure 1 reflects the concentration in the cement industry, representing the sales in million tons in 2009.

The figure shows how in 2009, the total cement consumption was 2.980 million tons, which means that the world's top producers contributed, at the time, for approximately 17% of the total consumption.

Figure 1: Largest Players in the Cement Industry Sales in 2009 (in M Tons)



Source: Global Cement Report 9th Edition

In the figure it can be noticed that Lafarge is the largest player in the world followed by Holcim. To have some idea of future strategies of the largest player in the industry, Lafarge has production facilities in every continent and its future strategy is to focus on cement production.

In 2010 the world total production of cement was 3.3 billion tons, which represents a growth of 9.2% relatively to 2009 and an average growth of 5% during the last 20 years.

According to Lafarge 2010 annual report, the cement consumption growth in the recent past was mainly justified by the emerging markets, namely, China, Brazil, India and Sub Saharan Africa.

China represents 56.1% of the worlds overall production being the world’s largest cement producer.

It is interesting to note that the cost of transporting cement by road or rail is very expensive. The only viable way to transport cement is by sea. This explains the fragmentation of the cement production, with a high number of plants around the world.

Portuguese market is very concentrated, in this very capital intensive market the 2 major players - Cimpor and Secil- have 94% market share of the cement industry as represented in figure 2.

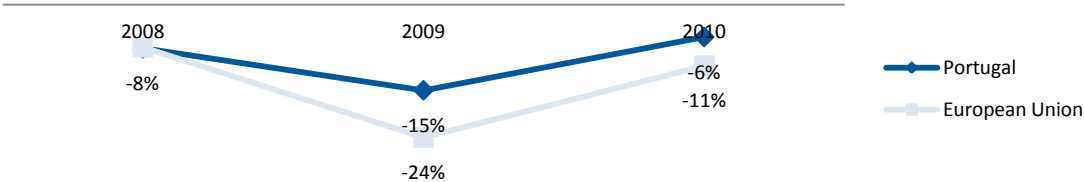
Figure 2: Portuguese cement companies’ market share



Source: Secil Annual Report 2010.

Since 2002 the cement consumption has been decreasing, being important to emphasize that the consumption in 2010 represents half of the cement consumption in 2001. Figure 3 represents this decrease on consumption from 2008 to 2010.

Figure 3: Cement Consumption Growth rates for Portugal and European Union, 2008 to 2010



Source: Secil Annual Report 2010.

As Portugal, the European Union has been suffering a significant decline on cement consumption with a decrease of 24% in 2009.

In Portugal, cement consumption was 5.803 million tons in 2010, and it is expected by ATIC information report to decrease by 15% in 2011 and 14% in 2012, because of the financial circumstances that lead to cuts on public expenses, and restrictions on credit access that influence the construction business.

In 2010, Portugal produced 8.3 billion tons of cement from which 33% was exported mainly to Africa (77%).

In Portugal, the cement production reached the 8.3 billion ton in 2010, from which 4.8 billion tons (58%) were produced by Cimpor, and 2.7 billion tons (33%) produced by Secil. These 2 players represent 91% of the total production in Portugal. .

The emergent countries represent an opportunity for the sector because of their growth rates lead by their Governments' policies on Public works.

In the case of Secil, the three international relevant markets are Lebanon, Tunisia and Angola.

Lebanon

Lebanon is an economy that is growing continuously year on year. However, according to Global Cement Report the industry forecast for the growth of this market of 5.1 billion tons is 0% for 2011 and -1% for 2012.

Tunisia

In Tunisia, one of the measures adopted in 2010 by the Tunisian Government in order to minimize the effects of the crisis was to invest heavily in the construction business. As result the cement market increased 10%

Also, the Tunisian government has announced the liberalization of the market but until now it has not yet been implemented.

The future market trends are uncertain due to 'Arab spring' after the departure of Ben Ali after 23 years of government.

However, according to the Global Cement Report the global cement market t is expected to decrease by -5.7% in 2011 and -1.2% in 2012.

Angola

Angola cement consumption reached 3.8 billion tons in 2010 and, although, the government is reducing the investments in Public works, the cement consumption is expected to grow 13.2 % in 2010 and 18.6% in 2012 according to the Global Cement report.

However, this market is not very attractive as it is dominated by the low quality but low cost Chinese cement.

3.1.2. Concrete Industry

Concrete is a material that deteriorates rapidly, it only takes one hour to have the desired quality, which means that it only can be sold in a 30<>40 km radio.

In opposite to cement that can be sold nationally, concrete is only sold locally.

As the cement, concrete is also driven by the construction business.

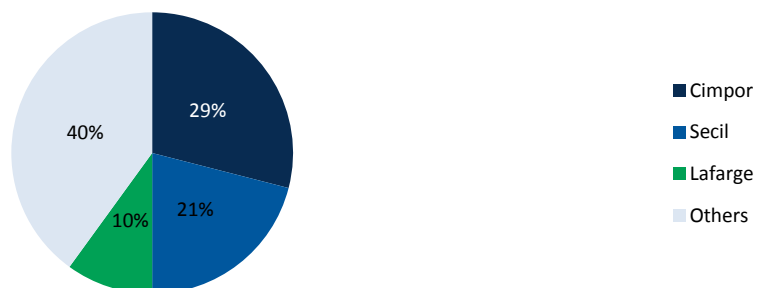
The concrete market represents 7 billion tons, having decreased 18% in 2010 as result of the declining construction business.

As Secil, most companies that produce cement are also present in the concrete market, following a vertical integration policy.

Concrete market is also a concentrated market in figure 4 bellow it can be analyzed the market structure. The 3 largest players own 67% of the market, which can be compared with the international cement market where the 2 major players have 94% of the market.

In the concrete industry in Portugal the remaining 40% of the market is very fragmented with several minor local players.

Figure 4: Concrete market shares in 2009 (adapted from AdC)



Source: AdC report on Lafarge acquisition by Secil.

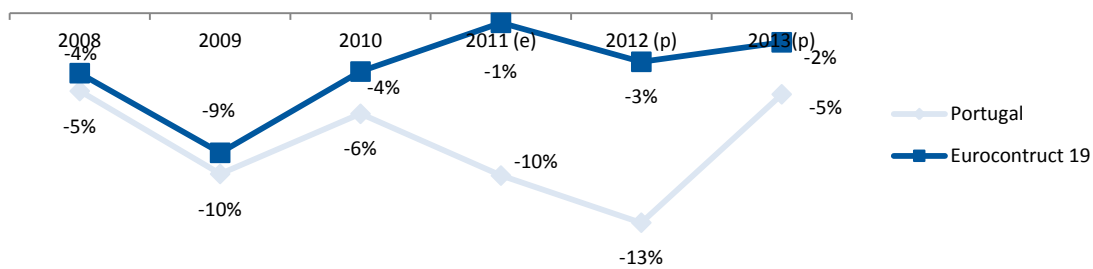
3.1.3. Market dynamics and trends

As said before, the cement and concrete sector face severe difficulties due to the economic and financial crisis.

According to *Euroconstruct 2011* the construction output are expected to decline 13% in 2012 and 5% in 2013. The European market is estimated to decrease only -3% in 2012 and -2% in 2013.

Figure 5 compares the expected results for the construction business for Portugal and *Euroconstruct 19* countries.

Figure 5: Construction sector growth rates



Source: *Euroconstruct 2011*.

According to *Euroconstruct 2011* it is expected that the emergent markets will continue to lead the Global Market Growth due to their demographics and residential infrastructure demand growth in opposite to the European market, which includes Portugal, which is expected to continue the declining tendency.

According with Secil reports, the main revenue drivers in the cement and concrete industry are:

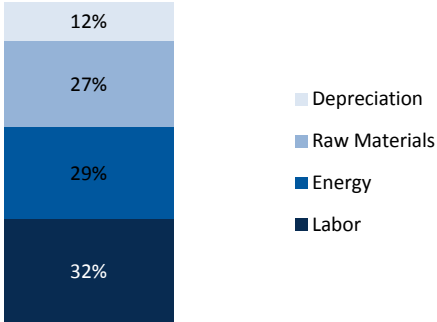
- **Residential Construction**, which is driven by the demographic, standard of living, interest rates and financing conditions;
- **Public Works**, that are driven by the public investments;
- **Other Constructions (non residential)**, driven by the economic activity and investments, such as touristic and commercial equipments, plants, etc.

The economic and financial crisis that triggered in 2008 also led to:

- More control in transportation costs;
- More preservation of the quality of the products;
- Increase on the production of more ecological and efficient products;
- Improved sustainability of the products.

These trends in the cement market led to an increase on production and logistic costs which structure is as presented in figure 6.

Figure 6: Cement cost composition (adapted from Lafarge Annual Report)



Source: Lafarge Annual Report 2010.

As showed in figure 6, energy represents 29% of total cement production costs. The energy cost is a very sensible topic in this industry and, with the increased oil prices, it is growing.

It is also an industry capital intensive with the depreciation of the investment representing 12% of the total cost.

3.1.4. Industry M&A historical

The cement industry was very fragmented. In the 70’s, with the beginning of the globalization process, started a tendency to constitute big groups in Europe.

In the 80’s these big companies had a tendency to move to America where the growth rates, at the time, were appealing.

In the early 90’s, after the fall of the Berlin wall there was an opening to foreign western investment in Eastern Europe that become the investment “hot spot”, a trend that was followed by the cement producers.

Currently, the growth is in the emergent markets like China, India, Brazil and South Africa.

As the cement market is a local market, the international trade represents only 5%. In order to sustain a long-run growth, the companies have to acquire companies in the new markets or construct new facilities.

The cement demand depends upon demographic growth and urbanization and therefore the big companies follow these international trends trying to implement new facilities in the fast growing emerging markets.

In the recent years, due to the financial crisis, the number of acquisitions was reduced. Anyway, there were some important M&A deals:

- **(2010)** Lafarge sold the Cimpor stake to Votorantim in exchange for the cement operations in Brazil;
- **(2010)** HeidelbergCement acquired the remaining 50% of Pioneer North Queensland, Australia, 3 cement plants in the Democratic Republic of Congo and the majority of CJSC Construction Materials, Russia
- **(2009)** Lafarge acquired Larson&Toubro Group, Leader in ready mix concrete in India;
- **(2009)** Holcim bought Cement Australia;
- **(2008)** Lafarge acquired Orascom cement, the cement leader in Middle East and Asia.

3.2. Company Profiles

3.2.1. Secil – Companhia Geral de Cal e Cimento, S.A.

Founded in 1930, Secil – Companhia Geral de Cal e Cimento is the result of a merger between Secil and Companhia Geral de Cal e Cimento.

Secil is a participation of SEMAPA, a company quoted in the Euronext Lisboa that operates in three different markets:

- **Cement and Buildings Materials** through Secil – Companhia Geral de Cal e Cimento, S.A.;
- **Paper and Pulp** through Portucel – Empresa Produtora de Papel e Pasta Papel, S.A.;
- **Environment** through ETSA – Empresa de Transformação de Subprodutos Animais, S.A.

