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Equity Valuation

Essilor International Compagnie Générale d'Optique SA

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Abstract

This dissertation aims to expose the analysis and methodology followed to construct a consolidated valuation assessment for Essilor International S.A. This process included the development of a literature review, an exploration of the macroeconomic environment where the company is inserted and a microeconomic analysis comprising activities diversification, past performance scrutiny and strategy implementation. Afterwards, model input projections are presented and a DCF-WACC valuation method, an EVA model and a relative valuation exercise are implemented. Upon, disperse results and valuation models drawbacks, the first model employed is believed to deliver the most accurate results. Therefore, the resultant output marketed a target share price expectation, referent to 2016, at 125,04€. This valuation is the object of a sensitivity analysis that tested inputs, such as cost of sales, terminal growth rate, WACC and currencies exchange rates effects on revenues. The exercise ends with a comparison with an equity research note on Essilor issued by Société Générale.

Abstracto

Esta dissertação visa a expor a análise e metodologia seguidas no desenvolvimento de um exercício de avaliação consolidado para a Essilor International S.A. Este processo incluiu uma revisão literária, a exploração do contexto macroeconómico em que a empresa se insere e também uma análise histórica sobre as estratégias implementadas, o processo de diversificação levado a cabo e os principais indicadores de performance. Após a projecção dos *inputs* necessários para construir os modelos de avaliação, estes foram implementados, nomeadamente o DCF-WACC, o EVA e múltiplos. Os resultados obtidos revelaram avaliações dispersas, devido às desvantagens apresentadas por cada um dos métodos. Contudo acreditasse que o primeiro seja aquele que fornece o resultado mais fiável. Assim, o *output* resultante marca o preço alvo por acção a 125,04€. Esta avaliação foi objecto de uma análise de sensibilidade que testou *inputs* como o custo das vendas, a taxa de crescimento terminal, o WACC e o efeito de diferentes taxas de câmbio sobre as receitas. Este exercício termina com uma nota comparativa em relação a outro exercício de *equity research* sobre a Essilor, emitida pela Société Générale.

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Acronyms List

APV - Adjusted Present Value

CARG - Compound Annual Growth Rate

CAPEX - Capital Expenditures

CAPM - Capital Asset Pricing Model

COGS - Cost of Goods Sold

DCF - Discounted Cash-Flow

EBIT - Earnings Before Interest and Taxes

EBITDA - Earnings Before Interest, Taxes, Depreciation and Amortization

EV- Enterprise Value

EVA - Economic Value Added

FCFF - Free Cash Flow to the Firm

IRR - Internal Rate of Return

GDP - Gross Domestic Product

LFL - Like-for-like

NPV - Net Present Value

WCR - Working Capital Requirement

PV - Present Value

PVTS - Present Value of Tax Shields

ROIC - Return on invested capital

WACC - Weighted Average Cost of Capital

Y-O-Y - Year over Year

YE - Year End

R&D - Research and Development

S&D - Selling and Distribution

SG - Société Générale

1H - First Half

2H - Second Half

3Q - Third Quarter

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1. Introduction

A value for the equity of a company is portrayed through stock market prices every day. But often, this figure does not capture the true potential of an entity. So, valuation exercises play a crucial role in assessing how demand increases, capital investments and operating efficiencies can impact the value of future cash-flows. It is the difference between the two that allows students, analysts and investors to comprehend if an investment strategy can be applied and what is its profitability potential.

This dissertation will work as an applied project where a company is chosen, in this case, Essilor International SA, and then evaluated on a consolidated basis. The intent is to arrive at a twelve months target price and propose an investment action. But not without before carrying out a comprehensive review on literature regarding valuation models with major focus on process suitability and results reliability. After this initial section, Essilor is contextualized within an industry environment, growth drivers are identified and firm particularities are noted. This will define the grounds to set the main valuation assumptions. Then, in the main section, valuation models, namely, DCF, EVA and multiples are implemented and insights over processes and results are presented. The last sections include a sensitivity analysis and a comparison to a similar exercise developed by *Société Générale* Cross Asset Research analysts.

2. Literature Review

"A company's value is driven by its ability to earn a healthy return on invested capital and by its ability to growth", (Koller, Goedhart and Wessels, 2010). Several methods are widely available to choose from when performing the valuation of a company and "*not all were created equal*", (Goedhart, Koller and Wessels, 2005). The purpose of this section is to gain important insights on each approach by: characterizing them, presenting its mechanisms of usage, challenging the assumptions to be made, recognising which variables may cause misleading results, and finally, correctly interpret the results obtained. Only after such comprehensive analysis, it is possible to decide which "*valuation tool kit*" implement, (Goedhart et al., 2005), when estimating the value of Essilor.

2.1 Relative Valuation

2.1.1 Multiples Valuation Approach

Damodaran (2012), presents us relative valuation has an attempt to value assets based upon similarities with those already priced in the marketplace. It comes across has being an easier and more intuitive approach to understand, apply and communicate. It requires the ponderation of far less explicit assumptions than other valuation methods, yet, it is very susceptible of misuse. In fact, relative valuation presents major deficits: 1) It reflects market trends, therefore, results can potentially mirror the overvaluation or undervaluation of similar firms; 2) It is very susceptible of manipulation, different assumptions, (multiples and peer groups), result in diverse valuations and conclusions, (Damodaran, 2012 and Goedhart et al., 2005).

