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Mota-Engil – Equity Valuation

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Abstract

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The main goal of this dissertation was to reach the price per share of Mota-Engil Group as of the 31st of December 2013. In order to achieve such goal, in a first stage, we performed a Literature Review – gathering and presenting the most commonly used methods of equity valuation. Moreover, we concluded that the Discounting Cash Flow model (more specifically the Free Cash Flow to the Firm approach) was the most appropriate to value the price of Mota-Engil's shares. Plus, we also show the results achieved through Relative Valuation. Our target price is 9.65€ per share whereas the price practiced by the market at such date was 4.32€. Thus, according to the model by us developed, Mota-Engil's shares were undervalued, in the end of 2013.

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Finally, I want to dedicate this dissertation to my family and Rita who have always been there for me.

Nomenclature:

APV: Adjusted Present Value

CF: Cash Flow

FCFE: Free Cash Flow to Equity

K_e : Cost of equity

Rev: Revenues

Op. expenses: Operating expenses

D&A: Depreciation and Amortization

Int.: Interest

Pref. Div.: Preferred Dividends

CAPEX: Capital Expenditure

W.C.N: Working Capital Needs

Princ.: Principal repayments

New debt: Proceeds from issuing new debt

CAPM: Capital Asset Pricing Model

R_f : Risk-free Rate

β_E : Equity beta (Systematic risk of investing in a specific security, compared to the market it is inserted in)

$E(R_m)$: Expected return of market portfolio

$E(R_m) - R_f$: Market Risk Premium

FCFF: Free Cash Flow to the Firm

DCF: Discounted Cash Flows

WACC: Weighted Average Cost of Capital

EBIT(1-t): Earnings before interest and taxes, after taxes

EBITDA: Earnings before interest, taxes and depreciation and amortization

K_d : Cost of debt

CCF: Capital Cash Flows

V_L : Value of levered Firm

V_U : Value of unlevered Firm

PV: Present Value

g: Growth rate

K_{eU} : cost of equity unlevered

EVA: Economic Value Added

NOPAT (also called NOPLAT): Net operating profit after taxes;

D_{bv} : Debt Book Value;

E_{bv} : Equity Book Value;

P/E or PER: Price to Earnings Ratio

PBV: Price to Book Ratio

EV/Sales: Enterprise Value to Sales Value Ratio

EV/Sales: Enterprise Value to EBITDA Value Ratio

ROIC: Return on Invested Capital

Table of Contents

I. Introduction	1
II. Literature Review	2
II.1. Discounted Cash Flow Valuation	3
II.1.1. Free Cash Flow to Equity and Cost of Equity	3
II.1.2. Free Cash Flow to the Firm and Cost of Capital.....	5
II.1.3 Capital Cash-Flow and WACC before taxes	8
II.1.4 Adjusted Present Value	9
II.2. Value Creation Valuation Models	12
II.2.1 EVA	12
II.2.2 Economic Profit.....	13
II.3. Relative Valuation	14
II.3.1 P/E Ratio or PER	15
II.3.2 Price to Book	16
II.3.3 EV/Sales.....	16
II.3.4 EV/EBITDA.....	17
II.4. Contingent Claim Valuation	18
II.5. Summary.....	19
III. Company Presentation.....	20
III.1. Overall Performance.....	22
III.2. Performance in Stock Market:	25
III.3. Europe.....	26
III.3.1. Portugal	26
III.3.2. Poland	27
III.4. Africa.....	28
III.5. Latin America	29
IV. Company Valuation	30
IV.1. Discounted Cash Flow Valuation: Free Cash Flow to the Firm.....	30
IV.1.1 Sales & services rendered.....	31
IV.1.2 Gross Profit	33
IV.1.3 EBITDA	34
IV.1.4 EBIT	36
IV.1.5 Capital Expenditure (CAPEX).....	38
IV.1.6 Depreciation and Amortization.....	39
IV.1.7 Change in Working Capital.....	40
IV.1.8 Tax rate	41
IV.1.9 Free Cash Flow to the Firm	41

IV.1.10 Risk-free Rate	41
IV.1.11 Beta.....	41
IV.1.12 Country-Risk Premium and Market-Risk Premium.....	42
IV.1.13 Cost of Equity	42
IV.1.14 Cost of Debt	42
IV.1.15 Leverage	43
IV.1.16 Weighted Average Cost of Capital.....	44
IV.1.17 Growth in Perpetuity	44
IV.1.18 Terminal Value	45
IV.1.19 Enterprise Value.....	45
IV.1.20 Minority Interests	45
IV.1.21 Martifer, Ascendi, Indaqua and Financial Investments.....	46
IV.1.22 Price per Share	47
IV.2. Relative Valuation	48
IV.2.1. Peer Group Definition	48
IV.2.2. Multiples	50
V. Investment Bank results - Comparison	51
VI. Sensitivity Analysis	54
VII. References	56
Appendix I - Wages and salaries rationale	57

I. Introduction

Valuation is the action of estimating the value of something. We, as human beings, have developed this need for attributing an analytical value to almost everything. It is the value that we perceive that guides us in our routine in all kinds of trading and investing activities, among others.

Many people around the world use valuation for numerous purposes. Starting with students like me who decide to embrace this task of reaching a value for a company's equity, through financial analysts and ending in investors.

In this dissertation, valuation comes up more as a financial and quantitative measure regarding the estimated value of the shares of a company. However, valuation, in these specific terms, can provide us the value of the Equity but also the value of the whole Firm.

The main purpose of this dissertation is to reach the target price for Mota-Engil shares.

Firstly, we start by presenting the literature developed on Valuation Models. The goal here is to provide the reader with a contextualization on the common practices and the most broadly used and accepted methods for valuing companies.

Moreover, we explain the specificities of each model including the advantages, disadvantages and the applicability (or not) to a company with Mota-Engil's characteristics. Taking all those into consideration, we choose the valuation model(s) to use throughout the rest of the dissertation.

Furthermore, we write a chapter introducing the company to reader. We provide an historical background of Mota-Engil, including the main historical facts from the creation of Mota & Companhia to the merger of Mota & Companhia with Engil, passing through the important steps by those two companies both separate and merged.

Additionally, we show how the group is organized nowadays and describe the sectors and regions in which it operates.

Following the choice of our model(s) and the company presentation, we provide our valuation of Mota-Engil. In this part, we explain our assumptions, methodology and results achieved.

After having a target price, we test its coherence by comparing it with an Investment Research by Caixa BI, the Investment Bank of Caixa Geral de Depósitos Group, which contains an equity valuation of Mota-Engil.

II. Literature Review

There are many models and techniques to reach the value of a firm and its corresponding equity. Those have been developed over the years and hopefully will continue that way in the future.

Every model has limitations and advantages when compared to others and all they provide is an approximation to the real value of a firm, since it is very hard (if not impossible) to identify all the factors influencing the value of a firm and also to attribute an accurate numerical value to the factors taken into account.

In this chapter, we present some of the existing valuation methods, showing each method's advantages and disadvantages.

First of all, let us state and briefly explain the most used methods to reach both equity and firm values.

According to Damodaran (1994), the approaches to valuation may be divided in three broad groups: Discounted Cash Flow Valuation, Relative Valuation and Contingent Claim Valuation.

We will complement Damodaran's division and add another "category" proposed by Fernandez (2013a), related to Value Creation.

Further, we will describe four Discounted Cash Flow Valuation models suggested by Fernandez (2013a): Equity cash flow, Free cash flow, Capital cash flow and APV.

As for Value Creation Valuation Models, we provide a review of two models: Economic Value Added and Economic profit.

Inside Relative Valuation subchapter we include a perspective about the use of multiples (describing the ones most widely used) and a literature review regarding the definition of a Peer Group.

Finally, we describe the main topics regarding Contingent Claim Valuation.

At last, we will summarize the main conclusions taken from this literature review chapter that will be helpful for the rest of our work.

II.1. Discounted Cash Flow Valuation

For the Discounted Cash Flow Valuation, the basic discounting principle is used. The elements needed are cash flows and a discount rate, at which those cash flows are discounted. Basically, the following formula summarizes it:

$$Present\ Value = \sum_{t=1}^n \frac{Expected\ CF_t}{(1 + Discount\ rate)^t}$$

However, several approaches, inside the Discounted Cash Flow Valuation model, have been developed.

The value arising from each of these methods brings the same result for all the others, if the same assumptions are used. What changes among them is the basis cash-flow and discounting rate considered.

Taking this into consideration, we present those four models, previously mentioned and then choose the most appropriate to use in our valuation, considering company's characteristics and availability of accurate data regarding the inputs needed.

II.1.1. Free Cash Flow to Equity and Cost of Equity

Let us start with the Free Cash Flow to Equity (FCFE from here on) that is discounted at the required return to equity or cost of equity (K_e from here onwards).

$$Equity\ Value = \sum_{t=1}^n \frac{FCFE_t}{(1 + K_e)^t}$$

First of all, FCFE is, in very simple terms, the "money (cash) that goes from the Cash of the company to the pockets of shareholders."¹ In other words, FCFE "is, therefore, the cash flow after operating expenses, interest and principal payments, and any capital expenditure needed to maintain the growth rate in projected cash flows."² The way in which the FCFE is computed depends on whether the firm is levered or not, i.e. if it includes debt in its capital structure or not.

¹ Fernandez (2013b)

² Damodaran (1994)

Below we present the components and corresponding computations to reach FCFE for a levered firm³:

$$FCFE = Rev. - Op. expenses - D \& A - Int. - Taxes + D \& A - Pref. Div. - CAPEX - W.C.N \\ - Princ. + New debt$$

For an unlevered firm, we disregard cash-flows related to debt (as previously stated), so in the previous formula we would not consider Interest expense, Principal repayments and Proceeds from new debt issued.

When using the FCFE approach to reach the value of a firm, we will need to compute the cost of equity as it represents the appropriate discounting rate, as it is possible to understand by its definition.

Regarding K_e , we can say that it represents “the rate of return that investors require to make an equity investment in a firm”⁴. To calculate such discount rate, Damodaran suggests two ways. The first one is to use Capital Asset Pricing Model (CAPM from here on) and the other is through the use of a dividend growth model. We will use CAPM to calculate our discounting rates as it is broadly acknowledged.

CAPM is a model which relates expected return with risk. Basically, according to this model, an investor of a firm must be compensated somehow due to two factors.

The first one is the time value of money – coming from one of the assumptions of this model, which assumes that everyone can lend and borrow at the risk-free rate (R_f from here on) -, i.e. an investor must receive at least the amount that he would receive if he had put his/her money in a deposit.

The other compensation is related to the additional risk that the investor is taking by investing in that specific firm.

According to this model, the cost of equity may be obtained through the following formula:

$$K_e = R_f + \beta_e [E(R_m) - R_f]$$

Another element that can and will be introduced throughout our work is the Country Risk Premium. This element refers to the additional premium required by investors because of all

³ Damodaran (1994)

⁴ Damodaran (1994)

the conditions lived in each country (political, geographical, etc.) that influence investors' decisions. So, our final formula to compute the cost of equity is:

$$K_e = R_f + \beta_e [E(R_m) - R_f] + \text{Country Risk Premium}$$

By discounting FCFE to K_e for every period we are considering, we reach the value of the equity of the firm.

II.1.2. Free Cash Flow to the Firm and Cost of Capital

The most commonly used Discounting Cash Flow model is the Free Cash Flow to the Firm (FCFF from now on), discounted at the Weighted Average Cost of Capital (WACC). The formula may be presented as follows:

$$\text{Firm Value} = \sum_{t=1}^n \frac{FCFF_t}{(1 + WACC)^t}$$

The basic difference between these two varieties of the DCF model is that the FCFE does not include cash flows related with debt. By discounting the FCFF, the enterprise value is obtained referring to the assets of all claimholders (both equity and debt holders), while through discounting FCFE the value obtained corresponds to the value for the owners of stock or preferred stock (or any other kind of equity instrument).

$$FCFF = EBIT(1 - t) + \text{Depreciation} - \text{CAPEX} - W.C.N$$

It is important to note that Earnings before interest and taxes are computed after taxes because taxes on earnings are not free cash flows to the firm.

Moreover, by using EBIT instead of EBITDA we consider the value of earnings with Depreciation and Amortization to reach the value of earnings after tax because Depreciation represents a cost that decreases taxable income for the company and is, thus, included in taxation. Afterwards we add back Depreciation and Amortization, because it does not represent a cash outflow;

Regarding the discount rate, we have already stated above that we use WACC to discount the FCFF values.