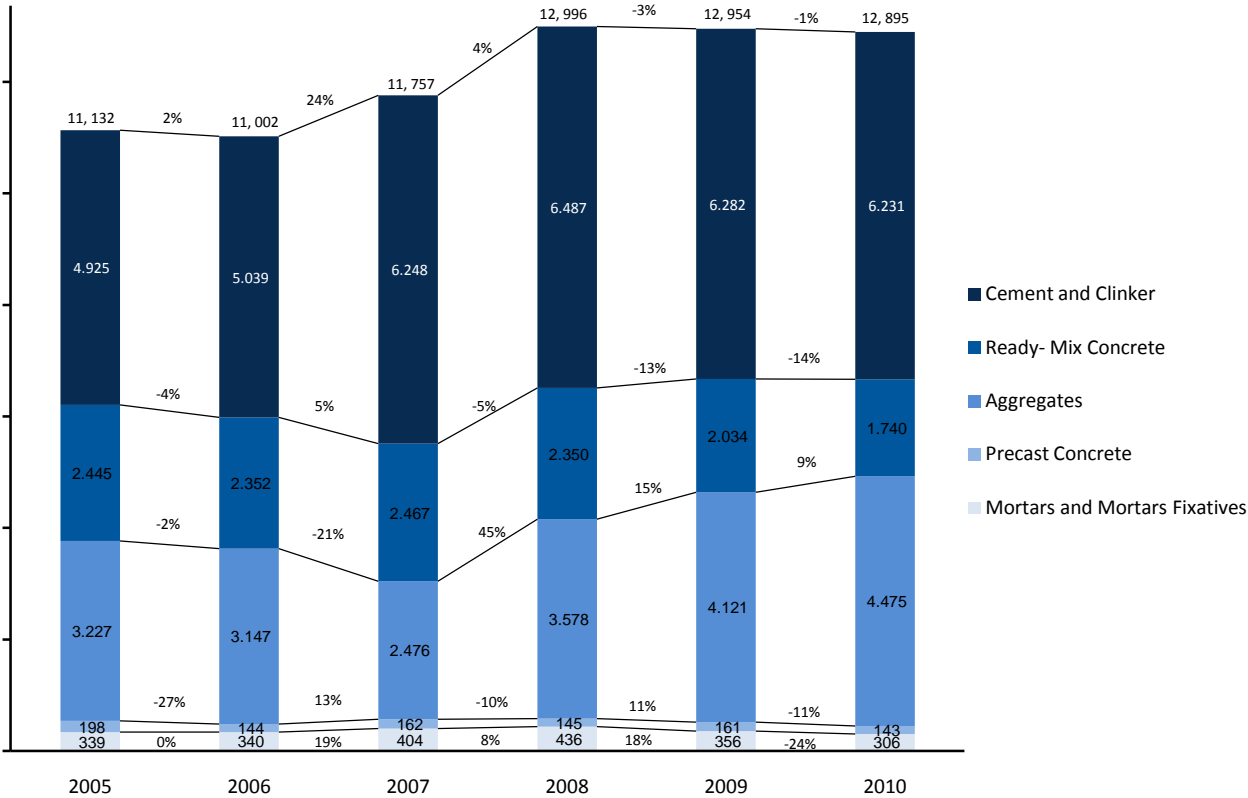
SEMAPA owns 51% of Secil share of capital jointly with CRH plc an Irish group that also operates in the production of building materials, which includes cement and concrete. After a legal dispute, SEMAPA is currently acquiring the CRH share.

Secil is the second major player in the Portuguese Cement Market, with annual revenues of €536m and a cement production capacity of approximately 4,0 million tons.

Although Secil core business is cement, it competes in other markets, such as, concrete, precast concrete, clinker, aggregates, mortars and binders.

The graphic below represents the evolution of sales in quantities by product from 2005 to 2010.

Figure 7: Sales (in 1000 t) by product



Source: Company's data.

According to the company data, Cement & Clinker and Aggregates represent more than 80% of the company's production.

As can be analyzed in figure 7, since 2008, all products produced by the company have shown a tendency to decrease sales quantities with the exception of the ready- mix concrete that have shown a growth trend during that period.

Cement and clinker consumption decrease is due to the grey cement sales that have shown a bad performance in the recent years, mainly due to the financial crisis that has affected the construction business.

The production of concrete is the third source of revenues for Secil that has 43 concrete production facilities covering almost all the Portuguese territory and annual revenues of €120m in 2010.

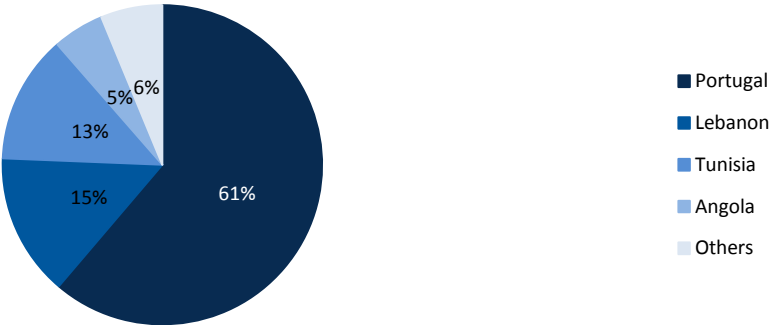
¹ Excluding Artificial and Hydraulic Lime.

Secil competes in five different countries, Portugal, Tunisia, Lebanon, Angola and Cape Verde, each country have shown different trends in the latter years.

Portugal is in a financial crisis, Tunisia and Lebanon are growing as result of the ‘Arab spring’ and Angola, despite the economic growth, the cement market is not attractive due to the lack of investment in public works by the government and the fact that the Angola only buys Chinese cement.

As represented in figure 8 bellow, Portugal contributes for 61% of Revenues followed by Lebanon that contributes for 15%.

Figure 8: Secil revenues (% per country)



Source: Company data

Although, Portugal represents 61% of Secil total revenues, since 2002 it has been following a decreasing tendency. In 2010 the EBITDA of the Portuguese Business Unit decreased 11%, mainly due to:

- Decrease on sales for the internal market;
- Increase on energy costs.

According to the company data, Lebanon represents 15% of Secil total revenues. This is mainly justified by its economic growth of 8% in 2010, 3 points above the world economy for the same year.

The company entered in the Lebanon market in 2002 through the acquisition of 21.2% of CDS – Cement de Sibline.

In what concerns to the construction business and to the cement consumption, Lebanon showed very positive trends. The construction business continues to grow and that is reflected on the internal cement consumption that has a growth rate of 7%.

Although, there was a negative impact from the increase on fuel prices, Lebanon business unit performance was considered very positive with the 8% growth on business volume and 6% growth on EBITDA.

Tunisia, that has contributed with 13% of Secil revenues, is a business unit that, as Lebanon, had a positive performance with a growth of 3% on business volume and 14% on EBITDA.

Similarly to what happened in Lebanon, in 2000, Secil entered into the Tunisian market through the acquisition of the “Société des Ciments de Gabès”.

Tunisia is expected to grow in the near future due to the anti-crisis government incentives to public works and construction business, which resulted on a cement and artificial lime consumption of 7.2 Million tons in 2010, an increase of 9.7% compared with 2009.

In what concerns to Angola, this business units is not performing so well representing only 5.0%% of the company revenues.

In the same year that the company acquired the Tunisian Business Unit, it has also acquired 70% of the Angola Business Unit.

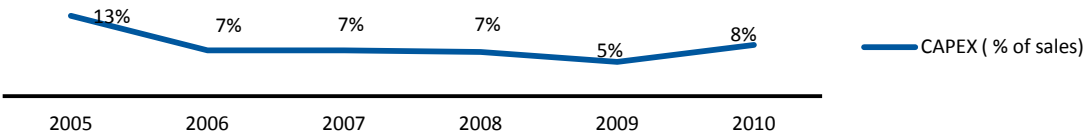
Angola is an emerging market that is growing very fast, being expected to grow 5.9% in the coming years. However, the construction sector is falling due to the reduction of public works.

Furthermore, the Government has preferred to import the low quality but cheaper cement from China rather than the local production.

It is important to mention that Secil also operates in Cape Verde, this business unit is not a significant for Secil, representing only 1% of the company revenues, but the economy is growing 4.1 %/year so it can be seen as a growing opportunity in the future.

It is important to analyze the investments made by the company in the latter years. Figure 9 represents those investments as a percentage of sales.

Figure 9: Secil CAPEX as a % of sales during from 2005 to 2010



Source: Secil Annual Reports 2005 – 2010.

During the period from 2006 to 2008 Secil investment has declined to 7% of sales every year, a value that decreased 2 points in 2009.

In 2010, mainly with operational activities, the trend increased to 8% of sales. This trend of growing the investment effort is being confirmed with the recent interest of SEMAPA in acquiring CIMPOR.

3.2.2. Lafarge Betões, S.A.

Lafarge is one of the biggest construction companies in the world, with their headquarters established in France.

Since 2009, Lafarge followed a divestment strategy that has lead to the sale of Lafarge Betões, a Portuguese company owned by the group.

Founded in 1973, Lafarge Betões operations are based in the production and supply of concrete, mortars and aggregates owning 26 concrete plants and 5 aggregates facilities in Portugal.

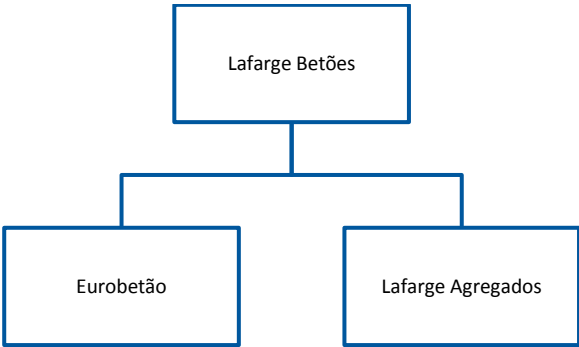
Lafarge Betões only operates in Portugal and had a business volume of € 56 million in 2010.

In 2010, due to the current economic environment that has heavily affected the construction business; the volume of Lafarge has declined by 20%.

Lafarge Betões is composed by a simple structure, formed by three companies that are not fully consolidates its accounts.

As shown in figure 10 Lafarge Betões is composed by Lafarge Betões the mother company and also by Eurobetão and Lafarge Agregados.

Figure 10: Lafarge Betões Composition (Adapted from Lafarge Betões Annual Report 2010)



Source: Lafarge Annual Report 2010.

Lafarge Betões exerts a commercial activity, i.e., produces and sells Ready-mixed, Eurobetão owns some assets and lease those assets to Lafarge Concrete, Aggregates and Lafarge Agregados that also pursues business producing and exploring gravel.

3.3. Strategic Rationale for the Merger

In December 2010, Secil signed the contract to acquire Lafarge Betões, a company valued in € 65 million.

Lafarge Betões plays in the concrete and aggregates industry.