Witters (1999) cited in Fernández (2001), divides multiples into three major clusters: The first, based on the company's capitalization, thus, equity value, and includes for example the price earnings ratio (PER), the price to book value (P/BV) and price to sales (P/S). The second, according with value, hence, equity plus debt value. The most common enterprise value (EV) multiples are EV/EBITDA, EV/ EBIT, EV/ Revenues. The third, referenced to growth, such as price earnings growth (PEG) or even enterprise value to EBITDA growth.

Fernández (2001), argues that valuations performed using multiples can be extremely dubious, due to their dispersion, and advances that multiples parameters can present even more volatility than equity itself. However, both Fernández (2001) and Goedhart et al.

(2005), defend the importance of using multiples in a second stage valuation, as a stress-test and differences identifier mechanism and underline the relevance of comparing cash-flow forecasts and performance with peers.

Furthermore, Goedhart et al. (2005) present us a set of principles that should be applied, in order to better compute the value of a company using multiples. The authors, (Goedhart et al., 2005): a) stress the importance of choosing peers with similar returns on invested capital (ROIC) and growth forecasts; b) highlight the close to null effect, that changes in a firm's capital structure have over enterprise value multiples, only a really significant alteration, may cause variations in the cost of debt and indirectly on EBITDA; c) suggest the adjustment of the EV to EBITDA for non-operating items such as excess cash, operating leases, employee stock options and pension liabilities; d) recommend the use of forward looking multiples, based on forecasts instead of historical earnings. Liu et al. (2001), provided empirical evidence on this last point through the comparison of both performance and characteristics of forward and historical multiples for a sample withdrawn from NYSE, AMAX and NASDAQ, the first predicts value more accurately than the latter.

As final reminders, it is relevant to mention that Liu et al. (2001) also argue that multiples' performance also improves if calculations are made using a harmonic mean.

2.1.2 The Peer Group

To define the group of comparable firms to conduct a relative valuation, it important to start by comparing certain variables such as: cash flows, ROIC, growth potential, debt structure, risk (cost of capital) and tax rates[1]. The same industry rule, may facilitate such process. Within the same sector, the probability of finding matched company´s profiles is much higher, (Damodaran, 2012 and Koller et al., 2010). Despite careful considerations, no firm is going to be equal, therefore, to increase the accuracy, Damodaran (2012), also suggests some control mechanisms for the differences across companies. Such proposal comprises: a) subjective amendments of a particular variable; b) modification of multiples to incorporate an additional variable; and c) sector regressions, to englobe several additional variables and as a result estimate the multiple. An example of such alterations, can be found in Bhojraj and Lee (2001). The authors present us an alternative mechanism to choose the peer group, while still considering the variables mentioned above[1], a *"warranted multiple"* is estimated for each firm and

afterwards compared with the one of the target firm, to check for compatibility. Subsequently, the efficacy of such selection is tested "*by predicting future enterprise value to sales and price to book ratios"* and results show that this methodology offers significant improvements, (Bhojraj and Lee, 2001).

2.2 The Discounted Cash Flow Valuation Model (DCF)

According to Gilbert, (1989) *"the fair market value of an ongoing business is the present worth of its expected cash flows".* It is based upon this line of thinking that the DCF valuation model operates and the reason why "*it is a favourite among practitioners and academics",* (Koller et al., 2010). This model emphasises cash movements over *"accounting-based earnings",* (Koller et al., 2010).

The general DCF formula is presented as follows:

$$Value\ of\ a\ firm = \sum_{n=1}^{\infty} \frac{CF_n}{(1+i)^n}$$

Equation 1, (Gilbert, 1989): "*CF = cash flow; i = discount rate; n = time periods from one to infinity";*

It is important to mention that there are several variations of the DCF valuation method and two ways to processed, one through the valuation of equity *"by discounting the corresponding expected cash flows to equity, at the cost of equity",* and another, presented below, through the valuation of the firm, (Damodaran, 2012).

Appraise the intrinsic value of the assets is a quest that should comprehend three important steps, (Gilbert, 1989):

1) Estimation of future cash flows, usually, it is represented by "*all the sources of cash, less the capital expenditures necessary to stay in business and continue to grow",* (Gilbert, 1989). The mission is to accurately forecast the cash-flow items that contain periodic operating earnings. Very often, such exercise is based upon historical data, but other alternatives such as the establishment of linear and non-linear relationships between variables can also be considered. Moreover, considerations regarding investments on working capital, capital expenditures and growth also need to be accounted for, (Gilbert, 1989).

The equation to compute the free cash flow to the firm is as follows:

$$FCFF = EBITDA\,(1 - Taxes) - \Delta\, Net\ Working\ Capital - Capital\ Expeditures + Depreciations$$

Equation 2

2) Determination of the discount rate: the opportunity cost is represented as the returns earned on different investments involving similar risks, (Luehrman, 1997). Usually, the weighted average cost of capital (WACC) is computed for this purpose to apply the DCF model, with the downside being its lack of adequacy for complex and changing capital structures, (Luehrman, 1997).

3) Computation of the terminal value: it is the last step to be done in order to reach the complete value of a firm and usually, accounts for 50 to 80 percent of the total figure, (Gilbert, 1989). It is not feasible to forecast cash flows indeterminately, therefore, closure needs to be imposed (Damodaran, 2012) and the necessary arrangements to the general DCF formula, need to be made.

The general DCF formula with the terminal value is as follows:

$$Value\ of\ a\ firm = \sum_{n=1}^{t} \frac{CF_n}{(1+i)^n} + \frac{TV_t}{(1+i)^t}$$

Equation 3, (Gilbert, 1989): "*CF = cash flow; i = discount rate; n = time periods, time=1 to t; TV=terminal value*".