Weighted Average Cost of Capital is the weighted average of the cost of all funding source of a firm, i.e. debt, equity and other. In our case, and disregarding other funding sources as it

is not applicable to Mota-Engil, the formula for reaching the Weighted Average Cost of Capital is the one proposed by Damodaran (1994):

$$WACC = K_e \times \frac{Equity}{Debt + Equity} + K_d(1 - t) \times \frac{Debt}{Debt + Equity}$$

Let us explain the components of the formula above (excluding cost of equity, previously described and explained). The cost of debt- K_d - represents the cost that the firm has to incur in to get funding from external sources. The value used is deducted from taxes because interest expenses are tax deductible and hence decrease the cost of debt of the firm. Damodaran suggests three components to take into consideration when estimating the cost of debt: 1- Current interest rates; 2- Company's default risk and 3- Tax advantages associated. To value Debt at market values we chose to use Damodaran's⁵ suggestion:

Market Value of Debt

$$= Int. Expense \times \frac{1 - \left(\frac{1}{(1 + K_d^{average\ maturity})} \right)}{K_d} + \frac{Book\ value\ of\ Debt}{(1 + K_d^{average\ maturity})}$$

Moreover, we also use the value of Equity and Debt. Regarding these two, there is an interesting question regarding the choice of market or book values. There are different opinions.

On one hand, it is said that on a conservative basis it is more appropriate to use book values as those are less volatile (enhancing reliability). Furthermore, it is argued that "lenders will not lend on the basis of market value"⁶.

On the other hand, Damoradan refutes all the reasons favoring the use of book values, stating that those are more based on perception than on real facts and that the "true value of the firm changes over time as both firm-specific and marketwide information is revealed."⁷.

So, Damodaran defends that the values to use in these cases are the market ones because "the cost of capital measures the cost of issuing securities, stocks as well as bonds, to finance projects and that these securities are issued at market value, not at book value."⁸.

Similarly, Copeland et al (1994) write: "The first step in developing an estimate of the WACC is to determine a capital structure for the company you are valuing. This provides the market

⁵ http://pages.stern.nyu.edu/~%20adamodar/New_Home_Page/valquestions/mktvalofdebt.htm

⁶ Damodaran (1994)

⁷ Damodaran (1994)

⁸ Damodaran (1994)

value weights for the WACC formula (...) The best approach for estimating the market-value based capital structure is to identify the values of the capital structure element directly from their prices in the market place”.⁹

Hence, during our work we will use market values for determining the current market values capital structure and use it as a target for the remaining years.

Furthermore, the FCFF model may have many other variants. It may vary according to the growth pattern of the firm. If the firm has a steady-state growth, then a year might be enough to reach its firm/equity value.

However, if the firm is cyclical or is not in a steady-state growth, a more extended period must be taken into account in order to reach a consistent value. In these cases, there are the two-stage or even three-stage approaches. These relate to the number of stages that need to be considered for the company to be in an equilibrium situation.

Our analysis relies on a two-stage growth model as we consider a first period that corresponds to the company’s path to reaching a steady growth in perpetuity (second and final stage). So, in this case:

$$Firm\ Value = \sum_{t=1}^n \frac{FCFF_t}{(1+WACC)^t} + \frac{Terminal\ Value}{(1+WACC)^{t+1}}$$

$$\text{With: } Terminal\ Value = \frac{FCFF_{t+1}}{(WACC-g_{perpetuity})}$$

This DCF approach is one of the most commonly accepted (if not the most).

Its main advantages are the easiness to use since it only requires a small set of information and the fact that it “captures all the elements that affect the value of a company”¹⁰.

Moreover, the DCF approach is very adequate for multi business companies as it is able to put together the different cash flows from different businesses, discounting them at separate rates (representing the risk of each separate business).

Plus, this valuation model is not as influenced by market errors as others, since the majority of information needed is firm-specific.

⁹ Copeland et al. (1994)

¹⁰ Copeland et al. (1994)

However, there are several situations in which problems may arise by using the DCF model. As referred by Damodaran, firms in trouble, cyclical firms, firms with unutilized assets, firms with patents or product options, firms in the process of restructuring or involved in an acquisition process and private firms may be very hard to value through DCF approach, since the period, the discounting rates and the expected cash flows are much harder to reach as the level of uncertainty and lack of available data increases.

II.1.3 Capital Cash-Flow and WACC before taxes

Capital Cash Flow (CCF) corresponds to “the sum of the debt cash flow plus the equity cash flow (...) It is important to not confuse the capital cash flow with the free cash flow”¹¹.

This model discounts CCF at WACC before taxes to reach the value of the firm:

$$Firm\ Value = \sum_{t=1}^n \frac{CCF_t}{(1 + WACC_{before\ taxes})^t}$$

According to that same paper, Fernandez writes the formula to compute CCF:

$$CCF = FCFE + Debt\ CF$$

$$Debt\ CF = Interest - Change\ in\ Debt$$

WACC before taxes follows a computation similar to one previously provided. The only difference is the fact that taxes are not considered. Hence:

$$WACC_{before\ taxes} = K_e \times \frac{Equity}{Debt + Equity} + K_d \times \frac{Debt}{Debt + Equity}$$

Moreover, a characteristic of this model is that “is easier to apply whenever debt is forecasted in levels instead of a percentage of total enterprise value”¹².

This model will not be considered in our valuation as it is not as widely used as others and because, as it is written above, it works better in cases where debt amounts can be forecasted in absolute terms, which is not the case of the debt level of Mota-Engil.

¹¹ Fernandez (2013a)

¹² Ruback (2002)

II.1.4 Adjusted Present Value

The Adjusted Present Value model (APV) is similar to the other Discounted Cash Flow valuation models. The distinctive feature of this model is the fact that the company is valued by its operating assets (as if the firm was unlevered) by discounting the FCFF to a certain discounting rate, in a first stage, and then through the net effect of benefits (taxes) and costs of having debt in its capital structure. There are many theories and ways of computing the elements included in the model.

In order to better understand the model, let us provide you with an historical literature review on this model.

It all started with Modigliani and Miller (1958), when those two gave emphasis to the impacts of the capital structure in the value of firms. However, in this first study¹³ they argued that there was no relevance on such impacts as they assumed a society with no taxes.

This was definitely the beginning of a series of studies and investigations on this subject but there were several assumptions that made this model still not very applicable in real life: it assumed perfect capital market conditions (no transactions costs, no taxes, straight prices, no asymmetry of information, no barriers to entry and access to same interest rates by every player in the market).

The conclusion of this first study was that the value of a levered firm would be the same as an equal one funded with debt:

$$V_L = V_U$$

Moreover, five years later, those same two authors reviewed their opinion in Modigliani and Miller (1963)¹⁴ where this matter of the value of interest tax shields and the impacts of leverage in the capital structure of a company was first and importantly developed.

The authors realized that a company funded only with equity would not be able to deduct taxes (dividend payments do not reduce tax) as the firms that used debt to fund the company. Part of the interest expense on debt would not be considered for tax calculation, creating this incentive to fund the company not only with equity but also with debt.

Taking this into account, they concluded that a company with debt against an unlevered firm, *ceteris paribus*, should have a higher value and that the difference in value corresponded exactly to the tax savings above described

¹³ Modigliani and Miller (1958)

¹⁴ Modigliani and Miller (1963)

In this book, the authors proposed that the interest tax shields should be valued by discounting the value of tax savings related to interest on risk-free debt at the risk-free rate (R_F):

$$PV_{interest\ tax\ shields} = \frac{R_F \times Debt \times Tax\ rate}{R_F}$$

So, now we had the following computation for the value of a firm:

$$V_L = V_U + PV_{interest\ tax\ shields} = V_U + \frac{R_F \times Debt \times Tax\ rate}{R_F}$$

The model was now more accurate, but there was still room for improvement.

Myers (1974) points out that the interest expense should not be computed with the risk-free rate, as firms and investors do not have access to the same interest rate on debt. Consequently, each player in the market has different interest rates that pose more risk than risk-free assets, represented by K_d – cost of debt.

Therefore, it is concluded that the present value of interest tax shields should be computed as follows:

$$PV_{interest\ tax\ shields} = \frac{K_d \times Debt \times Tax\ rate}{K_d}$$

Further, in Miller (1977), it is argued that there is “the other side of the coin” regarding interest tax shields. We have seen in the previous paragraphs that there was an incentive for firms to contract debt because they would be able to reach a higher value for the firm by saving in taxation.

Miller introduces the bankruptcy and distress costs that arise from contracting debt and the impact of individual taxation. He concludes that “even in a world in which interest payments are fully deductible in computing corporate income taxes, the value of the firm, in equilibrium will still be independent”¹⁵.

Let us now present Damodaran¹⁶ suggestion regarding APV, as it includes the several aspects we have been introducing in the previous paragraphs about this model:

$$V_{levered\ firm} = V_{unlevered\ firm} + Tax\ benefits\ from\ borrowing + PV_{expected\ bankruptcy\ costs}$$

¹⁵ Miller (1977)

¹⁶ http://pages.stern.nyu.edu/~adamodar/New_Home_Page/valquestions/apv.htm

The value of the unlevered firm is reached by discounting FCFF at the unlevered cost of equity (computed with the unlevered beta instead of the usual –levered- one):

$$V_{unlevered\ firm} = \frac{FCFF_0(1 + g)}{K_{eU} - g}$$

Tax benefits from borrowing, if viewed as perpetual are computed:

$$Value\ of\ tax\ benefits = Tax\ rate \times Debt$$

Finally, the present value of expected bankruptcy corresponds to the product of the expected bankruptcy costs by the estimated probability of bankruptcy occurring:

$$PV_{expected\ bankruptcy\ costs} = (Prob.\ Banruptcy) \times (PV\ of\ bankruptcy\ costs)$$

This model is considered by many as more accurate in terms of splitting the components clearly and evaluating its impacts on the firm's value.

However, in practical terms there are many mistakes that may arise from using this model such as the possibility of ignoring or badly estimating expected bankruptcy cost. This will cause firm value to be overestimated.

Having this in mind, this method will not be considered in our valuation.

II.2. Value Creation Valuation Models

Value creation valuation models or residual income provide the same results as the Discounted Cash Flow models. This becomes obvious “since all the methods analyse the same reality under the same hypothesis”¹⁷.

The major difference between these models is that the components of these models are not cash-flows and “their financial meaning is much less clear than that of cash-flows”¹⁸.

Below we describe the following models: EVA (Economic Value Added), Economic Profit.

We will not put as much emphasis in these models as in the previous ones as they are not so commonly used to value companies. These methods will not be considered for our valuation.

II.2.1 EVA

Economic Value Added refers to the surplus obtained in a certain investment. Using this to the totality of projects of a company as well as the assets in place, the value of the firm can be obtained.

Damodaran¹⁹ writes that:

$$\begin{aligned} \text{Firm Value} = & \text{Invested Capital in Assets in Place} + \text{PV of EVA from Assets in Place} \\ & + \text{Sum of PV of EVA new projects} \end{aligned}$$

According to Pablo Fernandez²⁰, we can obtain EVA in the following formula:

$$EVA_t = NOPAT_t - (Dbv_{t-1} - Ebv_{t-1}) \times WACC$$

Combining the two formulas, by applying EVA to the projects and assets in place, the value of the firm can be reached.

¹⁷ Fernandez (2013c)

¹⁸ Fernandez (2013c)

¹⁹ http://pages.stern.nyu.edu/~%20adamodar/New_Home_Page/lectures/eva.html

²⁰ Fernandez (2013c)

II.2.2 Economic Profit

Fernandez states that economic profit is “book profit less the equity’s book value multiplied by the required return on equity”²¹.

For reaching the firm value through Economic Profit, we sum present value of economic profit for each period (discounted at the cost of Equity) to the previous year Equity value. The following formula is suggested:

$$Enterprise\ Value_t = Equity_{t-1} + \sum \frac{Economic\ Profit}{Cost\ of\ equity}$$

²¹ Fernandez (2013c)

II.3. Relative Valuation

The Relative Valuation approach consists on reaching the value of an asset (or firm) by using information on similar/comparable assets.

Applying this approach to Equity Valuation, the method consists on using the market value of similar firms, through the use of multiples, in order to obtain a value to the firm being valued.