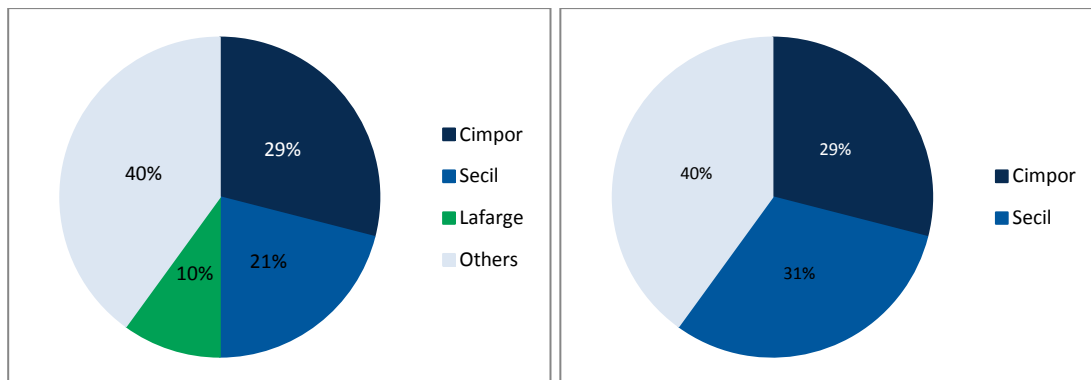
There are 3 reasons that justify the strategic rationale for the acquisition of Lafarge by Secil. Those are:

- Market Power;
- Vertical Integration;
- Horizontal Integration.

Market Power

Basically and as per picture bellow, with this acquisition Secil gains a large part of the concrete market in Portugal:

Figure 11: Concrete market shares comparison in 2009 (adapted from AdC)



Source: AdC report on Lafarge Betões acquisition by Secil.

Before the acquisition, Cimpor was the market leader of the concrete market with 29% of the market, after the acquisition Secil is now the leader with 31% of the market.

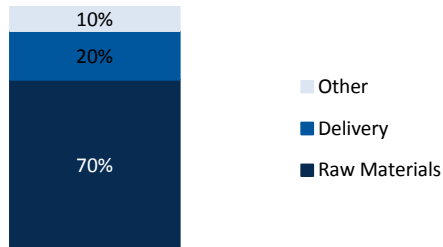
Also, with the acquisition, Secil is now the owner of more 26 concrete plants adding to the current 43 and more 5 aggregates plants.

This acquisition gave Secil the market strength to compete with Cimpor.

Vertical Integration

Concrete costs are the following:

Figure 12: Concrete Cost Composition



Source: Lafarge Annual Report 2010.

The raw materials of concrete are composed with cement and aggregates, the target company can benefit from the fact that Secil already produces cement and reduce costs.

Horizontal Integration

As already stated, one of the markets where Secil operates, as Lafarge Betões does, is the concrete market.

The fact that both, Secil and Lafarge, operate in the same market could lead to economies of scale or economies of scope, reducing the production costs and having higher margins.

4. Valuation

The main objective of this thesis is to analyze and evaluate the acquisition of Lafarge Betões by Secil, as referred before this process is composed of 2 phases.

The first phase will value Secil and Lafarge Betões standalone and the second phase will value Secil after the acquisition of Lafarge Betões including the synergies generated by the acquisition.

The value of the combined firm will be compared with the sum of the value of the two entities. The added value of the synergies will reflect the strategic reasons behind this acquisition.

Relatively to the historical data used to analyze both companies and perform the standalone valuation, only the euro currency was considered. Although, Secil revenues could be affected by the currency risk, Secil has a policy of covering the currency exposure via the hedging inside the Group. When this is not possible, Secil establishes options contracts for the currency risk.

The following historical data was considered for the Secil and Lafarge Betões valuation:

- For the Secil historical analysis it was considered data from 2007 to 2010;
- For the Lafarge historical analysis it was considered data from 2009 to 2010.

Although for Secil only the first scenario was analyzed for both firms, 3 scenarios were taken into consideration:

- The base case scenario;
- The optimistic scenario;
- The pessimistic scenario.

For all these scenarios it was assumed a project life of 5 years explicit period. A perpetuity was then included as VR.

The valuation method that will be used is the WACC - based DCF valuation, because it was the one that is considered by analyst the right one to values private companies Secil and Lafarge Betões.

4.1. Secil Standalone Valuation

4.1.1. Cash Flow

4.1.1.1. Revenue Growth

In the base case scenario, it was assumed that the Portuguese revenues will follow the construction business trend as forecasted by *Euroconstruct 2011* for 2011 to 2013.

As Damodaran (2009) states, in the valuation of a company that competes in a cyclical market, like the cement and concrete market, that follow the economic fluctuations, it is important to incorporate in the analysis the impact of growing and recession periods.

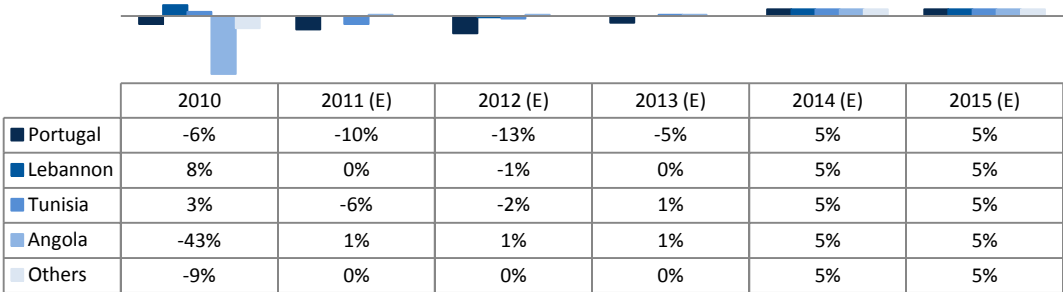
For that purpose, it was considered that 2011 – 2013, as predicted by construction and industry forecast, will be recession years, but 2014 – 2015 will be growth years.

The following growth rates were considered:

- The *Euroconstruct 2011* until 2013;
- As no further data is available in the *Euroconstruct 2011*, from 2014 to 2015 explicit period, it was considered a growth of 5% for Portugal and for all the other countries where Secil operates. This 5% forecast is in line with the last 20 years world consumption growth as per the Lafarge Annual Report. This assumption was considered in the three scenarios.

Figure 13 below briefly represents the summary of the growth rates per country for each year in the base case scenario.

Figure 13: Revenues growth rate, per country – The base case scenario



Source: Euroconstruct 2011 and forecasts of this study

In the base case scenario it was assumed a Terminal Value after 2015, for both emerging and the Portuguese markets, considering a flat growth of 3%/year.

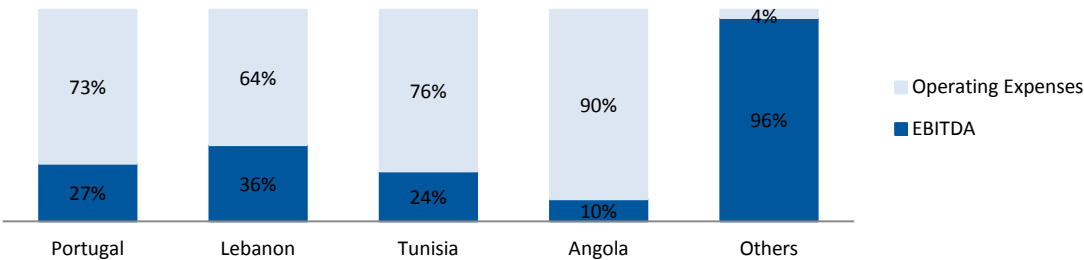
4.1.1.2. Operating Costs

Secil Annual Report does not disclose the cost items in the Income Statement, it only discriminates the total EBITDA per country, for that reason it was only possible to find the total operating costs for each region where Secil operates.

It was not possible to understand in the cost structure the percentage of overheads in the total cost or the percentage of variable versus fixed costs.

For the computation of the operating margin it was considered the weighted average of the operating costs on revenues for each country. Figure 14 represents the operating percentage on sales by country average used to forecast the EBITDA.

Figure 14: Operating Expenses per country



Source: Secil Annual Report 2010.

In appendix 5 there is the Secil base case income statement forecasted for analysis.

4.1.1.3. Dividends, CAPEX, Depreciation and Minority Interest

This valuation assumes a dividend payment rate similar to the average payment rate of the last two years. This corresponds to a payout ratio of 57% of the consolidated net profit.

The last four years were characterized by operational investment varying between 5.0% and 8.0% of Sales. We have assumed a weight of 7% on sales, the average of the available historical data.

As referred previously, the realized investment will only be only operational, so it is assumed that only the rubric “Property, Plant and Equipment” will be affected.

For the depreciation it was assumed a flat rate of 10% for the all 5 year period. This assumption is in line with the average rate until 2009 (2010 with a 15% rate was not a normal year and therefore it was not considered).

In 2010 the minority interests represented 16% of the Net Profit. In this analysis it was assumed that these interests will remain flat and that their respective dividends will be distributed in the year they were generated.

4.1.1.4. Net Working Capital and Cash

The Net Working Capital is directly associated with the level of activity of the firm. As no major changes in the industry framework are expected, it was assumed that for all main items such as trade debtors, trade creditors and inventories, the respective percentage on sales will follow the trends of the historical data (15% for the inventories, 20% for the trade receivables and 6% for the trade payables).

The cash will remain unchanged until 2015 at the 2010 level (appendix 4 for Secil base case balance sheet).

4.1.1.5. Financial Leverage

As presented in appendix 8 to calculate the market value of the debt, we have followed the Damodaran approach of considering the Book Value of the debt equivalent to the face value of a coupon bond and the market value the present value discounted at the net cost of debt of the interest payments during the weighted average maturity of the debt, in this case assumed 5 years.

The Book Value of the Debt used in this calculation included the Interest-bearing loans and borrowings, short and long term, plus leases minus cash, i.e., the Net Debt.

The Market value of the Debt that was calculated was € 124 million in 2010 versus the Book Value of the Debt of € 79 million values that will significantly decrease across the 5 year period since debt maturity is 5 years (appendix 8 for the rest predicted period).

To calculate the Equity Market Value, it was followed the suggestion from Damodaran of using a multiple based upon quoted firms as represented in appendix 9.

Between the several multiples described in the *Ernest & Young 'Cement' - ing growth*: the EV/EBITDA, ROCE (%) and the EV/tonne, our choice was the EV/EBITDA because it focus the valuation on the financial results and not the product output as the EV/Tonne and also to allow the Secil with Lafarge Betões comparison in the merged case (ratio is based upon tonnes of cement that is not produced by Lafarge Betões).

We have assumed the European average of 7.8 for the EV/EBITDA multiple to calculate the Equity Market Value. The value that was calculated for the Enterprise Value was € 1 billion and thus an Equity Market value (EV-market Value of Debt) of € 876 million for 2010 as presented in appendix 9, where can be consulted for the 5 year forecasted period.