For the actual application of the DCF model, the value of Essilor will be computed using the formula below, the WACC will be the discount rate and the FCFF the proxy for future cash flows.

$$Value\ of\ a\ firm = \sum_{t=1}^{t=n} \frac{FCFF_t}{(1+WACC)^t} + \frac{\left[\frac{FCFF_{n+1}(1+g)}{WACC-g}\right]}{(1+WACC)^n}$$

Equation 4, (Damodaran, 2012): *FCFF = Free Cash Flow to the Firm; WACC = weighted average cost of capital; n = time periods;*

Despite its high degree of exactitude and flexibility, (Goedhart et al., 2005) the DCF valuation model still presents significant drawbacks that are worth mentioning. In fact, it requires the fulfilment of particular requisites in order to work. For example, without positive cash flows, a firm will have a negative value. As such, forecast needs to be carried out until they became positive. But in financial distress, this might not be the case, bankruptcy costs need to be accounted for and in the extreme, the company might cease to exist, (Damodaran, 2012). Another common issue has to do with cyclical companies, those whose revenues or even expenses vary in accordance with economic expansions and downturns. In this situations, to correctly implement the DCF model, it is important to predict and incorporate in future cash flows, the effect of economic fluctuations, (Damodaran, 2012). At last, if a firm is going through restructuration process, them both the value of the assets and the debt to equity ratio might be changing and so does the risk, which makes the challenge of forecasting future cash flows much harder, (Damodaran, 2012). It is based upon this disadvantages that Luehrman, (1997) states that the *"one-size-fits-all approach"* is inexistent and argues that *"three complementary tools, one for each type of valuation problem",* (cash, timing and risk)*, "will outperform the single tool (WACC-based DCF)".*

2.3 The Adjusted Present Value Valuation Approach (APV)

Booth, (2002) presents us the APV valuation method as a way to *"unbundle"* a firm by modules. Luehrman, (1997) even advocates that this method *"relies on the principal of additivity"*. With APV, the firm is valued, on a primary instance, under the assumption that has no leverage, it is therefore fully financed by equity. In this step, the future FCFF are discounted at the cost of equity. Afterwards, the effect of the expected interest tax shields are accounted for and discounted at the cost of debt. Finally, it is important to account for potential bankruptcy costs. Increase the level of debt is beneficial until it no longer impacts just the value of the expected interest tax shields, but also begins to affect negatively the company's solvency, (Damodaran, 2012).

Using the APV approach, the formula to compute the value of a firm assuming a perpetual constant growth rate is presented below. Modifications to the formula can be done to accommodate various stages of growth.

$$Value\ of\ a\ firm = \frac{FCFF_1 \times (1+g)}{(\rho_u - g)} + T_c \times D - \pi_a \times BC$$

Equation 7, (Damodaran, 2012): "$FCFF_1$= expected FCFF in the following year; ρ_u = unlevered cost of equity; g = expected growth rate; T_c= tax rate; D = Debt; π_a= probability of bankruptcy; BC = present value of bankruptcy costs;"

Opinions diverge regarding the accuracy of this valuation method. Luehrman, (1997) defends that from a *"managerial sense"* there are numerous advantages in choosing it over the DCF-WACC valuation model. The author argues that, not only, makes it easier to deal with complex scenarios, such as changing debt structures, but also, provides a full overview on value creation by allowing a compartmentalization of what it is coming from *"cost reductions, operating synergies, new growth and tax savings",* (Luehrman, 1997). However, Booth, (2002) provides a different contribution by advocating that the APV approach is *"frequently unreliable and should only be used in conjunction with more conventional valuation frameworks"*. Therefore, the author restricts the relevance of using the APV as a valuation method to the following situations: *"structured financing, leveraged buyouts, project financing and real estate financing"* and refers, as the most problematic assumptions of the model, the computation of the unlevered cost of equity and the definition of the ideal amount of debt (Booth, 2002).

2.4 Real Options Theory

According to Fernández (2001), the flexibility to postpone an investment has value in itself and real options valuation attempts to capture exactly that, while other, more popular methods such as the net present value (NPV) and the internal rate of return (IRR) fail to do so. Such incident often causes the undervaluation and even rejection of profitable projects (Fernández, 2001 and Leslie and Michaels, 1997). In question is maintaining open the possibility of capturing future cash flows, without committing to a definitive investment decision, until, the full potential of such opportunity is not established and crucial information is not available. (Leslie and Michaels, 1997).

Fernández, (2001) presents us a systematic approach to recognize and classify real options, by dividing them in three major groups: a) contractual options: that respect mostly natural resources concessions; b) growth and learning options: which incorporate expansion opportunities, acquisitions and R&D projects; c) flexibility options: that

comprise the possibility to defer, downsize or even abandon an investment, product modifications and alternative uses considerations.

Theoretically, both the Binomial and the Black and Scholes (B-S) option-pricing models can be applied to value real options, as long as, it is possible to transpose them into a portfolio, (Fernández, 2001). Furthermore, Leslie and Michaels, (1997) present us the real-market proxies for the inputs required to apply the B-S option-pricing method, being it the most commonly used. As a result, the stock price is replaced by *"the present value of future cash flows from the investment opportunity"*, the exercise price is represented by the PV of the expected fixed costs along the term of the project, uncertainty is measured by possible variations of growth in future cash flows, the expiration date is *"the period for which the investment is valid"*, the dividends are epitomized by *"the value that drains away over the duration of the option"* and the risk-free rate maintains its general definition as an opportunity cost, (Leslie and Michaels, 1997).