The first step to this approach is to define a peer group, i.e. a group of companies that share many/some characteristics with the company we want to value. After having the group of comparable firms defined, the market value of such firms must be obtained.

In order to be able to compare the market values obtained we need to standardize them, as most of the times the values are not similar in absolute terms. From this standardization, common variables arise and they may relate to earnings, revenues, book value and many other indicators. These common variables represent the usually called multiples.

Finally, through the use of multiples and by applying them to the earnings/revenues/book value of the company, we reach a possible value for the equity of the firm.

Multiples may be divided in two broad groups: Equity-based multiples and Enterprise Value-based multiples.

The difference is simple: the first group uses the value of Equity as a reference, while the other uses the Enterprise Value.

Some of the most commonly used Equity-based ratios are the price/earnings ratio (P/E) and price/book value ratio (PBV). Regarding the second group the most widely used are: EV/Sales ratio and EV/EBITDA.

Regarding the usage of multiples, they have a tremendous advantage which is the fact that they can simply and quickly provide a value for firms.

However, there is a set of disadvantages regarding this approach.

First of all, the definition of the peer group is always subjective to inaccuracy since two firms are never equal. Plus, a peer group is normally a set of companies that comprises more than two firms, so the differences and inaccuracies are multiplied.

Moreover, not only the companies have differences, which biases the valuation from the beginning, but also the values attributed to each comparable firm, by the market, may contain errors itself (even if on average the market tends to price assets correctly), i.e. both

the choice of comparables and the fact that they may be under/overvalued will always have a “hidden” impact on our usage of relative valuation.

Let us now refer to what previous studies on this matter show.

According to Fernandez (2013d), “multiples almost always show a broad dispersion which is why valuations performed using multiples are highly debatable”. This leaves us with a notion that our relative valuation may not be as accurate as other possible methods. Nevertheless, that same author emphasizes the importance of multiples as a point of evaluation for when other methods are used.

Goedhart et al. (2005) suggest some basic principles to fulfill when working with multiples on valuation. First, it is suggested that ROIC and growth projections should be the key criteria to define a group of comparables. According to Damodaran (1994), choosing comparables based on industry can be quite misleading because even if firms are defined as of belonging to the same industry, they may be subject to an enormous variety of risk and have very different growth profiles.

Secondly, it is advised to use forward-looking multiples rather than those based on historical results. Moreover, the use of Enterprise-value multiples is also suggested.

Below, we describe the most widely used and recommended multiples:

II.3.1 P/E Ratio or PER

Price to Earnings Ratio relates the price of the share of a company with the earnings. Its intuition is quite simple (as the one for most multiples) and this is probably the most “popular” multiple used for valuation purposes. Summarizing, the multiple is as follows:

$$PER = \frac{\textit{Price per share}}{\textit{Earnings per share}}$$

This ratio may also be seen without a per share quantity, using the total Market Capitalization and Net Income, instead of the values presented in the formula.

There is another reason why PER is so widely used, other than simplicity. According to Damodaran (1994), PER is proxy for several important characteristics of firms such as growth and risk. However, Damodaran also mentions some problems when using PER. First

of all, this multiple does not work in a case where the firm has negative earnings. Thus, for cyclical firms this multiple cannot be used with reference to all periods.

II.3.2 Price to Book

Price to Book ratio provides a reliable measure for the value of the firm. Again, the multiple is simple:

$$\text{Price to Book} = \frac{\text{Market Value of the Firm}}{\text{Book value of the Firm}}$$

Damodaran (1994) states that book values provide a stable measure of each company that can be easily compared to the market value of that same firm, as it is a very simple benchmark. Another advantage that is also mentioned is that accounting standards are quite consistent which allows having a good comparison between different companies. However, that turns out to be also a disadvantage as any change in the accounting policies may lead to very misleading results.

Compared to PER, this multiple has the advantage of being able to work even if earnings are negative. Nevertheless, there are firm such as services firms in which the accounting values are far from representing the companies' true value.

Finally, if a firm has "a sustained string of negative earnings reports"²² the price to book ratio becomes negative.

II.3.3 EV/Sales

Once again, the concept that supports this multiple is quite simple:

$$\text{EV to Sales} = \frac{\text{Enterprise Value}}{\text{Total Sales}}$$

One of the main advantages of this multiple is that it can never be negative. This is clearly an advantage if compared to the previous two multiples.

Furthermore, as referred by Damodaran (1994) unlike the previous multiples accounting policies and other changes can hardly manipulate revenues and sales, meaning that it is quite a reliable source.

²² Damodaran (1994)

Nonetheless, there is another element that decreases the reliability of this multiple because sales may not change much even if profitability decreases a lot, since revenues and sales do not determine the success and value of a firm.

II.3.4 EV/EBITDA

“This multiple is one of the most widely used by analysts”²³.

The formula in this multiple, again, comes from the way it is called:

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

According to Fernandez²⁴ there are two big flaws of this multiple: 1- It does not consider working capital requirements. 2- It excludes capital investments.

Further, Moody's (2000) presents other critical fails of using EBITDA in these multiples. One of them is that EBITDA is not the same under different accounting standards; secondly EBITDA does not portray the quality of earnings.

Still, it is one of the most widely used because of its availability and we will be using it in our relative valuation.

²³ Fernandez (2013d)

²⁴ Fernandez (2013d)

II.4. Contingent Claim Valuation

Damodaran (1994) defines Contingent Claim “or option as an asset that pays off only under certain contingencies”. These methods of valuation assume that assets have similar characteristics to options. Of course, they are only effective in securities that share some characteristics of options such as: defined fixed life and dependence from an underlying asset.

Fernandez²⁵ suggests approaches like the Black Scholes model and Investment Option model.

Damodaran points out some of the advantages and disadvantages of using contingent claim valuation:²⁶ The main advantage is that these option models are very helpful in cases where no other method is effective.

Nevertheless, the disadvantages are the fact that inputs are sometimes very hard to obtain, it requires assets to be valued (“It is therefore an approach that is addendum to another valuation approach”²⁷) since it does not give the value of the firm but the value of one or some assets. Consequently, the last disadvantage leads to another disadvantage that relates to the possibility of double counting.

We will disregard this type of valuation because Mota-Engil does not really have any asset that has the option characteristics above described.

²⁵ Fernandez (2013a)

²⁶ <http://people.stern.nyu.edu/adamodar/pdfiles/eqnotes/VallIntro.pdf>

²⁷ <http://people.stern.nyu.edu/adamodar/pdfiles/eqnotes/VallIntro.pdf>

II.5. Summary

After presenting different kinds of valuation models, we now choose those that we will use to value Mota-Engil's share. Throughout this chapter we pointed out each method's advantages and disadvantages. Let us now formalize the models to use in our valuation.

First of all, we will use the Free Cash Flow to the Firm (FCFF) as our main valuation model. The reasons for this choice are presented in the subchapter of this model. In our opinion, the trade-off, among all the models, in terms of simplicity, data availability, applicability to Mota-Engil's characteristics and effectiveness tells us that FCFF is the most appropriate model to value Mota-Engil.

Additionally, we will complement our FCFF valuation with a Relative Valuation. The values obtained (through P/E, Price to Book, EV/EBITDA and EV/Sales multiples) will serve as an indicator and matter of comparability for our main model, following authors' suggestions regarding the importance of relative valuation.

III. Company Presentation

Mota-Engil is a Portuguese Group considered one of the 30th largest groups in the construction area in Europe.

Let us first provide you with the historical background of this group. It is important to refer that all the information below was provided by the Investor Relations Department, Mota-Engil institutional presentation²⁸, Group's website and 2012 and 2013 Annual Reports.

In 1946, more precisely on the 29th of June, Manuel António da Mota founded Mota & Companhia, in Amarante. A few weeks after the foundation of Mota & Companhia, a branch office was created in Angola. Until 1974, the company only operated in Angola. At first, the core business was related to the transformation of wood and only afterwards, around 1948, the company focused on the construction sector, mainly in public works.

The first big public work performed by Mota & Companhia was the International Airport of Luanda and it was the beginning of a successful path in the construction sector.

In 1954, the company Engil is renewed with the entrance of António Valadas Fernandes. Already inserted in the construction sector in Lisbon, in 1961, Engil gains its first contract outside Lisbon for the construction of a school in Castelo Branco.

Some years later, around 1975, Mota & Companhia started its internationalization and started projects in Namibia and Swaziland.

In the following year, Mota & Companhia started to operate in Portugal on the construction of a dam. This led the company to win huge public work projects and later becoming the third largest company in the country.

In 1987, Mota & Companhia, previously a limited company, became a joint-stock company and after a subsequent capital dispersion requested its presence in the stock market.

Engil, in 1987, became a group with participations in other firms and acquired several companies in the following years. This happened to face the evolution of demand and the need of diversification.

Consequently, Engil began the internationalization process (1989), starting in Angola, then Mozambique, Germany and Peru.

²⁸ http://www.mota-engil.pt/images/content/2561_2_G.pdf?&searchlink=true&Language=2

Mota & Companhia also opted to diversify its activities, entering in several markets including ceramics products, vehicles, real estate, sea transportation and road signs. In 1994, the consortium that included Mota & Companhia won the contest to build Vasco da Gama Bridge, which was a huge event in the history of the firm.

On the 23rd of July 1999, Mota launched a proposal to acquire all the shares of Engil and, already in 2000, the operation was concluded and Mota-Engil was born similar to how we know it today. With this merger, Mota-Engil was now the largest construction firm in Portugal.

At the same time, the new group was determined to diversify, especially in areas like transportation concession and Environment and Services. After several adjustments following the merger were made, the group defined its four independent business areas: Mota-Engil Engineering and Construction, Mota-Engil Environment and Services, Mota-Engil Concessions and Transports and Mota-Engil Housing and Tourism.

In 2004, there is reinforcement in the international backlog in Eastern Europe leading to the creation of Mota-Engil Polska, the fourth largest construction firm in Poland.

In the following year (2005), Mota-Engil enters PSI20, the Portuguese Stock Index after leading the candidates' list for several months. This event obviously led to an even higher visibility of the Group.

After introducing the history of the Group, let us now describe how the Group is organized nowadays.

For the Engineering and Construction business, Mota-Engil operates in infrastructures, building, real estate and other specific projects. Concerning the Environments & Services sector, Mota-Engil's projects includes waste management, ports and logistics, water management, energy and multiservice. Regarding Concession and Transports sector, it includes services related to Highways, Bridges, Railways and Subway. Finally, there is the Mining business where Mota-Engil covers Prospecting, Extraction and Exploitation activities.

Mota-Engil Group is the leader in the construction, port operations and waste management sectors in Portugal. Moreover, the group presently owns participations in more than 200 companies and is present in 3 continents including 20 countries.

Up until 2011, the Group's structure was organized by business area. However, starting in 2012, the Group decided to organize itself by geographies: Europe, Africa and Latin America.

III.1. Overall Performance

Let us now present the evolution of some financial indicators in previous years (2007-2013). The goal is to allow the reader to have an even better understanding on ME's situation.

Turnover:

Regarding turnover, we may say that ME has been able to continuously increase turnover despite the financial crisis. During this period, ME has always had a higher sales level than in the previous year.

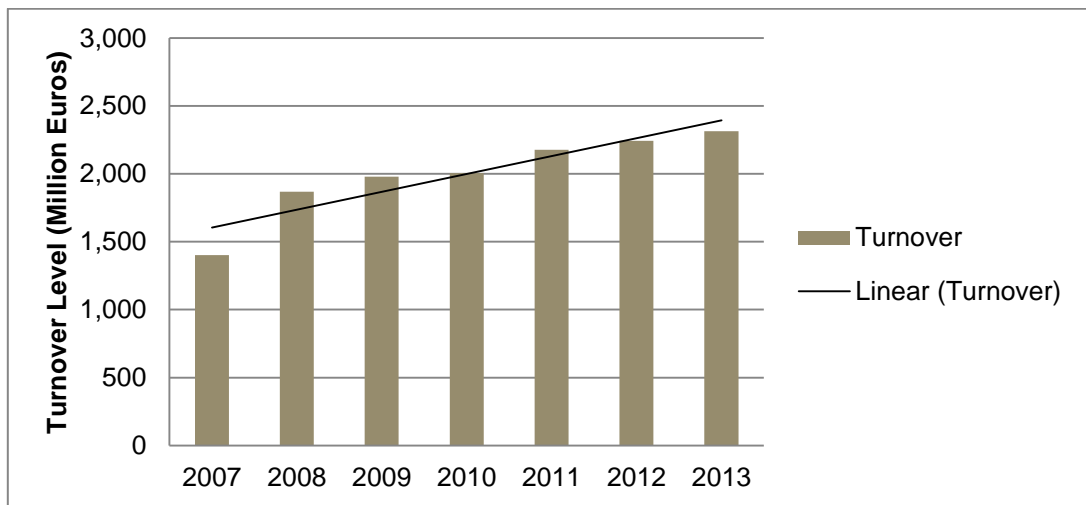


Chart 1 – Turnover evolution (2007 to 2013). Source: Annual Reports

As previously stated, ME changed the structure of the Group, in 2012, and decided to organize itself by region. Thus, ME only provides data by region starting in 2011.