4.2. Lafarge Betões Stand alone valuation

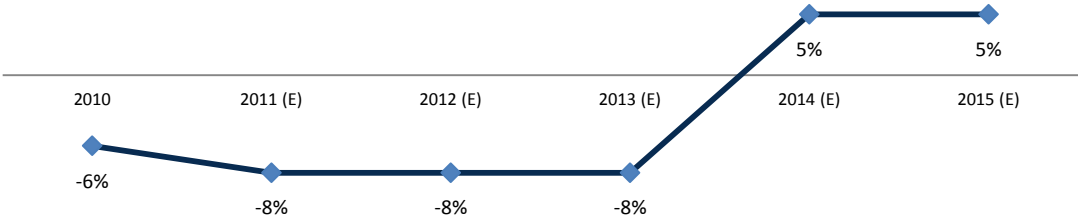
4.2.1. Cash Flow

4.2.1.1. Revenue Growth

As mentioned before, Lafarge Betões only operates in the concrete and aggregates markets that, as they depend of the same factors, are expected to follow the same tendencies of the cement industry.

For the optimistic scenario it was consider the forecast of CEMBUREAU for 2011, in which it is considered a decrease of 8% in the construction business. This decrease will be assumed for the explicit period of 2011 – 2013 in Portugal. Figure 15 represents revenues growth rates

Figure 15: Revenues growth rate – The optimistic scenario

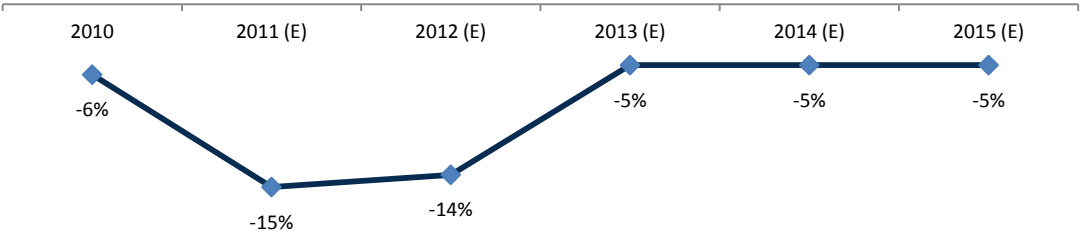


Source: Cembureau 2011 and forecasts of this study

For the pessimistic scenario is more pessimistic it was considered, for Portugal the ATIC forecast from 2011 to 2012.

See figure 16 below represents growth rates, only for Portugal, for the pessimistic scenario considered for Lafarge Betões.

Figure 16: Revenues growth rate – The pessimistic scenario



Source: ATIC and Global Cement Report (9th edition) and forecasts of this study.

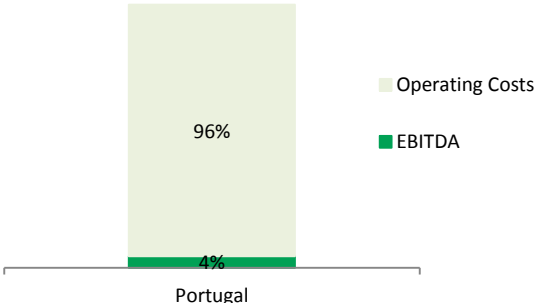
For the Base Case the growth rates that were assumed are similar to the growth rates assumed for Secil in Portugal, the only market where Lafarge Betões operates.

In all the 3 scenarios – Base Case, Optimistic and Pessimistic - it was assumed a Terminal Value after 2015, for the Portuguese market, considering a flat growth of 3%/year, as for Secil.

4.2.1.2. Operating Costs

The cost structure assumed for the future periods will also be similar to the 2010 cost structure, which is represented in figure 17.

Figure 17: % on revenues for Lafarge Betões



4.2.1.3. Dividends, CAPEX and Depreciation

Lafarge Betões does not distribute dividends as shown in Lafarge Betões historical data; therefore it was assumed that this policy will remain in the future.

Bearing in mind the market decline, in the case of Lafarge Betões, it was assumed that, in order to avoid increasing the Capital Employed in the business, the CAPEX equals depreciation in the forecast.

4.2.1.4. Net Working Capital

For Lafarge Betões it was assumed that for all main items such as trade debtors, trade creditors and inventories, the respective percentage on sales will follow the trends of the 2010 data since there was a huge variation between 2009 and 2010 (1.1% for the inventories, 29.6% for the trade receivables and 25.1% for the trade payables).

The cash will also remain unchanged until 2015 at the 2010 level (appendix 12 for Lafarge Betões base case balance sheet).

4.2.1.4. Financial Structure

According to the available financial reports, Lafarge Betões has no debt. In this analysis it is assumed that it will continue to operate without debt as in the past.

4.3. The Weighted Average Cost of Capital (WACC)

Secil and Lafarge Betões are not quoted in the stock market and therefore it was required to estimate the Market Value of the Debt and of the Equity in order to calculate the WACC.

Also, the estimation of the betas and the cost of debt, required for the estimation of the WACC, have some special features as referred by Damodaran².

The formula used to estimate the WACC, was the Damodaran approach:

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

Where:

$$R_e = R_f + \beta_l \times (R_m - R_f)$$

As advised for the majority of the literature, if the capital structure changes year after, in the case of Secil this was taken in consideration when computing WACC having a different WACC for each year forecasted.

4.3.1. Risk-free rate (R_f)

In line with literature review, the risk free rate was assumed equal to the yield of the German government bonds of the last 10 years issued in 2010 of 2.95%.

² Damodaran – Valuing Private Firms

4.3.3. Betas (levered and unlevered)

As Secil and Lafarge are not in the stock market, it is not possible to obtain the betas – levered and unlevered – by calculating the regression of the company stocks against market returns.

Following one of the approaches suggest by Damodaran³, it was considered, for both Secil and Lafarge Betões, the unlevered beta estimated by INSEAD (2005) for the European Cement/Aggregates companies of 0.72, as presented in appendix 2.

In order to calculate the levered beta it was used the target capital structure (debt to equity ratio) as per formula below:

$$\beta_l = \beta_u \times \left[1 + \frac{D}{E} \times (1 - T) \right]$$

In the case of Lafarge Betões, that has no Debt, the value of the beta levered is equal to the 0.72 of the beta unlevered.

In the case of Secil the calculated beta levered is 0.84, for 2010, and varies between 0.79 and 0.81 for the rest of the explicit period as computed in appendix 6.

4.3.4. Market risk premium

In what concerns to the market risk premium it was assumed for both firms the average values surveyed by Fernández (2011) for Portugal of 6. 5%, as presented in appendix 3.

4.3.5. Cost of debt

The Book Interest Rate (Interest Net Expenses/Book Net Value of Debt) paid by Secil was 7.02% in 2010.

Damodaran⁴ argues that this is not a good indicator because includes debt issued in the past and therefore it does not reflect the real cost of debt. The recommended approach, similar to the traded firms, is to attribute a rating to the company.

This approach consist of estimating the “synthetic rating” using the interest coverage ratio (EBIT/Interest Expenses) and use the default spreads added on top of the Portuguese treasury bond rates. In the case of Secil this “synthetic rating” is 6.15%.

According to Damodaran, the value obtained when calculating the default spreads can be adjusted to reflect the market conditions. My assumption was to add 1% for two main reasons:

³ Domadoran, A. – Valuing Private Firms

⁴ Domadoran, A. – Valuing Private Firms

- The book interest rate is higher than the “synthetic rating” (7.02% vs. 6.15 %)
- Recently Semapa traded bonds at 6.5%.

The end result is a Cost of debt of 7.15% reflecting the 5% of the Portuguese Treasury Bonds plus 0.65% of spread for a AAA company and plus the 1% assumed to reflect the currently depressed market conditions, as represented in appendix 1.

This calculation only applied to Secil. Lafarge Betões has no Debt.

4.3.6. Income Taxes

For both companies, the Income Tax rate that was considered was 27.5% as predicted for 2010 in the KPMG 2010 report.

4.4. Valuation and sensitivity results

Based upon the assumptions described above, according to this calculation, the value of the two companies is the following represented in table 1.

Table 1: Secil and Lafarge Betões standalone valuation results summary

(€m)	PV 2011 – 15	PV Terminal Value	PV without Lack of Liquidity	Lack of liquidity (30%)	PV Total with lack of Liquidity
Secil	361	1.225	1.587	476	1.111
Lafarge Betões	8	25	33	-	33

According to table 1 to the value of Secil was taken 30% of lack of liquidity, a value that was not considered for Lafarge Betões due to the capital structure (all equity company), and so as this percentage according to Damodaran, A.⁵ depends on the assets liquidity .

The 30% discount considered for Secil was based on the conclusion of Koeplin, J. et al (2000) where they found out that the average discount when earnings multiples is between 20% to 30%, and that for Non US-companies the discount is higher than for US-companies it was used the highest percentage when using earnings multiples.

As we will see further below, the Valuation of the Merged company will be different from this arithmetic total due to the impact of the different WACCs.

For the acquired company, Lafarge Betões, an optimistic and a pessimistic scenario were developed.

⁵ Domadoran, A. – Private Company Valuation Slides

To develop these two scenarios for the growth of the revenues were used (see figures 15 and 16), this two scenarios lead to a value of € 27 million for the pessimistic scenario and € 35 million m for the optimistic scenario (see appendixes 16 and 17 for both scenarios).

Also for the acquired company, it was important to perform a sensitivity analysis.

As shown in appendix 19, to perform this sensitivity analysis, the WACC and the growth rate embedded in the terminal value suffered a variation that for WACC was +/- 1% and for the growth rate of the terminal value was between 3% and 5%.

This analysis leads to a rage value between € 22 million and € 85 million.

In the most optimistic scenario, if the growth rate of the terminal value was 5% as per 2014 and 2015 revenues growth and the cost of capital was 1% smaller, the value of Lafarge Betões could reach € 85 million, more than the double of the base case valuation. As we will see, the valuation conducted by Secil was closer to the optimistic scenario.

5. Valuation of the Merged Company

5.1 Valuation of the Merged Company without synergies

To value the merged company without synergies, the Income Statement, the Balance Sheet and the Cash Flow Statement of the Merged Company were considered equal to the sum of Secil and Lafarge Betões.

The year on year Free Cash Flow to the firm of the merged company is equal to sum of the two cash flows.

However, as the companies have different capital structures, the WACC of the merged company is different from WACC of Secil and Lafarge Betões (for values see appendixes 10, 14 and 20).

This leads that the total value of the merged company of € 1.7 billion and accounting with 30% of lack of liquidity the final value of the company is €1.18 billion (appendix 20).

5.2. Description of the Synergies

The synergies that were assumed in the analysis were the following:

5.2.1. Cost synergy on production

The combination of Secil and Lafarge Betões will have 70 factories. It is reasonable to assume, moreover in a depressed market, that 10% of the factories (7 units) are overlaps that can be closed and

that efficiency improvements can be introduced in the remaining units to produce closer to their maximum capacity to compensate.