It is relevant to mention that there are still limitations to the use of option-pricing models to value real options, especially when assumptions need to be defined over greater lengths of time, the accuracy of estimation decreases significantly, (Damodaran, 2012).

2.5 Economic Value Added Approach (EVA)

Stewart, (1990) presents us the Economic Value Added as *"a residual income measure"* computed by subtracting from the EBIT *"all of the capital employed to produce those earnings"*. It accounts for a company's performance and can be increased: a) through the generation of additional operating surpluses without spending additional capital; b) with the investment of new funds in projects with higher returns than the expenses incurred; c) through the divestment of capital employed in projects were the target expected return is not being achieved, (Stewart, 1990). The formula to compute the EVA is presented below.

$$EVA = (return\ on\ capital\ invested - cost\ of\ capital\ ) \times capital\ invested$$
$$= after\ tax\ operating\ income$$
$$- (cost\ of\ capital\ \times capital\ invested)$$

Equation 8, (Damodaran, 2012)

If the intention is to apply the EVA and proceed with a full valuation of a company, then the net present value concept (NPV) allows us to establish a connection were a firm's value is as presented in the formula below. (Damodaran, 2012).

$$Value\ of\ a\ firm = Capital\ invested_{assets\ in\ place} + \sum_{t=1}^{t=\infty} \frac{EVA_{t,\ assets\ in\ place}}{(1+k_c)^t} + \sum_{t=1}^{t=\infty} \frac{EVA_{t,\ future\ projects}}{(1+k_c)^t}$$

Equation 9, (Damodaran, 2012)

Similarly with other valuation methods, the EVA approach also presents some pitfalls, mostly related with incentives management. Among the most relevant situations, there is the trade-off between the motivation to intensify investments in new projects (and this way increase the EVA) and the associated rise in operating risks, (Damodaran, 2012). Furthermore, while divesting on underutilized assets can be a way to increase the EVA, it also may offers a distorted incentive to simply decrease the amount of capital invested, (Damodaran, 2012).

2.6 Considerations Regarding the Assumptions

2.6.1 The Cost of Capital

To be consistent in a valuation process, the discount rate of future FCF must match the type of investor claims the stream represents, (Koller et al, 2010). With this consideration in mind, when applying the DCF valuation model, the weighted average cost of capital (WACC) appears as the most appropriate discount factor: it denotes the risk faced by both equity and debt holders, (Koller et al, 2010).

The formula to compute the WACC is as follows:

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

Equation 9, (Koller et al., 2010): where D = debt; E = equity; T = tax rate; K_d = cost of debt; K_e = cost of equity;

The WACC focuses the operating performance and incorporates in itself the impact of interest tax shields, (Koller et al, 2010). Furthermore, it is important to acknowledge that both debt and equity values must not be their book value, but instead, proxies of their market value, (Fernández, 2004).

2.6.2 The Cost of Equity

Damodaran, (2012) defines the cost of equity as *"the rate of return investors require on an equity investment in a firm"*. It is also one of WACC's building blocks, and to compute it, it is very common the application of the Capital Asset Pricing Model (CAPM). The formula to do so, is presented below.

$$\mathrm{E}(R_e) = R_f + \beta_e \times [E(R_m) - R_f]$$

Equation 10, (Damodaran, 2012 and Koller et al., 2010): where $E(R_e)$ = expected return on equity; R_f = risk-free rate; β = sensitivity to the market risk; $E(R_m)$ = expected return of the market;

2.6.2.1 The risk free rate

Damodaran, (2008) defines two mandatory requirements that an investment must fulfil to be considered risk-free: 1) The inexistence of default risk, therefore, only government securities can be accepted. Central banks have the power over currency issuance and can back their promises, at worst, in nominal terms. Nonetheless, situations where states have borrowed money in foreign currencies or where economic instability rules, this assumption may not hold. On an opposite note, within the euro zone, it is common to use German bonds as a way to estimate the risk-free rate, despite the existing separation between the European Central Bank and the German government, (Damodaran, 2008). 2) The inexistence of reinvestment risk, so that the actual returns equate expected returns. In practical terms, this means that only government zero-coupon bonds are appropriate proxies of risk-free investments, (Damodaran, 2008).

To correctly estimate a risk-free rate, Fernández, (2004) outlines the importance of matching the maturity of the chosen government zero-coupon bond with the explicit period considered for the valuation of the firm in question. Moreover, the author, reminds that it is incorrect to use *"the historical average of the risk-free rate as the actual risk-free"*, Fernández, (2004).