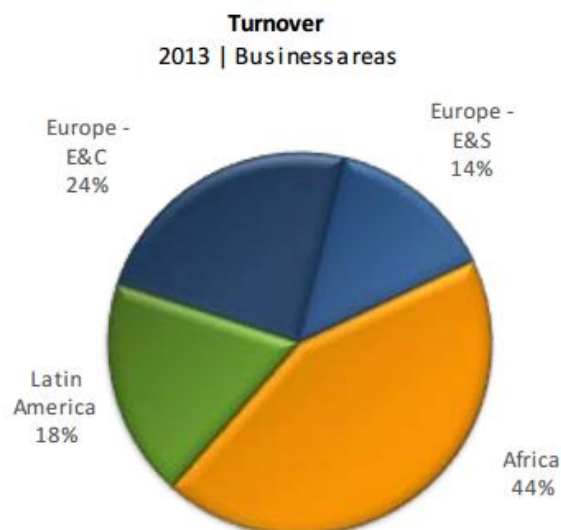


Chart 2 – Turnover by Business Area. Source: Annual Report 2013

From Chart 2, we can see that, in 2013, Africa has reached a similar sales level to the one in Europe. Plus, we can also observe that Latin America plays already an important role in terms of turnover for the Group. Hence, the projections are that Africa and Latin America will have higher sales than Europe in medium/long-term, as we show ahead in our work.

Backlog:

Following the trend of turnover, total backlog has been increasing and there have been changes regarding the weight of each regions value on total backlog. Again, we only had access to information on backlog by region for 2012 and 2013.

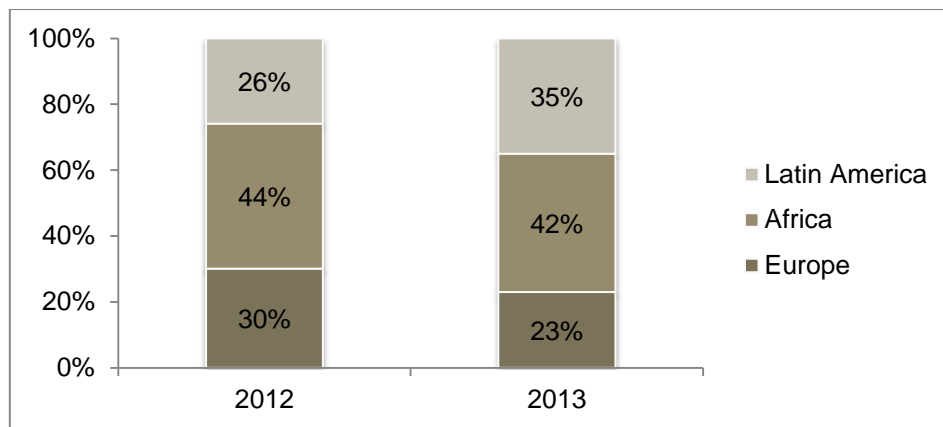


Chart 3 – Backlog distribution by region

Moreover, despite the changes on the distribution of total backlog by region, this total value has developed as follows:

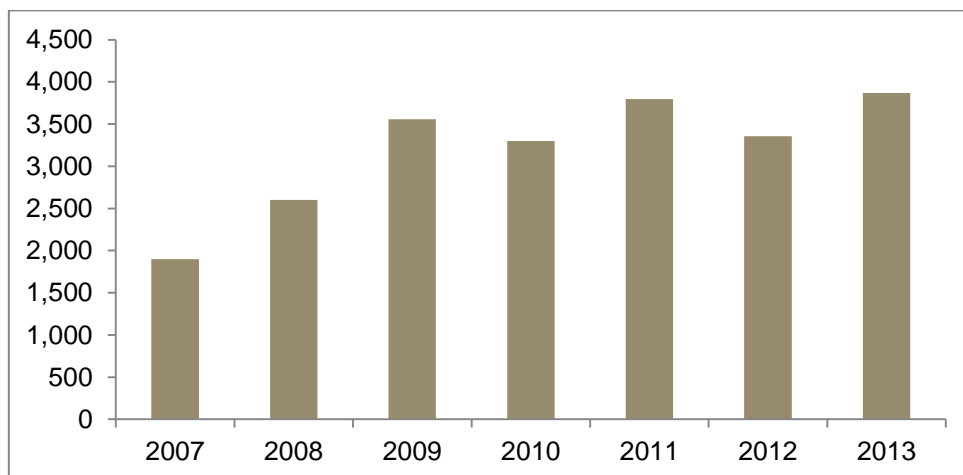


Chart 4 – Backlog evolution (in million euros)

Capital Structure

ME has had a constant leverage ratio. The main Group's activity (Engineering & Construction) requires a lot of investment and these firms are able to contract higher amounts of debt as they have many assets that may pose as collateral to the banks. Plus, ME's reputation in the market also allows for banks to fund the Group. There are many different opinions regarding the optimal debt level for each firm. However, there is no consensus and we have no receipt or fixed value for the optimal leverage ratio.

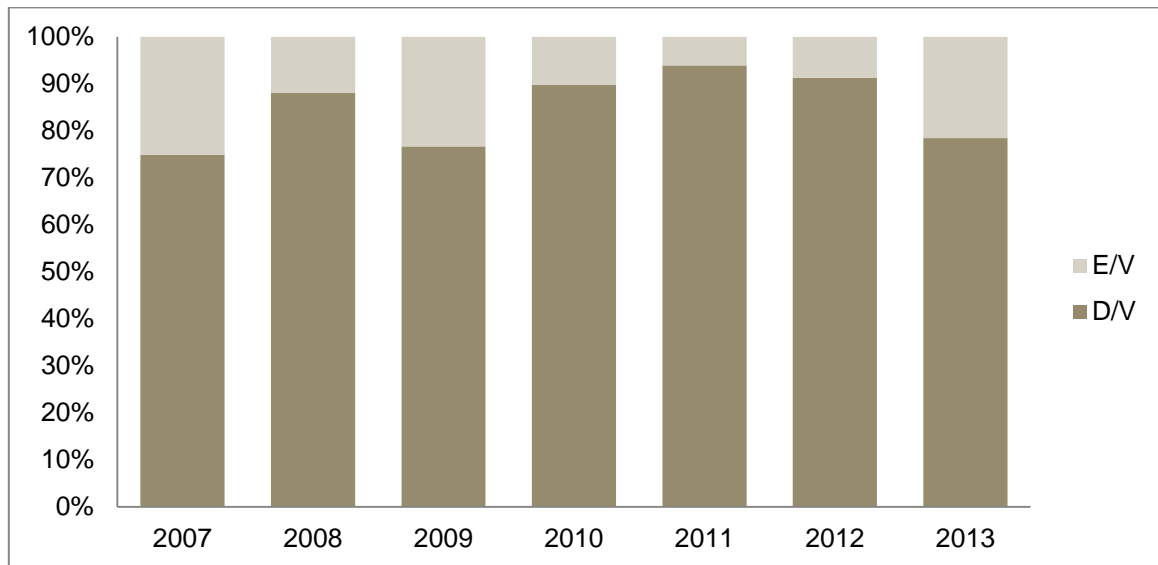


Chart 5 – Capital Structure from 2007 to 2013

Nonetheless, the fact that debt has been representing around 80% of total capital leads us to conclude that ME leverage ratio is quite high.

III.2. Performance in Stock Market:

Let us now give you a better perspective on how Mota-Engil's shares have been trading in the stock market (PSI 20 Index). We believe that a chart is the best way to provide such perspective:

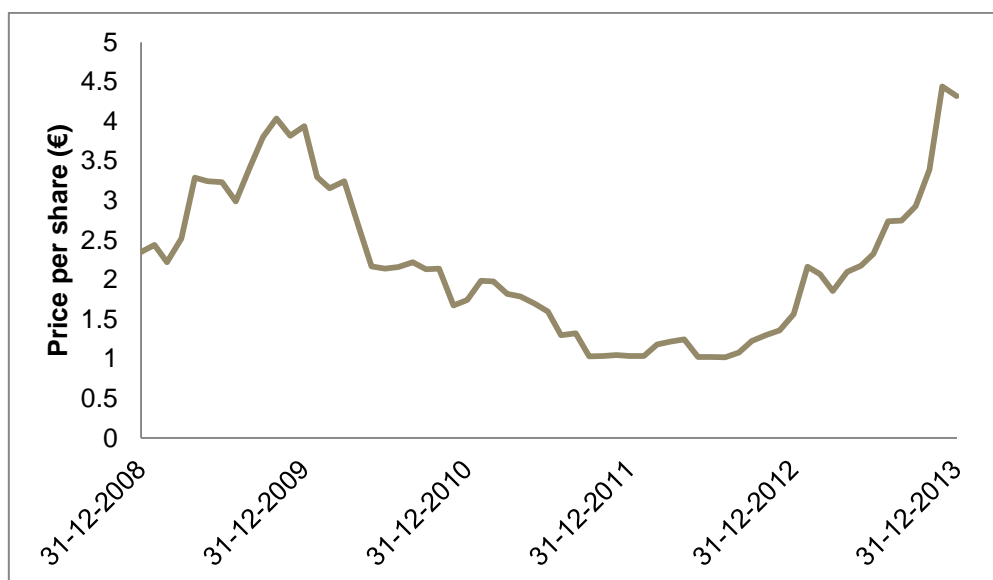


Chart 6 – Mota-Engil price per share in the last five years

From 2008 to 2013, it is possible to see a huge increase in the price of Mota Engil's shares (from 2.35€ on the 31st of December 2008 to 4.32€ on the 31st of December 2013).

Moreover, we can observe that the price evolution was far from linear, having a downwards trend from 2009 and 2011.

However, the price per share does not, by itself, show the performance of the stock. Taking that into account, we chose to compute the total shareholder return. For an investor that invested in Mota Engil on the 31st of December of 2008 we reached the following results:

Years Considered	5
Dividends (constant)	0.11
Price 31st December 2008	2.35
Price ex-div 12/05/2009	3.29
Price 31st December 2013	4.32
Capital Gain	31.3%
Dividend Gain	16.7%
Total Shareholder Return	48.0%

Box 1 – Total Shareholder Return

III.3. Europe

Mota-Engil operates in seven countries in Europe: Portugal, Spain, Ireland, Poland, Czech Republic, Slovakia and Hungary. During the year of 2013, there was a backlog of 905 million Euros; total turnover of 911 million Euros which generated an EBITDA level around 85.5 million Euros.

III.3.1. Portugal

Engineering & Construction

ME activities in Portugal have been suffering a lot with the financial crisis that affects Portugal and many countries in the world. This crisis led to a decrease in demand (as there are less construction projects) and backlog is being consumed at a fast rate. Since public work construction projects, the core business of the Group, have been quite stationary the firm has been investing in buildings (e.g. the construction of Zon Headquarters and EDP Headquarters and dams).

ME was able to somehow predict the financial crisis reallocating equipment and personnel to the emerging market it operates in (Africa and Latin America). This allowed having a huge cost reduction in the most affected geographies.

Environment & Services

In an attempt to diversify, ME invested in Suma Group (controlling around 61.5%). Suma is market leader in waste management. There has been a decrease in earnings associated with this activity. The main reason is the fact that remuneration is made by volume and with the crisis there was slightly less consumption and consequently less waste to manage.

Further, there has also been a reduction in prices. These contracts are valid for 5 to 7 years and every time they are renewed, prices go down since less Capital Expenditure is needed.