5.2.2. Margin Synergy from dominant position

In the fragmented concrete market, the Merged Company with 31% market share (before Secil 21% and Lafarge Betões 10%) will lead the market that was previously dominated by Cimpor with 29%.

More, the 2 major players will have together 60% of the market.

After the recessionary years until 2013, where the impact of this synergy is assumed to only hold current margins undermined by the fierce competition of the minor players, from 2014 onwards it is assumed that this market consolidation, enhanced also by the closure of the tail-end, will lead to an increase of the margin (EBITDA/Revenues) of 0.5%, from 6.9% to 7.4%.

5.2.3. Cost of Restructuring

It was considered a cost of € 1million in 2011 for redundancies and other integration and restructuring costs.

The main cost is related with the redundancy cost of the closure of 7 production units but other costs such as the related with the motivation impact of merging 2 company cultures were also taken in consideration.

The appendix 22 shows a detailed split of the impact of the above described synergies.

5.3. Valuation of the Merged Company with synergies

According to appendix 20 the value of the merged company is € 1.18 billion, (with lack of liquidity) including a total of synergies of € 27 million over the value of the merged company with synergies of € 1.21 billion (appendix 21).

6. The Acquisition

The value that Secil paid for Lafarge Betões of €65m compares with the following values that have been achieved with this valuation:

	Value (€m)
Lafarge Betões standalone	33
Synergies	27
Total	60

As such we can conclude the following:

- Lafarge Betões sold a business with a standalone value of € 33 million, in a non-strategic market where they had no possibility and no motivation to win, by € 65 million. From a Lafarge Betões perspective it was indeed an attractive deal.
- Secil paid € 65 million for a business that, according to this valuation, had a value of € 60 million including € 27 million of synergies. This means that, compared with this analysis and excluding the hypothesis of having overpaid, they had a more positive view of the potential value of this business.

To forecast in this uncertain period is almost a question of 'faith', the 'faith' of this analysis was that the market conditions will continue the current negative trend until 2013 and that in 2014 the economic environment will improve and the growth rates will be positive. In the case of the valuation of Lafarge Betões, the 'faith' in a positive Cash Flow in 2015 was critical to attribute a positive value of € 33 million to the standalone business. The extrapolation of the negative results until 2013, without assuming a turnaround in 2014 and then throughout the perpetuity, would have lead to a negative value.

It was also Secil that saw synergies in this acquisition, saw an opportunity to win with the merged company.

Secil saw the opportunity to, first defend until 2013 and then, after 2014, to improve its operating margin by becoming the market leader with 31% market share, now followed by the former leader, Cimpor with 29%.

It is believe that in 2014 the economy will stabilize, the construction / cement / concrete business will recover, the business will be profitable and there are relevant synergies to capture, that lead to the investment.

It was the long term perspective that leads to the decision of continuing to invest in a capital intensive business, despite the fact, that it is currently going through an adverse market environment.

After 2014, with improved cost efficiency, Secil will become better positioned to benefit from the market opportunities (e.g. the expected closure of tail-end firms) and improve its market position and profitability.

Returning to the 'Abstract' where it was stated that: *'It is this investment effort in the Portuguese industry, the optimistic believe of the "captains of industry", that has attracted my curiosity and justified the choice of this subject'*, we may say now that, compared with this analysis, the intangible faith of this 'second to none' player was worth more than the € 5million of difference to the value that Secil paid.

Secil estimated more future growth, more synergies and more value in dominating this market, etc. than we did. Surely, the deal was also attractive from the perspective of these 'captains of the industry'.

It will be interesting to revisit this acquisition in 2015 and complete a Post Project Review to understand the real delivered added value of the € 65 million that Secil paid in Cash to acquire the ownership of Lafarge Betões.

7. Appendixes

Appendix 1: Ratings, interest coverage ratios and default spreads

Interest Coverage		Rating	Spread
>	<=		
	0,19	D	12,00%
0,2	0,64	C	10,50%
0,65	0,79	CC	9,50%
0,8	1,249	CCC	8,75%
1,25	1,49	B-	6,75%
1,5	1,749	B	6,00%
1,75	1,99	B+	5,50%
2	2,249	BB	4,75%
2,25	2,49	BB+	3,75%
2,5	2,99	BBB	2,50%
3	4,249	A-	1,65%
4,25	5,49	A	1,40%
5,5	6,49	A+	1,30%
6,5	8,49	AA	1,15%
8,5		AAA	0,65%

Source: Damodaran website

Appendix 2: Betas - levered and unlevered, by sector

Industry Group	Number of firms	Average Beta	Market D/E Ratio	Unlevered Beta	Tax Rate
Bldg Prod-Cement/Aggreg	32	0,99	50,97%	0,72	27,08%

Source: INSEAD, 2005

Appendix 3: Market Risk Premium

	Average			Median		
	Professors	Analyst	Managers	Professors	Analyst	Managers
Portugal	8	6	7,2	6,9	6,1	6,5

Source: Market Risk Premium used in 5 countries in 2011: A survey with 6.041 answers, Fernandez,Corres e Aguirreamalloa.

Appendix 4: Secil base case balance sheet

Consolidated Balance Sheet									
	Historical Balance Sheet				Forecast Balance Sheet				
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Assets									
Non - Current Assets									
Property, Plant and Equipment	441.006.904	436.334.260	414.632.289	411.388.680	405.095.760	396.650.639	388.218.361	382.074.172	378.061.505
Investment Properties	347.910	331.914	1.364.887	1.345.533	1.210.980	1.089.882	980.894	882.804	794.524
Goodwill	126.901.593	124.152.356	123.013.958	122.439.292	110.195.363	99.175.827	89.258.244	80.332.419	72.299.178
Intangible Assets	106.306	40.031.139	1.985.119	5.844.955	5.260.460	4.734.414	4.260.972	3.834.875	3.451.387
Other Non-Current Assets	25.869.193	24.708.970	21.965.517	21.658.724	19.492.852	17.543.566	15.789.210	14.210.289	12.789.260
	594.231.906	625.558.639	562.961.770	562.677.184	541.255.413	519.194.327	498.507.680	481.334.559	467.395.854
Current Assets									
Operational Cash	54.299.595	34.161.810	66.265.538	70.543.290	70.543.290	70.543.290	70.543.290	70.543.290	70.543.290
Trade receivables	103.840.941	92.502.003	82.035.770	75.880.269	99.867.370	91.895.702	89.512.164	93.653.089	98.001.061
Inventories	69.803.272	95.308.187	80.427.248	100.387.874	74.900.528	68.921.777	67.134.123	70.239.817	73.500.796
Other Current Assets	16.904.954	12.857.929	18.950.257	17.939.124	19.530.345	33.490.134	45.008.330	53.785.328	64.973.317
	244.848.762	234.829.929	247.678.813	263.850.557	264.841.533	264.850.904	272.197.906	288.221.524	307.018.464
Total Assets	839.080.668	860.388.568	810.640.583	826.527.741	806.096.946	784.045.231	770.705.587	769.556.083	774.414.318
Liabilities and Equity									
Equity									
Share of Capital	264.600.000	264.600.000	264.600.000	264.600.000	264.600.000	264.600.000	264.600.000	264.600.000	264.600.000
Treasury Shares	- 22.609.745	- 22.609.745	- 22.609.745	- 22.609.745	- 22.609.745	- 22.609.745	- 22.609.745	- 22.609.745	- 22.609.745
Reserves	22.919.184	28.549.770	28.438.482	29.881.671	48.471.220	73.182.537	95.401.691	117.331.695	141.270.907
Other Equity	46.957.539	59.880.679	58.731.747	96.398.305	93.907.084	79.947.295	68.429.099	59.652.101	48.464.112
	311.866.978	330.420.704	329.160.484	368.270.231	384.368.559	395.120.087	405.821.045	418.974.052	431.725.274
Consolidated Net Profit of the year	50.409.007	62.776.790	70.113.795	47.343.517	24.711.317	22.219.154	21.930.004	23.939.212	25.929.823
	362.275.985	393.197.494	399.274.279	415.613.748	409.079.876	417.339.241	427.751.050	442.913.263	457.655.097
Minority Interests	51.302.437	57.429.062	62.129.585	67.489.518	67.489.518	67.489.518	67.489.518	67.489.518	67.489.518
Total Equity	413.578.422	450.626.556	461.403.864	483.103.266	476.569.394	484.828.759	495.240.568	510.402.781	525.144.615
Liabilities									
Non - Current Liabilities									
Interest-bearing loans and borrowings	121.908.605	89.633.570	53.898.833	121.442.304	121.442.304	121.442.304	121.442.304	121.442.304	121.442.304
Deferred tax liabilities	48.112.658	48.748.942	42.239.469	41.462.753	41.462.753	41.462.753	41.462.753	41.462.753	41.462.753
Other Non-Current Liabilities	44.920.934	40.562.666	41.374.538	45.135.552	42.644.331	28.684.542	17.166.346	8.389.348	8.389.348
	214.942.197	178.945.178	137.512.840	208.040.609	205.549.388	191.589.599	180.071.403	171.294.405	171.294.405
Current liabilities									
Trade payables	91.859.892	123.169.088	37.540.063	38.874.693	29.960.211	27.568.711	26.853.649	28.095.927	29.400.318
Interest-bearing loans and borrowings	82.871.687	69.276.110	107.174.713	24.831.649	24.831.649	24.831.649	24.831.649	24.831.649	24.831.649
Other Current Liability	35.828.470	38.371.636	67.009.103	71.677.524	69.186.303	55.226.514	43.708.318	34.931.320	23.743.631
	210.560.049	230.816.834	211.723.879	135.383.866	123.978.163	107.626.873	95.393.616	87.858.896	77.975.298
Total Liabilities	425.502.246	409.762.012	349.236.719	343.424.475	329.527.552	299.216.472	275.465.019	259.153.301	249.269.703
Total Liabilities and Equity	839.080.668	860.388.568	810.640.583	826.527.741	806.096.946	784.045.231	770.705.587	769.556.083	774.414.318
Inventories / Sales	12,4%	15,9%	14,1%	18,7%	15,0%	15,0%	15,0%	15,0%	15,0%
Trade Receivables/Sales	18,4%	15,5%	14,3%	14,2%	20,0%	20,0%	20,0%	20,0%	20,0%
Trade Payables/Sales	16,3%	20,6%	6,6%	7,3%	6,0%	6,0%	6,0%	6,0%	6,0%