2.6.2.2 The market risk premium

The market risk premium (MRP) is *"the difference between the market's expected return and the risk-free rate"* and can be estimated through different processes, (Koller et al., 2010). Most commonly, stock returns are subtracted from the default free security' returns to obtain the historical risk premium, (Damodaran, 2012). With this process, it is better to consider the longest time frame available, to decrease estimation errors and use a geometric average to annualize returns because: a) an arithmetic average is computed with errors that will be squared and lead to an overestimation of the MRP and b) it has been argued that *"stock market returns are negatively correlated over time"*, (Koller et al., 2010). However, Damodaran, (2012) argues that apart from the United States, even in mature economies, such as France, the equity markets do not represent a diversified portfolio. To tackle this situation, the author suggests the addition, to the base premium (obtained from the historical premiums of representative indexes of either the U.S, European or global market), a measurement of the country risk premium, (that for simplicity can be equal to a country's default spread), (Damodaran, 2012).

$$The\ MRP = European\ risk\ premium + Country's\ default\ spread$$

Equation 11, (Damodaran, 2012)

2.6.2.3 The beta of a company

The beta is a measure of the exposure of a company to the market risk. To reach this value, Koller et al., (2010) suggest, as a first step, the estimation of a *"raw beta"* using the linear regression presented below. The authors, further suggest the use of monthly returns to reduce the systematic bias and advocate for the inclusion of at least five years of data. (Koller et al., 2010).

$$R_i = \alpha + \beta \times R_m + \varepsilon$$

Equation 12, (Koller et al., 2010): where R_i is the return on the company's stock and R_m is the return on the market portfolio.

This "raw beta" can be adjusted to obtain a much reliable result. For industries were there are only a couple comparable companies, a smoothing process can be applied, (Koller et al., 2010). The simplest adjustment suggested by Bloomberg is as follows.

$$Adjusted\ Beta = 0{,}33 + 0{,}67 \times (\ Raw\ Beta)$$

Equation 13, (Koller et al., 2010)

2.6.3 The Cost of Debt

Koller et al., (2010) advocate that for an investment-grade company such as Essilor, the yield-to-maturity (YTM) on a *"liquid, option-free, long-term"* bond, is a good approximation of the cost of debt. Such characteristics are essential to ensure respectively that: a) the price and by extent the YTM are not outdated; b) the bond price is not overstated and c) the cost of debt is adequate for the explicit period, (Koller et al., 2010).

2.6.4 The Growth rate

Predicting accurately future growth is key to ensure the quality of any valuation. Damodaran, (2012) advocates that it is possible to derive information regarding growth rates through three main processes: 1) historical performance analysis, offering an overview on operations, nevertheless, it might not be significant enough to account for strategy changes and life-cycle developments; 2) analysts' predictions examination, providing insights on the sequential impact of firm's related news and their impact on forecasts, however, O'Brien, (1987) suggests that such, is only reliable and therefore advantageous in short-term perspective analysis; 3) fundamentals examination, where net income growth can be determined by multiplying the equity reinvestment rate for the return on equity and where operating income growth can be computed by multiplying total reinvestment rate for the return on capital, if the later in not changing over time, (Damodaran, 2012).

2.7 Other Considerations

2.7.1 Cross-Boarders Valuation

If a company has or intends to establish activities in foreign environments, either through M&A or specific investment projects, then, valuation considerations regarding related variables and risks need to be accounted for. Concerning the FCFF, Froot et al., (1997) suggests, firstly, to forecast them on foreign currency, accounting for inflation and subsequently, decide whether to proceed with the valuation using a discount rate in accordance to reach a final PV and only afterwards convert it using the spot value of the exchange rate to the domestic currency. Or alternatively, switch future FCFF immediately to the domestic currency and then apply the same discount rate of the rest of the company and compute the PV, (Froot el al., 1997). To account for excess risks faced abroad,

especially in emerging markets, James and Koller, (2000) suggest the incorporation of such in the FCFF, (through the creation of scenarios weighted by the occurrence probability), rather than including it in the discount rate, (through a risk premium). Volatile variable such as GDP growth, inflation, interest and exchange rates do not affect equally all industries and related risks can sometimes be diversified, (James et al., 2000). Another concerning issue are the different tax policies. Accordingly with the headquarters' origin, companies are exempt or not to pay taxes on foreign income at least until a certain percentage. Froot el al., (1997) suggest that if exempt, then FCFF and PVTS must be computed using the foreign tax rate, if not exempt, then the highest of both domestic and foreign is suitable.

2.8 Conclusion

This analysis made it possible to determine the valuation methods that better suit Essilor's circumstances and therefore that might provide superior reliance on final results. Therefore, the DCF-WACC approach was the primary choice for its wider acceptability and considering that Essilor as an established target capital structure and is not prone to cyclical effects. Moreover, the usage of an APV model would generate an additional source of concern regarding bankruptcy costs assumptions. Additionally, the EVA method was selected for providing interesting insights on how the capital invested is expected to impact profitability and by extent Essilor's value. Finally, the relative valuation is also implemented as a complementary exercise for reasons related to popularity, wider acceptance and comprehension.

3. From the Macro-environment to the Micro-environment

This section is meant to present a tunnel overview on the ophthalmic optics industry where Essilor is integrated. It starts with a brief summary about the impact of macroeconomic variables in propelling revenues, then industry particularities are explored and finally Essilor's structure, strategy, past performance and growth potential are analysed.

3.1 Major Macroeconomic Considerations and Implications

The most relevant societal forces that affect the ophthalmic optics industry and in particular Essilor are demographic related. Currently world's population accounts for 7,2 billion people[1] and it is estimated that among them, 4,5 billion require visual correction, but, only 1,9 billion are getting it[3]. It exists therefore, a very big, and increasing untouched market. By 2030, with the world's population increasing 1,18 %[2] yearly, it is expected that 3,1 billion people will by them have sight correction, but 2,9 billion will remain in need[3].