Another activity in the diversification by ME is Port Concessions. For that purpose, ME acquired Tertir becoming market leader in Containers Management sector. This leadership includes having concessions in all main ports in Portugal, except for one (Sines Port).

This Port Concession segment is the one growing the most in Portugal, considering all ME's activities.

Moreover, ME, as stated above, also operates in Water Management segment, as it has 6 concessions (maturing in 25 to 40 years) in Portugal with its participation at Indaqua. In these concessions, Indaqua collects and treats residual water.

III.3.2. Poland

At first, Poland was seen as a good opportunity to replace Portugal (as it had poor prospects in the medium term) because it was going to receive structural funds with the main goal of being used in highways' construction as there was a huge lack of such infrastructures.

The problem for ME was that there were many other construction firms thinking also that Poland was a good opportunity. As a consequence, many construction firms entered the Polish market and it became very hard for ME to seize the opportunities as they expected.

So, ME follows now a "Wait and See" strategy to decide whether it should continue its Construction activity in Poland or not, depending mostly on Poland receiving a second pack of structural funds or not.

Despite the Construction segment scenario, ME, again through its sub-group Suma, also provides Waste management services in Poland.

III.4. Africa

ME started operating in Angola. It developed knowledge and became known in the region, having internationalized its activities to countries nearby.

The intention of the Group is to replicate the business model, previously implemented in Portugal, in African countries.

In the end of 2013, Backlog amounted to 1,621 million Euros. Turnover value was 1,009 million Euros with EBITDA around 244 million Euros. EBITDA margins in Africa are higher than in the other two geographic segments together being around 24%.

ME has already expanded and operates in the following African countries: Angola, Malawi, Mozambique, South Africa, Cape Verde, Sao Tome and Principe, Zambia, Zimbabwe and Ghana.

One of the goals of ME for Africa is to take advantage of the recognition obtained through the large portfolio of successful construction projects and internationalize even further to Sub-Saharan countries.

As for Angola, in 2010, the business model was renewed being now based on a partnership with several local companies of which Sonangol is the main partner. Consequently, 49% of Mota-Engil Angola was sold to Sonangol, the public oil company in Angola.

On the other hand, the segment of Environment & Services has already been developed by ME. Waste management activities have been having an enormous growth. The activity started in few neighborhoods progressively achieving many others.

In Mozambique, the discovery of Gas and the exploitation of coal mines launched the development potential. ME operates in mining, construction, and owns concessions of roads (700km long) and waste management.

Finally, ME has been having more and more projects in Malawi. This country is as poor as Mozambique but is even smaller and has no shore. The first projects were mining projects. However, ME also diversified to Road and Dam construction and nowadays the Group holds a dominant position in the market.

III.5. Latin America

ME started operating in Latin America in 1998, more precisely in Peru.

Nowadays, ME provides its services in four countries: Peru, Mexico, Brazil and Colombia.

During 2013, total backlog amounted to 1,343 million Euros while Turnover reached a value of 426 million Euros leading to an EBITDA value of 36 million Euros.

Through a continuous investment, ME Peru became a well-known company operating in public work construction, buildings and mining.

Regarding Mexico, ME's activities in such country started with an Ascendi project (Road concession) and then diversified. Even though the activity in Mexico is still relatively small, the prospects are good (possible projects in railroad construction).

In Brazil, there were many difficulties mainly regarding portfolio building. An acquisition was made, being the targeted firm a company specialized in public work construction.

Moreover, the strategic main points for ME's development in Brazil are: 1- contact with the players that control the market, trying to be a subcontractor; 2- target medium size construction projects; 3- take advantage of the partnership with Vale do Rio Doce; 4- use funds from BNDES, the Brazilian bank for development.

ME is aware that the Group is still not large enough to compete with the biggest players, keeping a modest ambition in this country.

Finally, Colombia is a country where ME is developing its activity. Having a partnership with Odinsa, a large construction group in Colombia, there are good expectations in the near future.

IV. Company Valuation

As previously stated in the Literature Review chapter, we will reach Mota-Engil price per share, at the 31st of December 2013, using the Free Cash Flow to the Firm valuation model and Relative Valuation model (by means of multiples).

IV.1. Discounted Cash Flow Valuation: Free Cash Flow to the Firm

In this sub-chapter, we show the assumptions used in this model and present our target price for Mota-Engil (ME from here on) shares.

First of all, we used a period of 10 years (from 2014 to 2023) as the explicit period. In our opinion, this period corresponds to the period in which ME reaches a steady state and from which we predict the Group will grow at a constant rate in perpetuity. Thus, in 2023 we have our terminal value.

As identified in the Literature Review chapter, the computation of FCFF includes the following components:

EBIT
EBIT*(1-t)
- CAPEX
+ Depreciation and Amortization
- Change in Working Capital
=FCFF

Box 2 – FCFF components

Our goal was to achieve the values in the formula in order to reach FCFF.

For computing EBIT we followed the Income Statement items. In our case, we had:

Sales & services rendered
+ Other revenues
- Cost of goods sold, mat. Cons. & subcontractors
= Gross Profit
- Third-party suppliers & services
- Wages and salaries
+/- Other operating income/expenses
= EBITDA
- Depreciation & Amortization
- Provisions and impairment losses
= EBIT

Box 3 – EBIT computation

IV.1.1 Sales & services rendered

Let us start with Turnover assumptions. To reach our estimates for the growth of turnover of the Group we opted to assume growth rates for each geographic area where the Group operates.

Starting with historical values (values up to December 2013) and considering the expectations of IR department of ME (accounting for the backlog guaranteed and in the agenda for the next years), including the stabilization of European economies and a slight reduction in the huge African and Latin American growth we were able to reach the following growth rates (guaranteeing a reasonable value in 2023 as our terminal year):

	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Europe	-15%	-10%	-5%	-2%	0%	1%	1%	1%	1%	1%
Africa	20%	15%	12%	10%	8%	6%	5%	4%	4%	4%
Latin America	25%	18%	13%	10%	7%	5%	4%	4%	3%	3%

Table 1 – Growth rates estimated for Turnover, in the explicit period

The growth rates for Europe take into account the increase in the macroeconomic framework. We did not expect the next coming years to be the turning point, in terms of positive growth, as the value in 2013 was so negative. However, it is expected that in 2018 the turnover will not decrease as the economic situation in the countries where ME operates improves. In the following years, the expectation is that the steady state is reached. We are talking about a mature market where normally there are no huge opportunities for construction companies. Hence, we believe that a 1% growth in the terminal year is adequate.

As for African estimations, since there is a huge room for improvement in the sectors in which ME operates and adding the reputation that the company has had in Angola and has been increasing in other African countries the expectations are quite high.

ME has several projects in the agenda, regarding construction, mining, waste management, railways and highways throughout many African countries that may guarantee a continuous growth for the next years. In order to have somewhat conservative estimations, we projected a 4% growth in the last years of our explicit period with the goal of not overstating turnover even though we believed that value might be higher.

The scenario in Latin America is also quite optimistic. In 2013, ME has registered a growth in turnover of around 36%. Once again, there is a lot to be done in those countries and ME has a prestigious image from which many opportunities can be seized. For the next couple of years, ME will be working in several projects and “competing” to win many others. The

demand is very high and again for conservative reasons we predict 3% for the years preceding 2023.

Also, we chose to forecast Intragroup Eliminations Effect based on the average weight of Intragroup Eliminations in the total value from 2011 to 2013. We applied this not only with sales but also all the other Income Statement items.

Below find the projections for turnover in absolute terms:

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Europe	779	701	666	653	653	659	666	673	679	686
Africa	1,211	1,392	1,559	1,715	1,853	1,964	2,062	2,144	2,230	2,319
Latin America	533	629	710	781	836	878	913	949	978	1,007
Intragroup Elimination	-45	-48	-52	-56	-59	-62	-64	-67	-69	-71
Total	2,478	2,674	2,884	3,094	3,282	3,439	3,576	3,700	3,818	3,942

Table 2- Expected Turnover by geography

IV.1.2 Gross Profit

The assumptions used to reach 'Gross Profit' value relate to 'Other Revenues' and 'Cost of goods sold, mat. cons. & subcontractors'.

As for 'Other Revenues' we assumed it grows at the same rate of 'Sales & services rendered' since they are directly related.

Regarding the cost of goods sold, we used its weight, as a percentage of sales, to predict the values of this item for the explicit period.

Using 2012 and 2013 values, we were able to have a better perspective on the usual weight of cost of good sales on sales for each region.

In this topic it is worthwhile mentioning that we chose to keep very similar weights to the ones verified in 2013 for all regions: Europe, Africa and Latin America, as we saw no reason to assume such value would change.

% of Sales	2013	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Europe	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
Africa	41%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Latin America	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%

Table 3 – Percentage of Cost of goods sold and other similar costs on Sales, by region

Having shown our assumptions we were now in conditions of computing Gross Profit:

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Europe	378	340	323	316	316	320	323	326	329	333
Africa	749	861	964	1,061	1,145	1,214	1,275	1,326	1,379	1,434
Latin America	350	413	466	513	549	576	599	623	642	661
Intragroup Eliminations	-46	-46	-47	-49	-51	-53	-54	-56	-57	-59
Total	1,430	1,568	1,706	1,841	1,960	2,057	2,143	2,219	2,293	2,369

Table 4 – Gross Profit values

IV.1.3 EBITDA

As we show in Box 3, to reach the value of EBITDA we subtracted the values of 'Third-party suppliers and services', 'Wages and salaries' and add/subtract 'Other operating income/expense'.

First of all, we assumed 'Third-party suppliers & services' and 'Other operating income/(expense)' grew with sales.

Secondly, we used the direct relation between the value of 'Wages and salaries' the number of employees working in ME to project the 'Wages and salaries' values in the explicit period. Firstly, we linearly regressed historical headcount against historical sales (using data from 2007 to 2013), being afterwards able to project headcount values for the explicit period. Again, using linear regression, we reached the linear function between the historical values of Headcount and 'Wages and salaries', which using the values of headcount projected, provided us with the values of 'Wages and salaries' for the explicit period (visit Appendix I for further detail on the methodology used).

The projected values for the items above explained were as follows:

		Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Europe	Third-party suppliers & services		-166	-149	-142	-139	-139	-140	-142	-143	-145	-146
	Wages and salaries		-144	-132	-127	-126	-127	-129	-131	-133	-135	-137
	Other operating income/expenses		11	9	9	9	9	9	9	9	9	9
Africa	Third-party suppliers & services		-260	-299	-335	-369	-398	-422	-443	-461	-479	-499
	Wages and salaries		-224	-261	-297	-330	-360	-384	-406	-424	-443	-462
	Other operating income/expenses		-9	-11	-12	-13	-14	-15	-16	-17	-17	-18
Latin America	Third-party suppliers & services		-171	-202	-228	-251	-268	-282	-293	-305	-314	-323
	Wages and salaries		-98	-118	-135	-150	-163	-172	-180	-188	-194	-201
	Other operating income/expenses		-2	-3	-3	-3	-4	-4	-4	-4	-4	-4

Table 5 – Projected values for the explicit period

Thus, EBITDA values were as follows:

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Europe	78	68	63	60	59	59	59	59	59	59
Africa	255	289	320	348	372	392	410	424	439	455
Latin America	78	90	100	108	114	119	123	127	130	133
Intragroup Effect	19	26	32	37	40	43	45	47	49	51
Total	430	474	515	553	586	613	636	657	677	698

Table 6 – Projected EBITDA values for the explicit period

IV.1.4 EBIT

Starting from EBITDA values shown in Table 6, we reached EBIT values by deducting 'Depreciation & Amortization' and 'Provision and impairment losses'.

As for 'Depreciation and amortization', we show the assumptions and values for the group ahead in sub-chapter IV.1.6 (please check such sub-chapter to understand the rationale behind our 'Depreciation and Amortization' values). Here we detail the distribution of such costs by region as we need it to reach EBIT by region. We did it based on the weight of the EBITDA of each region on total EBITDA. Hence, the following results were achieved:

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Europe	21	18	17	17	17	18	20	21	22	23
Africa	69	78	88	98	108	122	136	150	164	179
Latin America	21	24	27	30	33	37	41	45	49	52
Intragroup Effect	1	2	2	2	2	2	3	3	3	3
Total	112	123	134	147	160	180	199	219	238	257

Table 7 – Depreciation and Amortization values by Region

Regarding provisions and impairment losses, we could not find direct links between this item and other Income Statement items. Due to the lack of information and since it is quite hard to predict the values of provision and impairment losses with no basis for estimation, we decided to assume that these values would be equal to a constant percentage of Sales for the explicit period. The constant percentage we used corresponds to the average of such percentage from 2007 to 2013. The average amounts to 0.9% over Sales.