Appendix 5: Secil base case income statement

Consolidated Income Statement									
	Historical Income Statement				Forecasted Income Statement				
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Revenues	564.174.635	598.511.887	572.231.001	535.818.904	499.336.851	459.478.512	447.560.819	468.265.446	490.005.305
Operating Costs	-421.074.232	-441.164.193	-419.485.462	-407.595.057	-340.735.391	-311.792.319	-303.185.264	-318.283.552	-334.136.755
EBITDA	143.100.403	157.347.694	152.745.539	128.223.847	158.601.460	147.686.193	144.375.555	149.981.894	155.868.550
Depreciation & Amortization	- 61.487.008	- 56.793.449	- 53.283.507	- 81.929.916	- 56.267.718	- 54.125.541	- 51.919.433	- 49.850.768	- 48.133.456
Government Grants	1.924.772	1.376.110	1.255.809	30.939.244	-	-	-	-	-
Gains and Losses in non current assets	133.087	- 2.485.724	290.670	1.342.442	-	-	-	-	-
EBIT	83.671.254	99.444.631	101.008.511	78.575.617	102.333.741	93.560.652	92.456.122	100.131.126	107.735.094
Interest and similar income	3.233.677	3.366.847	2.920.404	2.740.126	2.740.126	2.740.126	2.740.126	2.740.126	2.740.126
Interest and similar expenses	- 11.775.184	- 11.689.175	- 8.259.674	- 8.268.886	- 10.678.714	- 11.425.477	- 11.425.477	- 11.425.477	- 11.425.477
EBT	75.129.747	91.122.303	95.669.241	73.046.857	94.395.154	84.875.301	83.770.772	91.445.775	99.049.743
Income Taxes	- 19.762.938	- 20.790.259	- 12.892.420	- 16.553.189	- 25.958.667	- 23.340.708	- 23.036.962	- 25.147.588	- 27.238.679
Net Profit	55.366.809	70.332.044	82.776.821	56.493.668	68.436.487	61.534.593	60.733.809	66.298.187	71.811.064
Minority Interest	- 4.957.802	- 7.555.254	- 12.619.474	- 9.150.151	- 11.084.502	- 9.966.618	- 9.836.917	- 10.738.167	- 11.631.075
Net Profit after Minority Interest	50.409.007	62.776.790	70.157.347	47.343.517	57.351.984	51.567.975	50.896.892	55.560.020	60.179.989
Income tax	-26,3%	-22,6%	-13,5%	-22,7%	27,5%	27,5%	27,5%	27,5%	27,5%
Minority Interest/Net profit	9,0%	10,7%	15,2%	16,2%	16,2%	16,2%	16,2%	16,2%	16,2%
Shareholders Dividends	x	x	37.247.245	28.753.968	32.640.667	29.348.821	28.966.888	31.620.809	34.250.166
Dividends/Net Income	x	x	53,1%	60,7%	56,9%	56,9%	56,9%	56,9%	56,9%

Appendix 6: Secil cost of equity computation

Cost of Equity	2010	2011	2012	2013	2014	2015
R_f	2,95%	2,95%	2,95%	2,95%	2,95%	2,95%
Risk Premium ($R_m - R_f$)	6,50%	6,50%	6,50%	6,50%	6,50%	6,50%
Beta Unlevered (β_u)	0,72	0,72	0,72	0,72	0,72	0,72
Beta Levered ($\beta_L = \beta_u \times D/E \times (1 - T)$)	0,84	0,81	0,81	0,81	0,80	0,79
T	22,66%	27,50%	27,50%	27,50%	27,50%	27,50%
$R_e = R_f + (R_m - R_f) \times \beta_L$	8,43%	8,20%	8,24%	8,22%	8,17%	8,11%

Appendix 7: Secil cost of debt computation

Cost of Debt	2010	2011	2012	2013	2014	2015
Interest Coverage Ratio (EBIT/Interest Expenses)	10	10	8	8	9	9
Rating	AAA	AAA	AA	AA	AA	AA
Default Spread (a)	0,65%	0,65%	1,15%	1,15%	1,15%	1,15%
Portuguese Treasury Bond Rate (b)	5,0%	5,0%	5,0%	5,0%	5,0%	5,0%
Additional Spread (c)	1,5%	1,5%	1,5%	1,5%	1,5%	1,5%
$Rd = (a) + (b) + (c)$	7,15%	7,15%	7,65%	7,65%	7,65%	7,65%
$Rd * (1-T)$	5,53%	5,18%	5,55%	5,55%	5,55%	5,55%

Appendix 8: Secil market value of debt computation

Debt Market Value	2010	2011	2012	2013	2014	2015
(+) Long-Term Debt	121.442.304	121.442.304	121.442.304	121.442.304	121.442.304	121.442.304
(+) Short-Term Debt	24.831.649	24.831.649	24.831.649	24.831.649	24.831.649	24.831.649
(+) Leases	3.078.684	3.078.684	3.078.684	3.078.684	3.078.684	3.078.684
(-) Cash	70.543.290	70.543.290	70.543.290	70.543.290	70.543.290	70.543.290
(=) Book Value of Debt (a)	78.809.347	78.809.347	78.809.347	78.809.347	78.809.347	78.809.347
Maturity	-	5	5	5	5	5
Interests (Book Value of Debt x Rd)	8.268.886	10.678.714	11.425.477	11.425.477	11.425.477	11.425.477
Discount factor (Rd)	-	0,93	0,86	0,80	0,74	0,69
Discounted Cash Flow	-	9.966.135	9.859.304	9.158.666	8.507.818	7.903.222
PV of Interest (b)	45.395.145	37.491.923	37.491.923	28.984.105	19.825.439	9.966.135
Debt Market Value ((a)+(b) = (c))	124.204.492	116.301.270	116.301.270	107.793.452	98.634.786	88.775.482

Appendix 9: Secil market value of equity computation

Equity Market Value	2010	2011	2012	2013	2014	2015
EV/EBITDA Multiple (a)	7,8	7,8	7,8	7,8	7,8	7,8
Secil EBITDA in 2010 (b)	128.223.847	158.601.460	147.686.193	144.375.555	149.981.894	155.868.550
Enterprise Value (EV) ((a)x(b) = (c))	1.000.146.007	1.237.091.386	1.151.952.306	1.126.129.330	1.169.858.774	1.215.774.690
Market Value of Debt (d)	124.204.492	116.301.270	116.301.270	107.793.452	98.634.786	88.775.482
Equity Market Value ((c) - (d))	875.941.515	1.120.790.116	1.035.651.036	1.018.335.877	1.071.223.988	1.126.999.208

Appendix 10: Secil WACC computation

Secil Capital Structure

Capital Structure	2010	2011	2012	2013	2014	2015
Market Value of Debt (D)	124.204.492	116.301.270	116.301.270	107.793.452	98.634.786	88.775.482
Market Value of Equity (E)	875.941.515	1.120.790.116	1.035.651.036	1.018.335.877	1.071.223.988	1.126.999.208
D + E	1.000.146.007	1.237.091.386	1.151.952.306	1.126.129.330	1.169.858.774	1.215.774.690
D / (D + E)	12%	9%	10%	10%	8%	7%
E / (D + E)	88%	91%	90%	90%	92%	93%

WACC computation

WACC Computation	2010	2011	2012	2013	2014	2015
$Rd * (1-T)$	5,53%	5,18%	5,55%	5,55%	5,55%	5,55%
$D / (D + E) (a)$	12%	9%	10%	10%	8%	7%
$Re = Rf + (Rm - Rf) * \beta L$	8,43%	8,20%	8,24%	8,22%	8,17%	8,11%
$E / (D + E) (b)$	88%	91%	90%	90%	92%	93%
$WACC = Rd * (1-T) * (a) + Re * (b)$	8,1%	7,9%	8,0%	8,0%	7,9%	7,9%

Appendix 11: Secil valuation using discounted cash-flow approach

Enterprise Value	2007	2008	2009	2010	2011	2012	2013	2014	2015	Terminal Value
EBIT	83.671.254	99.444.631	101.008.511	78.575.617	102.333.741	93.560.652	92.456.122	100.131.126	107.735.094	-
(-) Income tax	22.009.788	22.689.063	13.611.942	17.806.064	28.141.779	25.729.179	25.425.434	27.536.060	29.627.151	-
(+) Amortization & Depreciation & Others	-61.487.008	-56.793.449	-53.283.507	-81.929.916	-56.267.718	-54.125.541	-51.919.433	-49.850.768	-48.133.456	-
Cash Flow form operations	123.148.474	133.549.017	140.680.076	142.699.469	130.459.681	121.957.014	118.950.121	122.445.834	126.241.399	-
(-) Investment in WC	-	17.143.219	60.281.853	12.470.495	7.414.237	11.558.918	3.456.131	6.004.342	6.304.559	-
(-) Capital Expenditures	41.000.000	42.000.000	31.000.000	44.000.000	34.845.948	32.064.455	31.232.786	32.677.647	34.194.751	-
Free Cash flow to the firm	82.148.474	108.692.236	49.398.223	86.228.974	88.199.496	101.451.477	91.173.467	83.763.846	85.742.089	88.314.352
Discount factor					0,93	0,86	0,80	0,74	0,69	14,31
Discounted Cash Flow					81.838.218	87.232.762	72.704.454	61.982.629	58.893.677	1.263.347.446
WACC					7,8%	7,8%	7,8%	7,8%	7,8%	7,8%
Perpetuity (g)										3,0%
PV (2011 - 2015) (a)							362.651.740			
PV (Terminal Value) (b)										1.263.347.446
PV ((a)+(b) = (c))										1.625.999.186
Lack of Liquidity (30% of (c) = (d))										487.799.756
PV with lack of liquidity ((c) - (d))										1.138.199.430