Moreover, the world is currently facing a "*demographic transition*" were the combined result of both declining mortality and fertility is an overall aging of the world's population. In fact, by 2030 it is estimated that around 16% of the globe's population will have more than 60 years old and 34% will be 45 years old or over[2]. In figures, such values will account for 1.4 billion and 2.8 billion people respectively, in comparison with the currently existent 872 million and 2.04 billion people[1;2]. Presbyopia, (incapability to focus properly on items close by), is a condition intrinsically related with aging, that can be easily corrected with optical lenses. The prevalence of this condition varies from 43,8% in most developing countries and 83%[4] in most developed countries, with incidence starting at 45 years old. Considering the combined prospects presented above, then the market will be subject to a commensurable increase in the future.

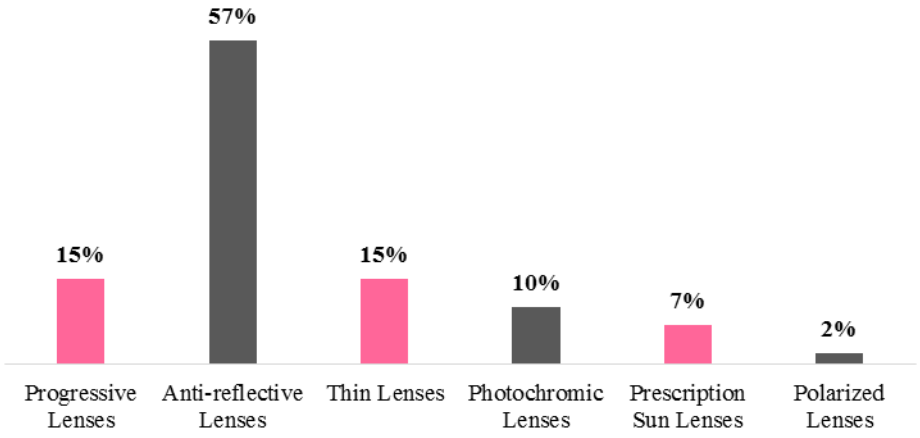
Additionally, economic factors indicate that the world GDP – based on PPP, will increase 37%, being in 2014 around USD 108 trillion[5]. In per capita terms, world GDP – based on PPP will increase from the current USD 14.981 to USD 19.186, accounting for a 28% growth[5]. Individuals will be wealthier and the rising middle class in developing

[1] Value for 2014;
[2] Source: United Nations World Population Prospects, 2015;
[3] Souce: Essilor's Annual Shareholders Meeting Presentation, 2013 and Essilor's Annual Report, 2014;
[4] Source: Holden et al., (2008);
[5] Source: International Monetary fund, World Economic Outlook Database, 2015;

countries can reach up to 25% in 2030, while in 2005 only accounted for 5%[6]. This leads us to expect a greater availability of disposable income to be expended on healthcare and namely sight correction of not just presbyopia but also myopia, astigmatism and hyperopia.

Technological innovation propels existing consumers into new acquisitions and drives growth as well. Coating for lenses are among the greatest advancements and add significant value to the existing products, (Exhibit 1). Furthermore, inserted in the cultural environment, protection and prevention purchases are growing. In particular, demand from sunglasses and photochromic lenses increases. In fact, it is expected that such market presents a compounded annual growth rate (CAGR) between 5% and 7% until 2020[7].

Exhibit 1: Penetration of value-added lenses worldwide;
Source: Essilor's Investors Day Presentation, 2014



[6] Source: World Bank, MIC Forum Presentation: The Rise of the Middle Class, 2013;
[7] Source: Essilor's Investors Day Presentation, 2014;

3.2 The Ophthalmic Optics Industry

3.2.1 Presentation

To better understand the ophthalmic optics industry it is important to conduct a comprehensive analysis over the different businesses and operations.

The transformation process that products go through until reaching the final customer comprehends four stages. 1) **Raw materials handling and transformation**, carried out by glass producers or chemical enterprises, if the products in question are respectively glass or resins; 2) **Lenses Manufacturing** of single-vision finished lenses and semi-finished lenses; 3) **Lenses Finishing**, depending on the embedded complexity of the sight problem, customization might be required. In this case, laboratories, independent or not from the manufacturer, complete the semi-finished lenses following optometrists' prescriptions. Moreover, additional coatings[8] can be added by request and edging is performed, so that lenses can fit within the optical frames. 4) **Lenses Retailing**, where direct contact with customers is established. The optical retailer provides advice as for the type of lenses to order and retrieves prescriptions, to later deliver the final product.

3.2.2 Market Volume and Growth

It is estimated that 1.2 billion lenses are sold every year, in the world[9]. Such accounts for EUR 11 billion in revenues just for the manufacturing business alone[9]. Growth in the ophthalmic optics industry rounded 3% in 2014[9] and for the foreseeable future two tendencies will keep driving it. The first is the renewal of existing demand. On average people worldwide switch lenses every 3 years, however, this rate, varies considerably according with regions. Technology plays here a crucial role, introducing progressive lenses, organic lenses that are extremely thin and surface coatings. The second, is the appearance of new demand, an increasingly number of people require vision correction, (for example, by 2020, it is expected that the number of people suffering from myopia worldwide increases 24% over the current 1.6 billion people[10]) and are able to afford it. In this industry, like in many others, supply is organized by tiers. Low entry and mid-tier products have greater demand on emerging markets, whereas, high-end products are sought more frequently on developed countries.

[8] Types of coatings: anti-fog, anti-UV, anti-reflective, anti-scratch among others;
[9] Source: Essilor's Annual Report, 2014;
[10] Essilor's Shareholders Meeting Presentation, 2014, estimates from 2013;

3.2.3 Main Players

Competition is this activity remains fragmented, lenses manufacturers in the world are about 150 to 200[11]. However, Essilor estimates to hold 39% of market share[11] and that its two major competitors are *Carl Zeiss* and *Hoya*, the rest being small producers. As for wholesalers, laboratories and optical retails exist in much larger numbers, are widely spread and operate locally.