Million Euros	2007	2008	2009	2010	2011	2012	2013	
Prov. & Imp. Losses	9	15	6	19	35	25	17	
Sales	1,402	1,869	1,979	2,005	2,176	2,243	2,314	Average
Provision %	0.7%	0.8%	0.3%	1.0%	1.6%	1.1%	0.7%	0.9%

Table 8 – Average value of historical percentage of provisions over Sales

Taking this result into account, the values for 'Provisions and Impairment Losses' for each region were computed (Intragroup effect not shown because its impact is not significant – less than 0.5 Million Euros in the explicit period):

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Europe	7	6	6	6	6	6	6	6	6	6
Africa	11	12	14	15	16	17	18	19	20	21
Latin America	5	6	6	7	7	8	8	8	9	9
Total	22	24	26	28	30	31	32	34	35	36

Table 9 – Values of Provisions and Impairment Losses by region

Finally, EBIT values could be computed:

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Europe	50	44	40	38	36	35	33	32	31	30
Africa	176	199	218	235	248	253	255	255	255	256
Latin America	52	60	66	71	74	74	74	73	72	72
Intragroup Effect	17	25	30	35	38	40	43	44	46	48
Total	295	327	354	378	396	402	405	405	404	405

Table 10 – EBIT values by region and total values

IV.1.5 Capital Expenditure (CAPEX)

Our first assumption regarding Capital Expenditure related to the proportionality between this item and Total Sales. Since ME's activity is asset-intensive, a lot of Capital Expenditure is required for the Group to support and generate Sales, from which we infer such relation between Sales and CAPEX.

In ME's specific case, Intangible Assets are not as relevant to the group's activity. So, as there was no indication that this item was expected to grow differently, we assumed that the Capital Expenditure on Intangible Assets would be equal to the one verified in 2013, for the whole explicit period.

Moving now to the Capital Expenditure on Tangible Assets, we did not assume a constant CAPEX value. We chose to assume that CAPEX value would be equal to the average value verified in the period between 2007 and 2013.

By analyzing the previous years' CAPEX weight on sales, we could see that the average value was around 6%.

2007	2008	2009	2010	2011	2012	2013	Average
12%	12%	16%	7%	7%	6%	6%	6%

Table 11 – Capital Expenditure percentage over Sales.

As previously stated, we used the average value of CAPEX weight on Sales from previous years as our target level of CAPEX in during our explicit period.

	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
% CAPEX on Sales	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%

Table 12 – CAPEX percentage over Sales during explicit period

Using the percentages shown above, we were able to compute our CAPEX values for the explicit period.

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Capital Expenditure	161	173	186	200	212	222	231	239	246	254

Table 13 – Capital Expenditure values for the explicit period

IV.1.6 Depreciation and Amortization

Opposite to CAPEX, we find Depreciation and Amortization (D&A from now on). If on one hand, CAPEX contributed to an increase in the value of assets, D&A correspond exactly to a decrease in that same value.

Consequently, the first thing we note regarding this item is that in our terminal value CAPEX had to have the same value of D&A. The reason behind this assumption is the fact that as we assume a constant growth in the perpetuity based on our terminal value, if CAPEX had, for example, a higher value than D&A, then we would be assuming that assets would grow until infinity, which we do not find reasonable.

As for computing the values of D&A to all the other years of the explicit period, we assumed a constant rate of depreciation and a constant rate of amortization equal to the average of previous years:

Million Euros	2009	2010	2011	2012	2013	
Depreciation	67	74	79	83	95	
Gross value of Tangible assets	1,107	1,145	1,179	1,289	1,443	Average
Depreciation rate	6.1%	6.5%	6.7%	6.5%	6.6%	6.5%

Table 14 – Average Depreciation Rate from 2009 to 2013

Million Euros	2009	2010	2011	2012	2013	
Amortization	10	12	12	8	8	
Gross value of Intangible assets	300	336	394	193	207	Average
Amortization rate	3.4%	3.6%	3.1%	4.2%	3.8%	3.6%

Table 15 – Average Amortization Rate from 2009 to 2013

By applying the depreciation and amortization rates to the gross value of tangible and intangible assets, respectively, the values of D&A were reached.

It is important to note that the gross values below already include the values of CAPEX (above shown) and that for the last years of the explicit period we assumed an extraordinary increase in depreciation expense so that the depreciation level assumed for the terminal year would not be outfitted. Concluding:

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Depreciation & Amortization	112	123	134	147	160	180	199	219	238	254

Table 16 – Depreciation and Amortization values for the explicit period

IV.1.7 Change in Working Capital

Let us start by stating the balance sheet items we considered in the computation of Working Capital: 'Non-current Customers & other debtors', 'Inventories', 'Current Customers', 'Current Other debtors', 'Other current assets', 'Non-current Sundry creditors', 'Other non-current liabilities', 'Suppliers', 'Current Sundry creditors' and 'Other current liabilities'.

Deducting items referring to liabilities to the sum of the items considered as assets, we reached the value of Working Capital.

Moreover, our Working Capital estimations were based on its direct relation with sales. Even though some items (Liabilities) are usually dependent on Cost of goods sold instead of Sales, we considered that Sales were a good driver for such items as we computed cost of goods sold growing with sales.

Being so, we computed the average percentage that Working Capital represented on total sales and applied it to the sales level of the years of the explicit period to reach the Working Capital values for that same period.

Million Euros	2007	2008	2009	2010	2011	2012	2013	
Working Capital	138	68	93	82	136	100	299	
Sales	1,402	1,869	1,979	2,005	2,176	2,243	2,314	Average
% of Working Capital	9.9%	3.6%	4.7%	4.1%	6.2%	4.4%	12.9%	6.6%

Table 17 – Average Percentage of Working Capital in Sales and Revenues

Having the average percentage, we were in conditions of calculating the values of Working Capital and, consequently, Change in Working Capital, for the explicit period:

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Working Capital	162	175	189	203	215	226	235	243	250	258
Change in Working Capital	-137	13	14	14	12	10	9	8	8	8

Table 18 – Changes in Working Capital values for the explicit period

IV.1.8 Tax rate

For reaching the tax rate to use in our valuation, we used the values predicted in tax reform for 2014. It is stated that the goal focus on a continuous reduction of tax rate for companies.

In the table below, we show the values assumed for the tax rate during our work, in accordance with the already mentioned tax reform²⁹:

	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Income tax	23%	21%	18%	18%	18%	18%	18%	18%	18%	18%

Table 19 – Tax rate according to 2014 tax reform

IV.1.9 Free Cash Flow to the Firm

In the previous subchapters we have been gathering data needed to compute FCFF. Having all the values, we were in condition to have FCFF values:

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
EBIT*(1-t)	227	258	290	310	325	330	332	332	332	332
- CAPEX	-161	-173	-186	-200	-212	-222	-231	-239	-246	-254
+ Depreciation and Amortization	111	121	133	145	158	177	197	216	235	254
- Change in Working Capital	137	-13	-14	-14	-12	-10	-9	-8	-8	-8
= FCFF	314	194	223	242	259	275	289	301	312	324

Table 20 – Free Cash Flow to the Firm values for explicit period

With these results, we had a very important part of our model completed. However, now we needed to compute the Weighted Average Cost of Capital (WACC), since according to our model that is the rate at which we discount FCFF to reach the value of a firm.

IV.1.10 Risk-free Rate

Regarding risk-free rate, we used the yield of 10-year German Bund. At 31st of December 2013, the yield was 1.93%.

IV.1.11 Beta

We chose to use Beta computed by Bloomberg regarding ME, which, using monthly prices in the period from 31st of December 2008 and 31st of December 2013, has a value of 1.564.

²⁹ http://www.pwc.pt/pt/eventos/imagens/2013/pwc_o_essencial_do_oe2014.pdf

IV.1.12 Country-Risk Premium and Market-Risk Premium

Having the Risk-free rate and Beta we were only missing MRP and CRP in order to have all the elements of Cost of equity.

For Market-Risk Premium we used Fernandez³⁰ values and regarding Country Risk Premium we used Damodaran's³¹ values. It is important to mention that for Africa's values we used Angola as representative, because Angola is where Mota-Engil operates the most in Africa and is the country from which there is more available and reliable data.

Both values were weighted taking into account each countries/region percentage of EBITDA in Total EBITDA of 2013:

		% of Total EBITDA	CRP	MRP
Europe		39.0%	5.40%	6.10%
Latin America	Peru	5.4%	3.00%	6.50%
	Brazil	4.5%	3.00%	6.50%
	Mexico	4.5%	2.55%	6.70%
	Colombia	3.6%	3.38%	8.40%
Africa		42.9%	11.15%	8.50%

Table 21 – CRP, MRP by region and country

IV.1.13 Cost of Equity

Finally, we had all the elements needed to compute the cost of equity for Mota-Engil. Multiplying Beta by the weighted MRP and adding both CRP (weighted as well) and R_f , we reached a value for K_e of 20.74%.

IV.1.14 Cost of Debt

Regarding the cost of debt, we chose to compute the Yield-to-Maturity (YTM) of bonds issued by ME as we believe it shows the market value of ME's cost of debt.

Knowing that the price of the bonds, issued in March 2013, as of the 31st of December 2013 was 106.1% of the issue price, the maturity of the bonds was three years and the coupon rate fixed at 6.85%, we obtained a YTM value (and thus the value of cost of debt) of 4.6%.

³⁰ http://www.netcoag.com/archivos/pablo_fernandez_mrp2013.pdf

³¹ <http://www.stern.nyu.edu/~adamodar/pc/datasets/ctrypremJune13.xls>

IV.1.15 Leverage

To finish WACC computation we were missing the leverage ratio, i.e. the weight of Debt on total Enterprise Value.

In order to know the Leverage Ratio we would need to know the market value of both Debt and Equity.

As for the market value of Equity (which was actually the main goal of our valuation) we chose to use the current share price and multiply it by the number of shares outstanding:

Share Price (€)	4.32
Nº of Shares	204,635,695
Equity Market Value (€)	884,026,202

Table 22 – Equity Market value

Regarding the cost of debt we followed Damodaran's suggestion explained in Literature Review chapter.

Below, we present ME Debt structure as of December 2013:

Million Euros	Maturity (Years)				Total
	1	2	4	7.5	
Non-Convertible Bonds	10	10	322	0	342
Bank Loans	211	74	72	10	367
Overdraft facilities	88	0	0	0	88
Guaranteed accounts	244	0	0	0	244
Commercial paper issues	27	150	89	15	281
Other loans	3	2	5	0	10
Total	584	235	487	25	1,331

Table 23 – Debt details

From data in Table 23, we obtained a weighted average maturity of 2.4 years and consequently, using the interest expense predicted, we computed the Market Value of Debt equal to 1,621,460,626 Euros.

Hence, our leverage ratio could be achieved:

Debt Market Value	1,621,460,626.1
Equity Market Value	884,026,202.4
Firm Market Value	2,505,486,828.5
D/V	64.7%
E/V	35.3%

Table 24 – Leverage ratio computation

IV.1.16 Weighted Average Cost of Capital

Following the formula previously referred in Literature Review, we achieved a WACC value of 9.56%. The values of the components of WACC have been presented in the sub-chapters above. Below is the summary of all WACC elements and its computation:

Cost of Debt	4.63%
Cost of Debt after taxes	3.47%
D/V	64.7%
Risk Free Rate	1.93%
Beta	1.56
Weighted MRP	7.28%
Weighted CRP	7.43%
Cost of Equity	20.74%
E/V	35.3%
WACC	9.56%

Table 25 – WACC value computation

IV.1.17 Growth in Perpetuity

Previously, we have stated that in 2023 we will have our terminal value that assumes a constant growth rate in perpetuity.

We used IMF³² estimations for GDP growth by country and reached the weighted average considering the percentage of each country/region in Total EBITDA of 2013:

		% of Total EBITDA 2013	GDP growth 2013
Europe		39.0%	-2.3%
Latin America	Peru	5.4%	6.27%
	Brazil	4.5%	3.01%
	Mexico	4.5%	3.39%
	Colombia	3.6%	4%
Africa		42.9%	6.18%
	Weighted Average		2.53%

Table 26 – Weighted Average Forecasted GDP Growth

As shown above, we computed a weighted average GDP growth for the countries in which the company operates in and we assume in our DCF valuation that the company shall grow with the GDP. Hence, the value of growth in perpetuity for Mota-Engil is 2.53%.