Appendix 12: Lafarge base case balance sheet

Consolidated Balance Sheet							
	Historical Balance Sheet		Forecast Balance Sheet				
	2009	2010	2011	2012	2013	2014	2015
Assets							
Non - Current Assets							
Property, Plant and Equipment	9.586.587	8.874.632	8.874.632	8.874.632	8.874.632	8.874.632	8.874.632
Investment Properties	7.527	5.934	5.934	5.934	5.934	5.934	5.934
Goodwill	-	-	-	-	-	-	-
Intangible Assets	126.012	86.409	86.409	86.409	86.409	86.409	86.409
Other Non-Current Assets	6.699.263	2.931.469	2.931.469	2.931.469	2.931.469	2.931.469	2.931.469
	16.419.389	11.898.444	11.898.444	11.898.444	11.898.444	11.898.444	11.898.444
Current Assets							
Operational Cash	22.390.762	24.773.692	24.773.692	24.773.692	24.773.692	24.773.692	24.773.692
Trade Receivables	22.658.291	16.792.814	15.113.533	13.148.773	12.491.335	13.115.901	13.771.697
Inventories	664.226	605.330	544.797	473.973	450.275	472.788	496.428
Other Current Assets	1.006.333	4.473.038	5.186.066	5.694.452	6.113.192	6.498.339	6.910.080
	46.719.612	46.644.874	45.618.087	44.090.891	43.828.494	44.860.721	45.951.897
Total Assets	63.139.001	58.543.318	57.516.531	55.989.335	55.726.938	56.759.165	57.850.341
Liabilities and Equity							
Equity							
Share of Capital	18.150.000	18.150.000	18.150.000	18.150.000	18.150.000	18.150.000	18.150.000
Treasury Shares	-	-	-	-	-	-	-
Reserves	3.712.404	3.867.364	3.867.364	3.867.364	3.867.364	3.867.364	3.867.364
Other Equity	16.526.443	19.655.016	18.469.544	19.452.849	20.279.131	21.060.064	21.894.717
	38.388.847	41.672.380	40.486.908	41.470.213	42.296.495	43.077.428	43.912.081
Consolidated Net Profit of the year	3.283.533	240.583	2.000.078	1.663.763	1.551.226	1.658.136	1.770.391
	41.672.380	41.912.963	42.486.986	43.133.976	43.847.722	44.735.564	45.682.472
Minority Interests	-	-	-	-	-	-	-
Total Equity	41.672.380	41.912.963	42.486.986	43.133.976	43.847.722	44.735.564	45.682.472
Liabilities							
Non - Current Liabilities							
Interest-bearing loans and borrowings	-	-	-	-	-	-	-
Deferred tax liabilities	125.292	110.103	110.103	110.103	110.103	110.103	110.103
Other Non-Current Liabilities	335.994	85.994	85.994	85.994	85.994	85.994	85.994
	461.286	196.097	196.097	196.097	196.097	196.097	196.097
Current liabilities							
Trade payables	15.534.253	14.237.608	12.813.847	11.148.047	10.590.645	11.120.177	11.676.186
Interest-bearing loans and borrowings	-	-	-	-	-	-	-
Other Current Liability	5.471.082	2.196.650	2.019.601	1.511.215	1.092.474	707.328	295.586
	21.005.335	16.434.258	14.833.448	12.659.262	11.683.119	11.827.504	11.971.772
Total Liabilities	21.466.621	16.630.355	15.029.545	12.855.359	11.879.216	12.023.601	12.167.869
Total Liabilities and Equity	63.139.001	58.543.318	57.516.531	55.989.335	55.726.938	56.759.165	57.850.341
<i>Inventories/Sales</i>	0,9%	1,1%	1,1%	1,1%	1,1%	1,1%	1,1%
<i>Trade Receivables/Sales</i>	32,0%	29,6%	29,6%	29,6%	29,6%	29,6%	29,6%
<i>Trade Payables/Sales</i>	21,9%	25,1%	25,1%	25,1%	25,1%	25,1%	25,1%

Appendix 13: Lafarge base case income statement

Consolidated Income Statement							
	Historical Income Statement		Forecast Income Statement				
	2009	2010	2011	2012	2013	2014	2015
Revenues	70.812.999	56.640.248	50.976.223	44.349.314	42.131.848	44.238.441	46.450.363
Operating Costs	- 66.247.267	- 55.386.277	- 47.407.888	- 41.244.862	- 39.182.619	- 41.141.750	- 43.198.838
EBITDA	4.565.732	1.253.971	3.568.336	3.104.452	2.949.229	3.096.691	3.251.525
Depreciation & Amortization	- 962.535	- 809.607	- 809.607	- 809.607	- 809.607	- 809.607	- 809.607
Government Grants	-	-	-	-	-	-	-
Gains and Losses in non current assets	-	-	-	-	-	-	-
EBIT	3.603.197	444.364	2.758.729	2.294.845	2.139.622	2.287.084	2.441.918
Interest and similar income	469.373	194.438	-	-	-	-	-
Interested and similar expenses	- 148.723	- 148.120	-	-	-	-	-
EBT	3.923.847	490.682	2.758.729	2.294.845	2.139.622	2.287.084	2.441.918
Income Taxes	- 640.314	- 250.099	- 758.650	- 631.082	- 588.396	- 628.948	- 671.528
Net profit	3.283.533	240.583	2.000.078	1.663.763	1.551.226	1.658.136	1.770.391
Minority Interest	-	-	-	-	-	-	-
Net Profit after Minority Interest	3.283.533	240.583	2.000.078	1.663.763	1.551.226	1.658.136	1.770.391
Income tax	16,3%	51,0%	27,5%	27,5%	27,5%	27,5%	27,5%

Appendix 14: Lafarge WACC computation (Re)

Cost of Equity	2010
<i>R_f</i>	2,95%
<i>Risk Premium (R_m-R_f)</i>	6,50%
Beta Unlevered (β _u)	0,72
Beta Levered (β _L = β _u × D/E × (1 - T))	0,72
T	27,50%
WACC = Re = R_f + (R_m - R_f) * β_L	7,63%

Appendix 15: Lafarge valuation using discounted cash-flow approach

Enterprise Value	2009	2010	2011	2012	2013	2014	2015	Terminal Value
EBIT	3.603.197	444.364	2.758.729	2.294.845	2.139.622	2.287.084	2.441.918	-
(-) Income tax	990.879	122.200	758.650	631.082	588.396	628.948	671.528	-
(+) Amortization & Depreciation & Others	962.535	809.607	809.607	809.607	809.607	809.607	809.607	-
Cash Flow from operations	3.574.853	1.131.771	2.809.685	2.473.370	2.360.833	2.467.743	2.579.998	-
(-) Investment in WC	7.788.264	4.627.728	316.054	369.783	123.735	117.548	123.426	-
(-) Capital Expenditures	-	-	809.607	809.607	809.607	809.607	809.607	-
Free Cash flow to the firm	- 4.213.411	5.759.499	2.316.132	2.033.545	1.674.961	1.540.588	1.646.965	1.696.374
Discount factor			0,93	0,86	0,80	0,75	0,69	14,954
Discounted Cash Flow			2.151.939	1.755.445	1.343.398	1.148.029	1.140.296	25.367.283

<i>Re</i>	7,63%	PV (2011 - 2015) (a)	7.539.108
<i>Perpetuity (g)</i>	3,0%	PV (Terminal Value) (b)	25.367.283
		PV ((a) + (b) = (c))	32.906.391
		Lack of Liquidity (0% of (c) = (d))	-
		PV with lack of liquidity ((c) - (d))	32.906.391

Appendix 16: Lafarge optimistic scenario

Lafarge optimistic scenario income statement

Consolidated Income Statement	Historical Income Statement		Forecast Income Statement				
	2009	2010	2011	2012	2013	2014	2015
Revenues	70.812.999	56.640.248	52.109.028	47.940.306	44.105.081	46.310.336	48.625.852
Operating Costs	- 66.247.267	- 55.386.277	- 48.461.396	- 44.584.484	- 41.017.726	- 43.068.612	- 45.222.043
EBITDA	4.565.732	1.253.971	3.647.632	3.355.821	3.087.356	3.241.723	3.403.810
Depreciation & Amortization	- 962.535	- 809.607	- 809.607	- 809.607	- 809.607	- 809.607	- 809.607
Government Grants	-	-	-	-	-	-	-
Gains and Losses in non current assets	-	-	-	-	-	-	-
EBIT	3.603.197	444.364	2.838.025	2.546.214	2.277.749	2.432.116	2.594.203
Interest and similar income	469.373	194.438	-	-	-	-	-
Interest and similar expenses	- 148.723	- 148.120	-	-	-	-	-
EBT	3.923.847	490.682	2.838.025	2.546.214	2.277.749	2.432.116	2.594.203
Income Taxes	- 640.314	- 250.099	- 780.457	- 700.209	- 626.381	- 668.832	- 713.406
Net profit	3.283.533	240.583	2.057.568	1.846.005	1.651.368	1.763.284	1.880.797
Minority Interest	-	-	-	-	-	-	-
Net Profit after Minority Interest	3.283.533	240.583	2.057.568	1.846.005	1.651.368	1.763.284	1.880.797

<i>Income tax</i>	16,3%	51,0%	27,5%	27,5%	27,5%	27,5%	27,5%
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Lafarge optimistic scenario cash-flow valuation

Enterprise Value	2009	2010	2011	2012	2013	2014	2015	Terminal Value
EBIT	3.603.197	444.364	2.838.025	2.546.214	2.277.749	2.432.116	2.594.203	-
(-) Income tax	990.879	122.200	780.457	700.209	626.381	668.832	713.406	-
(+) Amortization & Depreciation & Others	962.535	809.607	809.607	809.607	809.607	809.607	809.607	-
Cash Flow from operations	3.574.853	1.131.771	2.867.175	2.655.612	2.460.975	2.572.891	2.690.404	-
(-) Investment in WC	7.788.264	4.627.728	252.843	232.615	214.006	123.054	129.206	-
(-) Capital Expenditures	-	-	809.607	809.607	809.607	809.607	809.607	-
Free Cash flow to the firm	- 4.213.411	5.759.499	2.310.411	2.078.621	1.865.374	1.640.231	1.751.591	1.804.138
Discount factor			0,93	0,86	0,80	0,75	0,69	14,954
Discounted Cash Flow			2.146.624	1.794.356	1.496.118	1.222.283	1.212.735	26.978.771

<i>Re</i>	7,63%	PV (2011 - 2015) (a)	7.872.115
<i>Perpetuity (g)</i>	3,0%	PV (Terminal Value) (b)	26.978.771
		PV ((a) + (b) = (c))	34.850.886
		Lack of Liquidity (0% of (c) = (d))	-
		PV with lack of liquidity ((c) - (d))	34.850.886

Appendix 17: Lafarge pessimistic scenario

Lafarge pessimistic scenario income statement

Consolidated Income Statement	Historical Income Statement		Forecast Income Statement				
	2009	2010	2011	2012	2013	2014	2015
Revenues	70.812.999	56.640.248	48.144.211	41.404.021	39.333.820	37.367.129	35.498.773
Operating Costs	- 66.247.267	- 55.386.277	- 44.774.116	- 38.505.740	- 36.580.453	- 34.751.430	- 33.013.859
EBITDA	4.565.732	1.253.971	3.370.095	2.898.281	2.753.367	2.615.699	2.484.914
Depreciation & Amortization	- 962.535	- 809.607	- 809.607	- 809.607	- 809.607	- 809.607	- 809.607
Government Grants	-	-	-	-	-	-	-
Gains and Losses in non current assets	-	-	-	-	-	-	-
EBIT	3.603.197	444.364	2.560.488	2.088.674	1.943.760	1.806.092	1.675.307
Interest and similar income	469.373	194.438	-	-	-	-	-
Interested and similar expenses	- 148.723	- 148.120	-	-	-	-	-
EBT	3.923.847	490.682	2.560.488	2.088.674	1.943.760	1.806.092	1.675.307
Income Taxes	- 640.314	- 250.099	- 704.134	- 574.385	- 534.534	- 496.675	- 460.709
Net profit	3.283.533	240.583	1.856.354	1.514.289	1.409.226	1.309.417	1.214.598
Minority Interest	-	-	-	-	-	-	-
Net Profit after Minority Interest	3.283.533	240.583	1.856.354	1.514.289	1.409.226	1.309.417	1.214.598
Income tax	16,3%	51,0%	27,5%	27,5%	27,5%	27,5%	27,5%