3.3 Essilor International SA

3.3.1 Presentation

In 1972, Essilor appeared as the result of the merger between *Essel* and *Silor,* two French competitors in the ophthalmic optics industry. The initial public offering (IPO) was in 1975 and currently the company is headquartered in France, (Charenton-le-Port) and trades in both CAC 40 and Euro Stoxx 50 indexes. Essilor conducts business operations under the motto *"improving lives by improving sight"*[11] in each of the industry sub-sectors presented below.

3.3.2 Lenses and Optical Instruments Division

The designing and manufacturing of corrective lenses is the company's oldest and still most important activity. Essilor supplies this sector with brands such as *Varilux, Crizal, Xperio, Optifog* and most recently *Nikon* and *Kodak*. Additionally, Essilor is the developer of lens-edging and vision-screening instruments. Currently, Essilor has 33 plants operating worldwide, (25 producing prescription lenses, 3 producing sunglasses lenses and 5 photochromic lenses) and 490 facilities operating as prescription laboratories, edging and distribution points. The target clients are opticians, optometrists, prescription laboratories and final customers, (online sales).

3.3.3 Equipment Divison

Essilor also manufactures equipment (surfacing and coating machines) for its own use or for commercialization with other lenses manufactures and produces, as well, consumable goods for prescription laboratories. Such products are market under the brand *Satisloh*, which currently holds 6 plants worldwide. In this business area, Essilor faces direct competition from two private companies, *Schneider Kreuznach* and *Leybold Optics.*

[11]Source: Essilor's Annual Report, 2014;

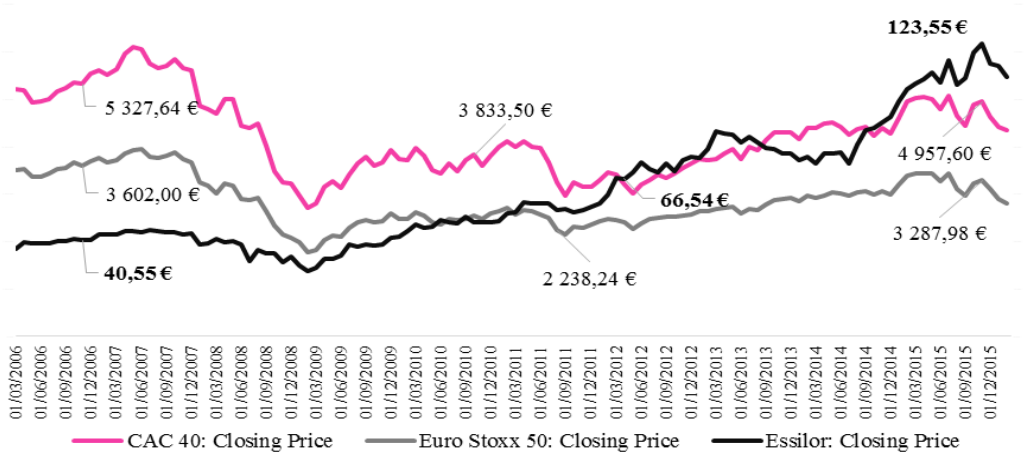
3.3.4 Sunglasses and Readers Division

Additionally, Essilor has been producing and selling non-prescription sun and reading glasses mainly through its subsidiaries *FGX International* and *Costa* respectively. This products are retailed mostly in pharmacies and large department stores. Competition in this segment is done by small companies operating locally.

3.3.5 Ownership Structure, Stock Market Performance and Dividends

Essilor's capital is hold mainly by institutional investors, both foreign and resident in France. Their ownership accounted at YE2014 for 81,2% of the total outstanding shares at that time. Furthermore, employees, retirees and partners held 8,4 %, individual shareholders 8,6% and Essilor itself 1,8%[12]. Essilor has a very low investor's concentration, its top 10 investors hold less than 14%[13] of the total number of shares outstanding. Still the most relevant shareholder, holding around 4%[13] of the total outstanding shares is *Northern Cross LLC*. The company only issues common stock.

Exhibit 2: Monthly Closing Share Prices: Essilor International SA, EuroStoxx 50 and CAC 40 Index;
Source: Reuters Eikon terminal: tickers: ESSI.PA/.FCHI/.STOXX50;



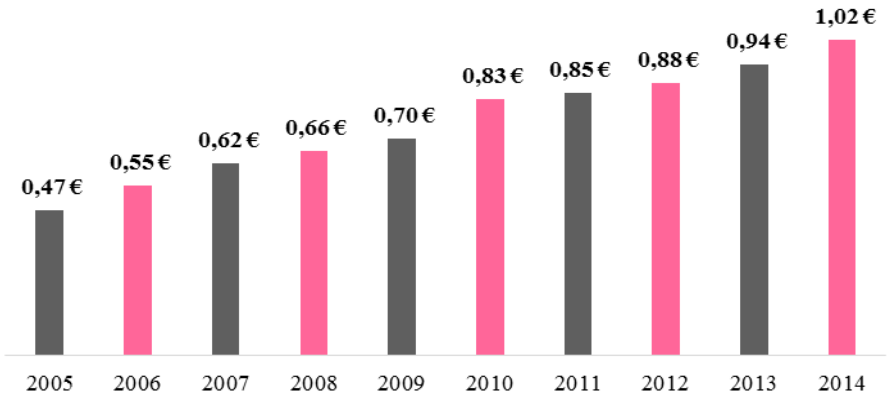
Regarding Essilor's performance in the stock market over the past few years, the price per share has been following a growing trend, unlike the more unsteady scenarios presented by both CAC 40 and Euro Stoxx 50 indexes. From 2006 to 2015, Essilor's stock market prices presented a CAGR of 10,9%, whereas, CAC 40 and Euro Stoxx 50 Indexes' prices depicted even negative CAGR for the same period. Since the middle of 2014, the

[12] Source: Essilor's Annual Report, 2014;
[13] Source: Reuters Eikon, as of 04.11.2015;

share price increased more steeply, having this trend slowed down towards the end of the year.