³² http://www.imf.org/external/pubs/ft/weo/2013/01/c2/fig2_1.csv

IV.1.18 Terminal Value

Knowing the FCFF in 2023, the value of WACC and the growth rate in perpetuity we could compute our Terminal Value. The value achieved was around 4,600,875,124 Euros.

IV.1.19 Enterprise Value

Let us now present the Enterprise Value obtained with our FCFF model:

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
FCFF (T. value in 2023)	314	194	223	242	259	275	289	301	312	4,601
Discounting Factor	91%	83%	76%	69%	63%	58%	53%	48%	44%	40%
Discounted FCFF	287	161	170	168	164	159	152	145	137	1,846
Firm Value	3,388.61									

Table 27 – FCFF results and Enterprise Value achieved

However, our goal was not completed yet. Having the Firm Value, there were still certain elements to add or subtract, in order to reach the value of Equity and consequently the price per share.

IV.1.20 Minority Interests

Minority interests had to be computed and subtracted to Enterprise value, since those do not refer to Group Mota-Engil equity.

We assumed Mota-Engil Angola was the main company driving the growth of Minority interests during our explicit period. To compute the value of earnings by Mota-Engil Angola, we used its 51% participation on Mota-Engil operation in Angola and assumed that Angola accounted for 50% of ME's earnings in Africa, as stated in the Annual Report.

Moreover, we used the value as of the end of 2013 reported in the Annual Report: 201,731,000 Euros.

IV.1.21 Martifer, Ascendi, Indaqua and Financial Investments

Opposite to Minority Interests, ME has participations in other companies which are outside the scope of consolidation and that, consequently, were not considered in our valuation so far.

Hence, here we had the need of reaching the value of each of these participated companies in order to add them to the value of ME alone.

Regarding Martifer, since the company is listed in the stock market we simply computed the market value by multiplying the price per share by the number of shares outstanding. On the 31st of December 2013, Martifer's shares price was 0.69 with 100,000,000 shares outstanding, reaching a market value of 68 Million Euros. As ME holds a 37.5% participation in Martifer, the value we considered was 25,875,000 Euros.

For Ascendi, Indaqua and Financial Investments there is not much information available. Therefore, our first choice was to use book values.

As for Indaqua, we used the value relative to the financial investment by ME in this subgroup according to ME Annual Report 2013, which was 25,080,000 Euros.

Since Ascendi's activity is based on Concessions, its Balance Sheet value is depreciated and so, we chose to value ME participation value by the amount invested in the company by ME. According to a company presentation, ME invested around 315 Million Euros, being that the value we considered in our computation.

For Financial Investments we used book values, which in our model are assumed constant as no information indicates otherwise (IR department of ME does not predict any relevant changes in such items).

Further, we use the value of the balance sheet items 'Financial Investments under the Equity method', 'Available for sale financial assets', 'Derivative Financial Instruments' and 'Investment properties' and deduct 'Provisions' and the participations above considered (Martifer, Ascendi and Indaqua), preventing from double counting.

Thus, the value reached was 92,535,000 Euros.

IV.1.22 Price per Share

For computing the price per share, we used the number of outstanding shares already stated throughout our work: 204,635,695 shares.

Finally, we had all the elements needed for reaching the share price of ME:

Firm Value	3,388,613,509
- Debt	1,621,460,626
+Martifer	25,875,000
+Ascendi	315,000,000
+Financial Investments	92,535,000
+Indaqua	25,080,000
- Minority Interest	201,731,000
Equity Value	1,973,751,883
Target Price per share	9.65

Table 28 – Target Price per share computation

We conclude this Free Cash Flow to the Firm subchapter with our final result for the target price of each share of ME with a value of 9.65€.

IV.2. Relative Valuation

IV.2.1. Peer Group Definition

As described in the Company presentation chapter, Group Mota-Engil shows a combination of characteristics that makes of it kind of a unique group, mainly due to its exposure to several emerging markets risk.

Hence, choosing a Peer group is not an easy task and some differences will have to be accepted.

According to Financial Times³³ and EuroFinancials³⁴ we were able to have a better perspective on the companies considered similar to Mota-Engil:

Financial Times	Euro Financials
Abengoa	FCC
Duro Felguera	Gamuda Bhd
Elecnor	Carillion PLC
Fluidra	China Gezhouba
FCC	Ferrovial S.A.
Obrascon Huarte Lain (OHL)	ACC
Sacyr	
Tecnidas Reunidas	
Teixeira Duarte	

Table 29 – Peer group by Financial Times and Euro Financials

However, those sources use different approaches regarding the definition of the peer group.

Let us define some characteristics that we stressed and that we made sure every single company in the peer group had to have.

First of all we defined the industry sector as priority selection criteria, meaning that we considered only companies in construction and engineering sector (which is Mota-Engil core business).

Moreover, the country of the group also helped us narrowing our possible peers, since we only considered firms of countries in similar economic conditions of the ones registered in Portugal.

³³ <http://markets.ft.com/research/Markets/Tearsheets/Business-profile?s=EGL:LIS>

³⁴ <http://www.eurofinancials.com/en/market%20valuation.Mota%20Engil.30035EP.html>

Although, as previously written, Mota-Engil operates in many countries other than Portugal we assumed that the Portuguese economic conditions had a very strong impact on Mota-Engil performance.

Plus, we found it very difficult to find a company that was exposed to all the markets where Mota-Engil operates.

Thus, companies in Portugal, Spain, Italy and Greece would be considered.

The list on Damodaran website³⁵ regarding individual company information with reference to 2013 helped us, by applying the criteria above, to reach a list of peers.

However, we still had a large number of companies, with many different characteristics.

Consequently, we decided to include expected performance as a condition to build our peer group. This condition related to the expected growth rate in earnings per share for the next 5 years, as it seemed essential for us to gather companies not only with past and present similar characteristics but also with similar future expectations.

Based on all the criteria above described we were able to reach a peer group that included six companies (excluding Mota-Engil).

Below, we present the peer group selected:

Peer Group Companies	Industry	Country	Growth EPS (5 Years)	ROIC	D/V
Obrascon Huarte Lain SA	Engineering	Spain	14.70%	0.69%	90%
Abengoa SA	Engineering	Spain	17.40%	8.33%	77%
Astaldi SpA	Engineering	Italy	12.50%	8.66%	71%
Elecnor SA	Engineering	Spain	10.70%	0.81%	62%
Ferrovial, S.A.	Engineering	Spain	7.35%	-5.64%	49%
Fluidra, S.A.	Engineering	Spain	19.30%	-3.69%	54%

Table 30 – Peer group of ME considered in our valuation

Crosschecking our Peer Group with the ones presented in Table 29 by reliable sources, we could conclude that only one (Astaldi SpA) is not included, which provided us with confidence on our Peer group.

³⁵ <http://pages.stern.nyu.edu/~%20adamodar/>

IV.2.2. Multiples

Gathering data from the previously mentioned Damodaran list and complementing them with data from Bloomberg, we were able to build the following table:

	EV/EBITDA	EV/Sales	Estimated P/E	Price to Book
Obrascon Huarte Lain SA	7.06	1.78	9.92	1.33
Abengoa SA	10.11	1.31	11.72	0.22
Astaldi SpA	5.73	0.59	8.74	1.35
Elecnor SA	10.26	1.13	9.05	1.87
Ferrovial, S.A.	13.85	1.88	24.87	1.80
Fluidra, S.A.	8.34	0.84	57.87	1.02
Average	9.23	1.26	20.36	1.27

Table 31 – Value of Multiples for Peer Group

By applying the average value of each multiple to its corresponding element (EBITDA, Sales, Earnings and Book value), we reached either Enterprise value or Price per Share.

In the case of EV/EBITDA and EV/Sales, after having the Enterprise value we deducted and added the same components as in our Discounted Cash Flow Valuation ending up having the price per share.

Finally, we had the price per share according to all multiples chosen:

Price per Share based on Price to Book	2.21
Price per Share based on PE	5.03
Price per Share based on EV/EBITDA	9.24
Price per Share based on EV/Sales	7.07
Average	5.89

Table 32 – Price per share based on multiples chosen

From the table above, we can see that the value achieved that is closest to our FCFF valuation is using EV/EBITDA. As previously stated, we performed this relative valuation to try to complement our main valuation model (FCFF).

The prices reached by this valuation model posed as a mere indication of other possible approaches and prices of ME's shares.

Thus, we conclude that only one multiple in our relative valuation supports (or is close) to our target price for ME's shares and we disregard the results achieved through other multiples.

V. Investment Bank results - Comparison

In this chapter we compare our results with the ones achieved by Caixa BI, the Investment Bank of Caixa Geral de Depósitos Group as of 04/12/2013.

Summarizing the essential elements in both valuations, we were able to produce the following table:

	Our valuation	Caixa BI Valuation
Enterprise Value	3,389	1447
- Debt	1,621	1053
+Martifer	26	31
+Ascendi	315	369
+Financial Investments	93	210
+Indaqua	25	
- Minority Interest	202	133
= Equity Value	1,974	871
/ Number of shares	205	194
= Target Price	9.65	4.5

Table 34 – Comparison of our valuation with Caixa BI valuation

As it is possible to see in Table 34, there is a relevant difference in the target price for Mota-Engil's shares between our valuation and the one reached by Caixa BI (Caixa from here on).

The target price in our valuation is 215% the price achieved by Caixa. In the following paragraphs we analyse the reasons behind such difference.

The most significant difference is the one between the Enterprise Values in the table. Being the Enterprise Value the starting point of both valuations and having such a large difference, it was easy to understand that such difference was the main driver for the difference in target prices.

While in our Discounted Cash-Flow model we summed EBIT values from Europe, Latin America and Africa and continued the rest of the approach considering the group as a whole, Caixa performed the discounted cash-flow by region. This led Caixa to make assumptions separately for computing three WACC values while we computed a single WACC.

Our WACC value was 9.56%, while Caixa had a WACC for Europe of 7.5% and equal WACC values for Africa and Latina America of 12.28%. One of the major differences was the fact that the risk-free rate used by Caixa BI referred to an estimated risk-free rate for

each region, while we used the 10-year German Bund yield (because in our opinion that is what represents the closest to risk-free).

Furthermore, by using risk-free rate based on German Bunds we decided to include both Country Risk Premium and Market Risk Premium, to adjust for both market and country factors, in our cost of equity computation. On the other hand, Caixa BI uses a risk-free rate adjusted to each region and includes only Market Risk Premium.

In an attempt to better compare WACC values used in both valuations, we computed a weighted average of WACC values for each region provided by Caixa based on the percentage of each region in total Enterprise Value, reaching a WACC value of 11.5%. Since the WACC value used by Caixa is significantly higher than the one used in our work, it certainly influences Enterprise Value to be lower for Caixa.

Apart from discount rates, which explain part of this big difference in the Enterprise Values, we believe that growth expectations were also to blame for such difference.

In fact, by comparing the assumptions between both valuations we could conclude that in our valuation revenues grow at a higher rate and EBITDA margins are high, which of course contribute to a higher FCFF and consequently higher Enterprise Value.

So, we may conclude that Caixa's expectations are quite conservative if compared to ours.

Combining both the differences in assumptions on discount rates and on Income Statement items projection, we were able to understand the discrepancy between the Enterprise Values achieved.

Considering the value of Mota-Engil's stake on Martifer there is a difference that can be easily justified by the reference day of each valuation. If, on one hand, the price for Martifer's shares on the 30th of December 2013 was 0.69 Euros, on the other, on the 4th of December 2013, the price used by Caixa for Martifer was 0.83 Euros per share.

Moreover, Ascendi Group is also valued differently. We have previously explained that we used the amount invested by Mota-Engil on such group, while Caixa reaches a higher value using a multiples valuation.

Finally, Caixa included Indaqua under 'Associates and Financial Investments' while we valued it alone. Moreover, the difference between the sum of our Indaqua and Financial Investments and the value of Caixa was quite significant (almost 100 million Euros).

However, the fact that our valuation of Financial Investments and Indaqua was lower than Caixa's was not enough to reduce our Equity Value to a value similar to Caixa's.