Lafarge pessimistic scenario cash-flow valuation

Enterprise Value	2009	2010	2011	2012	2013	2014	2015	Terminal Value
EBIT	3.603.197	444.364	2.560.488	2.088.674	1.943.760	1.806.092	1.675.307	-
(-) Income tax	990.879	122.200	704.134	574.385	534.534	496.675	460.709	-
(+) Amortization & Depreciation & Others	962.535	809.607	809.607	809.607	809.607	809.607	809.607	-
Cash Flow from operations	3.574.853	1.131.771	2.665.961	2.323.896	2.218.833	2.119.024	2.024.205	-
(-) Investment in WC	7.788.264	4.627.728	474.080	376.104	115.518	109.742	104.255	-
(-) Capital Expenditures	-	-	809.607	809.607	809.607	809.607	809.607	-
Free Cash flow to the firm	- 4.213.411	5.759.499	2.330.434	1.890.393	1.524.744	1.419.158	1.318.852	1.358.418
Discount factor			0,93	0,86	0,80	0,75	0,69	14,954
Discounted Cash Flow			2.165.227	1.631.869	1.222.917	1.057.542	913.123	20.313.543

Re	7,63%	PV (2011 - 2015) (a)	6.990.678
Perpetuity (g)	3,0%	PV (Terminal Value) (b)	20.313.543
		PV ((a)+(b)=(c))	27.304.222
		Lack of Liquidity [0% of (c) = (d)]	-
		PV with lack of liquidity ((c)-(d))	27.304.222

Appendix 19: Lafarge Sensitivity Analysis

Terminal Value/ΔWACC	+1%	+0,5%	0%	-0,5%	-1%
5%	38.850.448	44.823.679	53.064.246	65.168.774	84.692.934
4%	31.813.284	35.503.908	40.208.754	46.413.817	54.974.670
3%	27.276.001	29.817.576	32.906.391	36.741.164	41.630.105
2%	24.107.430	25.986.492	28.198.117	30.839.526	34.049.931
1%	21.769.415	23.230.045	24.910.137	26.863.381	29.162.537

Appendix 20: Merged entity valuation

Merged entity income statement

Consolidated Income Statement	Historical Income Statement		Forecasted Income Statement				
	2009	2010	2011	2012	2013	2014	2015
Revenues	643.044.000	592.459.152	550.313.074	503.827.826	489.692.667	512.503.887	536.455.668
Operating Costs	-485.732.729	-462.981.334	-388.143.279	-353.037.181	-342.367.883	-359.425.302	-377.335.593
EBITDA	157.311.271	129.477.818	162.169.795	150.790.645	147.324.784	153.078.585	159.120.075
Depreciation & Amortization	- 54.246.042	- 82.739.523	- 57.077.325	- 54.935.148	- 52.729.040	- 50.660.375	- 48.943.063
Government Grants	1.255.809	30.939.244	-	-	-	-	-
Gains and Losses in non current assets	290.670	1.342.442	-	-	-	-	-
EBIT	104.611.708	79.019.981	105.092.470	95.855.497	94.595.745	102.418.210	110.177.013
Interest and similar income	3.389.777	2.934.564	2.740.126	2.740.126	2.740.126	2.740.126	2.740.126
Interested and similar expenses	- 8.408.397	- 8.417.006	- 10.678.714	- 11.425.477	- 11.425.477	- 11.425.477	- 11.425.477
EBT	99.593.088	73.537.539	97.153.882	87.170.146	85.910.394	93.732.859	101.491.662
Income Taxes	- 20.403.252	- 21.040.358	- 26.717.318	- 23.971.790	- 23.625.358	- 25.776.536	- 27.910.207
Net Profit	58.650.342	70.572.627	70.436.565	63.198.356	62.285.036	67.956.323	73.581.455
Minority Interest	- 4.957.802	- 7.555.254	- 7.540.688	- 9.150.151	- 11.084.502	- 9.966.618	- 9.836.917
Net Profit after Minority Interest	53.692.540	63.017.373	62.895.877	54.048.205	51.200.533	57.989.705	63.744.538
<i>Income tax</i>	20,5%	28,6%	27,5%	27,5%	27,5%	27,5%	27,5%
<i>Minority Interest/Net profit</i>	8,5%	10,7%	10,7%	10,7%	10,7%	10,7%	10,7%
<i>Shareholders Dividends</i>	37.247.245	28.753.968	36.165.128	31.077.717	29.440.306	33.344.079	36.653.108
<i>Dividends/Net Income</i>	69,4%	45,6%	57,5%	57,5%	57,5%	57,5%	57,5%

Merged entity discounted cash-flow valuation

Enterprise Value	2007	2008	2009	2010	2011	2012	2013	2014	2015	Terminal Value
EBIT	83.671.254	99.444.631	104.611.708	79.019.981	105.092.470	95.855.497	94.595.745	102.418.210	110.177.013	-
(c) Income tax	22.009.788	22.689.063	-21.431.397	-22.608.979	28.900.429	26.360.262	26.013.830	28.165.008	30.298.678	-
(h) Amortization & Depreciation & Others	-61.487.008	-56.793.449	-54.246.042	-82.739.523	-57.077.325	-54.935.148	-52.729.040	-50.660.375	-48.943.063	-
Cash Flow form operations	123.148.474	133.549.017	180.289.147	184.368.483	133.269.366	124.430.383	121.310.955	124.913.577	128.821.397	-
(i) Investment in WC	-	17.143.219	24.931.483	21.770.947	59.965.799	12.100.712	7.290.502	11.441.370	3.332.705	-
(j) Capital Expenditures	41.000.000	42.000.000	31.000.000	44.000.000	36.502.474	35.159.348	34.172.934	35.764.802	37.436.264	-
Free Cash flow to the firm	82.148.474	108.692.236	124.357.664	162.139.430	36.801.093	77.170.323	79.847.519	100.590.145	94.717.838	97.559.374
Discount factor					0,93	0,86	0,80	0,74	0,69	14,30
Discounted Cash Flow					34.127.038	66.352.535	63.669.067	74.427.505	65.051.940	1.394.785.052
WACC					7,8%	7,8%	7,8%	7,8%	7,8%	7,8%
Perpetuity (g)										3,0%
							303.628.085			
							1.394.785.052			
							1.698.413.137			
							509.523.941			
							1.188.889.196			

Appendix 21: Merged entity valuation with synergies

Merged entity with synergies income statement

Consolidated Income Statement	Historical Income Statement		Forecasted Income Statement				
	2009	2010	2011	2012	2013	2014	2015
Revenues	643.044.000	592.459.152	550.313.074	503.827.826	489.692.667	513.175.106	537.158.840
Operating Costs	-485.732.729	-462.981.334	-385.775.220	-351.802.112	-341.174.773	-358.175.533	-376.026.331
EBITDA	157.311.271	129.477.818	164.537.854	152.025.714	148.517.894	154.999.573	161.132.509
Depreciation & Amortization	- 54.246.042	- 82.739.523	- 57.077.325	- 54.935.148	- 52.729.040	- 50.660.375	- 48.943.063
Government Grants	1.255.809	30.939.244	-	-	-	-	-
Gains and Losses in non current assets	290.670	1.342.442	-	-	-	-	-
EBIT	104.611.708	79.019.981	107.460.529	97.090.565	95.788.854	104.339.198	112.189.446
Interest and similar income	3.389.777	2.934.564	2.740.126	2.740.126	2.740.126	2.740.126	2.740.126
Interested and similar expenses	- 8.408.397	- 8.417.006	- 10.678.714	- 11.425.477	- 11.425.477	- 11.425.477	- 11.425.477
EBT	99.593.088	73.537.539	99.521.941	88.405.215	87.103.503	95.653.848	103.504.095
Income Taxes	- 20.403.252	- 21.040.358	- 27.368.534	- 24.311.434	- 23.953.463	- 26.304.808	- 28.463.626
Net Profit	58.650.342	70.572.627	72.153.407	64.093.781	63.150.040	69.349.039	75.040.469
Minority Interest	- 4.957.802	- 7.555.254	- 7.724.487	- 9.150.151	- 11.084.502	- 9.966.618	- 9.836.917
Net Profit after Minority Interest	53.692.540	63.017.373	64.428.921	54.943.630	52.065.538	59.382.421	65.203.552
<i>Income tax</i>	20,5%	28,6%	27,5%	27,5%	27,5%	27,5%	27,5%
<i>Minority Interest/Net profit</i>	8,5%	10,7%	10,7%	10,7%	10,7%	10,7%	10,7%
<i>Shareholders Dividends</i>	37.247.245	28.753.968	37.046.628	31.592.586	29.937.683	34.144.891	37.492.041
<i>Dividends/Net Income</i>	69,4%	45,6%	57,5%	57,5%	57,5%	57,5%	57,5%

Merged entity with synergies cash-flow valuation

Enterprise Value	2007	2008	2009	2010	2011	2012	2013	2014	2015	Terminal Value
EBIT	83.671.254	99.444.631	104.611.708	79.019.981	107.460.529	97.090.565	95.788.854	104.339.198	112.189.446	-
(-) Income tax	22.009.788	22.689.063	-21.431.397	-22.608.979	-29.551.645	-26.699.905	-26.341.935	-28.693.280	-30.852.098	-
(h) Amortization & Depreciation & Others	-61.487.008	-56.793.449	-54.246.042	-82.739.523	-57.077.325	-54.935.148	-52.729.040	-50.660.375	-48.943.063	-
Cash Flow from operations	167.168.050	178.927.143	137.426.353	139.150.525	134.986.209	125.325.808	122.175.959	126.306.294	130.280.411	-
(-) Investment in WC	-	17.143.219	24.931.483	21.770.947	59.965.799	12.100.712	7.290.502	11.441.370	3.332.705	-
(-) Capital Expenditures	41.000.000	42.000.000	31.000.000	44.000.000	36.502.474	35.159.348	34.172.934	35.811.643	37.485.334	-
Free Cash flow to the firm	126.168.050	154.070.362	81.494.870	116.921.472	38.517.935	78.065.748	80.712.524	101.936.021	96.127.782	99.011.616
Discount factor					0,93	0,86	0,80	0,74	0,69	14,30
Discounted Cash Flow					35.720.111	67.124.604	64.361.819	75.429.972	66.026.935	1.416.330.197
WACC					7,8%	7,8%	7,8%	7,8%	7,8%	7,8%
Perpetuity (g)										3,0%
					PV (2011 - 2015) (a)	308.663.441				
					PV (Terminal Value) (b)	1.416.330.197				
					PV [(a)+(b)=(c)]	1.724.993.638				
					Lack of Liquidity (30% of (c) = (d))	517.498.092				
					PV with lack of liquidity [(c)-(d)]	1.207.495.547				

Appendix 22: Synergies summary

Merged Company without Synergies and without Lack of Liquidity	1.698.413.137
Dominant Position	7.703.969
Production Cost Reduction	18.202.919
Staff Cost Redundancies	672.726
Merged Company with Synergies and without Lack of Liquidity	1.724.992.750
Total Synergies	26.580.502

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