Furthermore, the number of shares also differed, as in our valuation treasury shares are not subtracted to the total outstanding shares. Caixa, on the other hand, opted not to consider treasury shares. Just like the value of Financial Investments, the fact that the number of shares used by us was higher than the one by Caixa also led to a lower Equity value but still much higher than Caixa's, due to the main differences registered when reaching the Enterprise Value.

Summing up, the most relevant aspects differing between both valuations were the difference in the assumptions on revenues growth and EBITDA margins and the number of years considered in the DCF valuation. The fact that our assumptions were much more optimistic had an even higher impact as we used a 10-year explicit period (compared to a period of four years used by Caixa).

Hence, our Enterprise Value was quite higher than the one by Caixa. This led the target price to be also higher. The price would have been even higher if Financial Investments and Indaqua had been valued as in the approach by Caixa and also if the number of shares was the same as Caixa used. Apart from that there were no huge differences (in the opposite direction) during the rest of the valuation processes, leaving our price to represent 215% of the one achieved by Caixa and 223% the price traded in the market as of 31st of December 2013.

VI. Sensitivity Analysis

Our main goal with this sensitivity analysis is to understand the point at which our WACC and Growth in perpetuity influence the price of each share of ME and the impact of changes in such variables would have in our target price:

		Growth in Perpetuity				
		-200 b.p	-100 b.p	2.53%	+100 b.p	+200 b.p
WACC values	-200 b.p	12.14	13.94	16.45	20.20	26.42
	-100 b.p	9.61	10.84	12.47	14.76	18.18
	9.56%	7.65	8.52	9.65	11.14	13.23
	+100 b.p	6.10	6.74	7.53	8.56	9.92
	+200 b.p	4.84	5.31	5.90	6.63	7.56

Table 35 – ME price per share changing with WACC and Growth in Perpetuity values

From the table above, we can conclude that changing WACC has a greater impact in the price per share than the same change in Growth in perpetuity, meaning that the target price is more sensitive to changes in WACC.

Furthermore, we can see that our target price would be closer to the share price in the market on the 31st of December 2013 (4.32€ per share) if our WACC value had a higher value and the growth in perpetuity a lower value.

In order to understand what other elements in our valuation are influencing our target price the most, we chose to “stress test” the price of ME’s share by changing both Sales Growth and the margins obtained with those. The values used in our model were assumed and explained in sub-chapter ‘IV.Company Valuation’. In the table below, we present the results achieved by changing Sales Growth and the percentage of Cost of goods sold over Sales.

		Sales Growth				
		-200 b.p	-100 b.p	Original Value	+100 b.p	+200 b.p
Cost of Goods Sold % of Sales	-200 b.p	11.12	11.94	12.82	13.75	14.76
	-100 b.p	9.74	10.46	11.23	12.05	12.93
	Original Value	8.37	8.99	9.65	10.35	11.10
	+100 b.p	7.00	7.51	8.06	8.64	9.27
	+200 b.p	5.62	6.04	6.47	6.94	7.43

Table 36 – ME price per share changing with Sales growth and Margin on Sales

As expected, higher Sales Growth values contribute to an increase in target price. On the other hand, lower representation of Cost of goods sold on total Sales also contributes to a higher price per share. According to Table 36, in our model, for the price of each share of ME to be near the price practiced by the market on the last day of 2013, we had to consider

a higher Cost of goods sold weight over Sales – more than 2% higher- and also a lower Sales Growth rate (over 2% lower).

VII. References

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Appendix I - Wages and salaries rationale

As referred in subchapter IV.1.3, here in Appendix I, we detail how the values of 'Wages and salaries' were projected in our work.

1. Historical Values:

	Sales & services rendered	Wages and Salaries	Number of Employees
2007	1,401,899,756	257,214,697	15,003
2008	1,868,731,191	309,580,665	17,766
2009	1,978,732,739	314,001,411	19,302
2010	2,004,550,902	358,586,804	19,404
2011	2,176,072,110	373,488,767	20,653
2012	2,243,167,461	416,672,565	26,161
2013	2,313,702,000	446,769,000	28,345

2. Linear Regression (Employees vs. Sales):

	Linear Regression (Y='Number of employees'; X='Sales')		
slope	0.00001	-5,758.62653	intercept
slope +/-	0.00000	6,776.98239	intercept +/-
r ²	0.76011	2,521.70527	s(y)
F	15.84281	5.00000	Degrees of freedom
Regression ss	100,744,416.02355	31,794,987.40502	Residual ss

3. Projected Headcount:

in thousands	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Number of employees	28.30	32.72	35.87	38.99	41.77	44.08	46.10	47.91	49.66	51.47

4. Linear Regression (Wages vs. Employees):

	Linear Regression (Y='Wages'; X='Number of Employees')		
slope	16,745.52	0.00	Intercept
slope +/-	420.50	#N/A	intercept +/-
r ²	1.00	23,802,553.16	s(y)
F	1,585.87	6.00	Degrees of freedom
Regression ss	8.98494E+17	3.39937E+15	Residual ss

5. Projected 'Wages and Salaries:

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Wages and Salaries	473.90	536.58	600.71	652.85	699.46	738.06	771.91	802.25	831.52	861.84

6. Projected 'Wages and salaries by region:

Million Euros		E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
Europe	Sales	779	701	666	653	653	659	666	673	679	686
	Wages	145	133	128	127	128	131	132	134	136	138
Africa	Sales	1,261	1,513	1,740	1,914	2,068	2,192	2,301	2,393	2,489	2,589
	Wages	235	287	336	373	407	434	458	478	499	521
Latin America	Sales	554	665	764	841	900	945	983	1,022	1,052	1,084
	Wages	103	126	147	164	177	187	195	204	211	218



MOTA-ENGIL

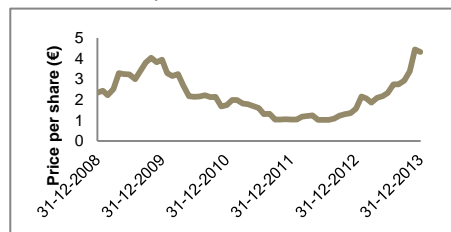
Sebastião Rocha
sebarocha@hotmail.com

BASIC INFORMATION:

Ticker Symbol: EGL.LS
Primary Exchange: PSI-20
Main Sector: Engineering & Construction

Recommendation: BUY
Price (31/12/2013): 4.32 €
Target share price: 9.65 €

Historical stock performance

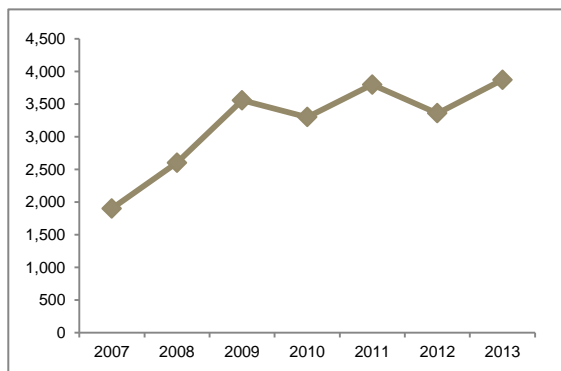


INVESTMENT SUMMARY:

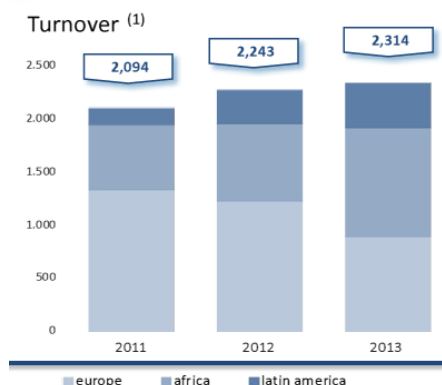
Company Description:

Mota-Engil is a Portuguese Group considered one of the 30th largest groups in the construction area in Europe. The company offers services related to: Engineering & Construction, Waste Management, Water Management, Transports & Concession and Mining. Nowadays, the group operates in more than 20 countries. In 2013, total Backlog amounted to 3,900 million € with Turnover around 2,300 million €.

Significant recent developments



Backlog increase (€ million)

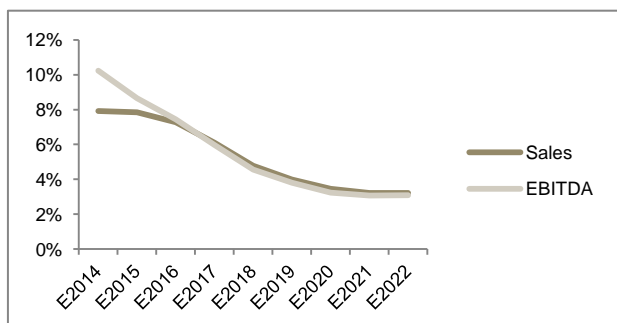


Turnover evolution and distribution (€million)

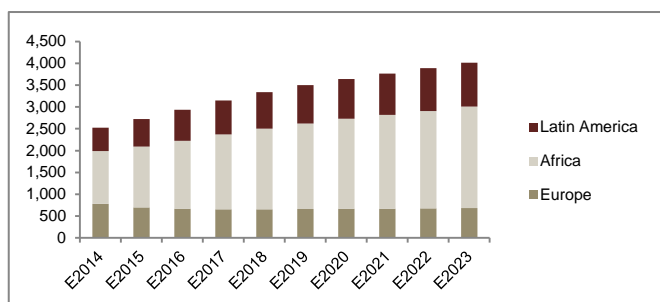
Mota-Engil has been winning several new huge construction, mining and transport construction projects mainly outside Portugal.

Projections:

- Sales and EBITDA Growth:



- Turnover Distribution Evolution (€ million):



DCF Valuation Summary:

Million Euros	E2014	E2015	E2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023
FCFF (T. value in 2023)	314	194	223	242	259	275	289	301	312	4,601
Discounting Factor	91%	83%	76%	69%	63%	58%	53%	48%	44%	40%
Discounted FCFF	287	161	170	168	164	159	152	145	137	1,846
Firm Value	3,388.61									

Cost of Debt	4.63%
Cost of Debt after taxes	3.47%
D/V	64.7%
Risk Free Rate	1.93%
Beta	1.56
Weighted MRP	7.28%
Weighted CRP	7.43%
Cost of Equity	20.74%
E/V	35.3%
WACC	9.56%

Firm Value	3,388,613,509
- Debt	1,621,460,626
+Martifer	25,875,000
+Ascendi	315,000,000
+Financial Investments	92,535,000
+Indaqua	25,080,000
- Minority Interest	201,731,000
Equity Value	1,973,751,883
Target Price per share	9.65

Recommended investment action: **BUY**

In our opinion, Mota-Engil share is underpriced in the market. The market is not incorporating the huge backlog increase registered as well as the influence and history that Mota-Engil has been having in Angola. Moreover, it has entered many emerging and/or raw markets, meaning that Mota-Engil is and will be benefiting from first-mover/pioneer advantages, both in Africa and Latin America.

Investment Risks: Mainly related with political and legal issues arising from characteristics of the countries in which Mota-Engil operates

Relative Valuation Summary - Complementary:

Peer Group Companies	Industry	Country	Growth EPS (5 Years)	ROIC	D/V
Obrascon Huarte Lain SA	Engineering	Spain	14.70%	0.69%	90%
Abengoa SA	Engineering	Spain	17.40%	8.33%	77%
Astaldi SpA	Engineering	Italy	12.50%	8.66%	71%
Ecnor SA	Engineering	Spain	10.70%	0.81%	62%
Ferrovial, S.A.	Engineering	Spain	7.35%	-5.64%	49%
Fluidra, S.A.	Engineering	Spain	19.30%	-3.69%	54%

	EV/EBITDA	EV/Sales	Estimated P/E	Price to Book
Obrascon Huarte Lain SA	7.06	1.78	9.92	1.33
Abengoa SA	10.11	1.31	11.72	0.22
Astaldi SpA	5.73	0.59	8.74	1.35
Elecnor SA	10.26	1.13	9.05	1.87
Ferrovial, S.A.	13.85	1.88	24.87	1.80
Fluidra, S.A.	8.34	0.84	57.87	1.02
Average	9.23	1.26	20.36	1.27

Price per Share based on Price to Book	2.21
Price per Share based on PE	5.03
Price per Share based on EV/EBITDA	9.24
Price per Share based on EV/Sales	7.07
Average	5.89