Concerning, Essilor's dividends distribution, a specific policy is not applied, but usually it represents a one-third part of the net income assigned to equity proprietors. Still, every year, this value is suggested by the top managers and subject to approval at the annual shareholders meeting. Essilor pays dividends in cash.

Exhibit 3: Net Dividends-per-share paid by Essilor between 2005 -2014;
Source: Essilor's Annual Reports of the corresponding year;



3.3.6 Mergers and Acquisitions (M&A) strategy

As an effort to increase market share, to gain degrees of concentration in such a fragmented industry and to ensure continuous growth for the foreseeable future, Essilor has been carrying out numerous acquisitions and establishing countless partnership agreements with direct and indirect competitors. Since 1975, Essilor increased its number of holding companies from 25 to 650[14]. In 2015, between the acquisition of minority, majority or complete participations, Essilor completed 19 organic deals, equivalent to EUR 214 million in revenues[15]. While in 2014, the acquisition of *Transitions Optical* and *Coastal* where strategic. The first, allowed Essilor to become the foremost producer of photochromic lenses and the second, enabled it to become the primary retailer online for vision care products. The collective revenue of both companies accounted for EUR 525 million[15].

The pursue of such M&A strategy is enabling Essilor to take advantage of both scale and learning economies throughout research and development (R&D) and

[14] Source: Reuters Eikon terminal, Essilor's News, 30.10.2015;
[15] Source: Essilor's Quarterly Report, Sep. 2015 & Essilor's Annual Report, 2014;

manufacturing processes. Moreover, it is empowering Essilor to further extend its business operations within the industry. By doing so, it reinforces not just vertical but also horizontal integration and becomes more competitive. Within a foreseeable future, Essilor will predictably continue to implement this strategy at reasonable prices. But, in the long-term, sustained growth will have to rely on other sources of competitiveness.

4. Company Valuation

This section starts with the past performance analysis of Essilor´s main valuation inputs. After a comprehensive examination of the main growth drivers for each parcel, projection results are illustrated. Furthermore, it presents a discussion regarding the major valuation assumptions, (capital structure, cost of equity and debt, WACC, explicit period and terminal growth rate), before moving towards the construction of valuation models (DCF method, EVA and multiples). It ends with a sensitivity analysis and a comparison with another valuation research exercise.

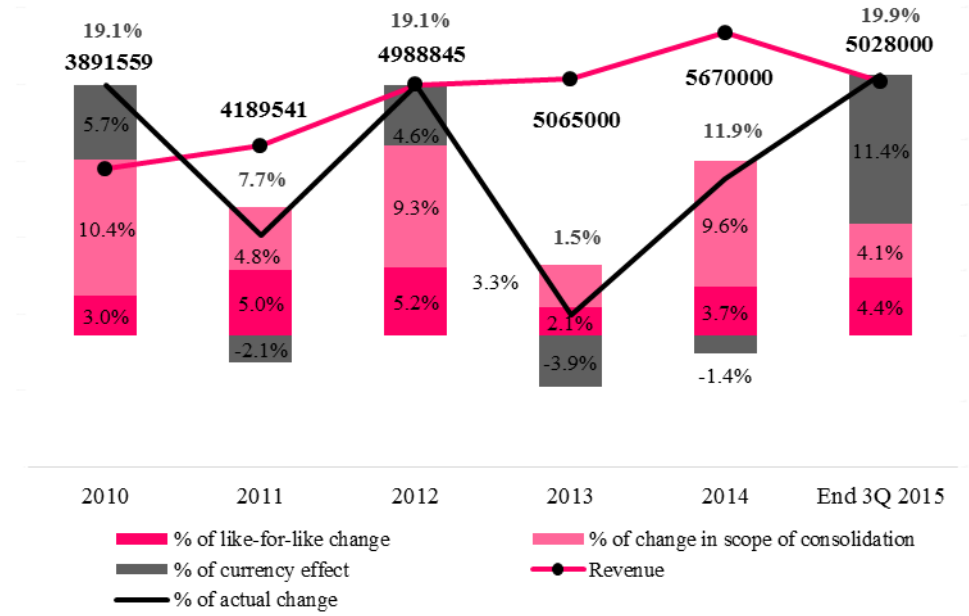
4.1 Analysing the Past and Projecting the Future

4.1.1 Revenues

4.1.1.1 Past Performance

Essilor under its dominant position in the ophthalmic optics industry has been delivering very positive results in the past few years. While growth, in the industry, evolves in accordance with the demand generated by both the appearance and renewal of eyesight necessities, together with the development of new technologies. The incremental developments for Essilor is also aligned with its capacity to identify and complete new M&A deals. Furthermore, due to a wide geographical dispersion, exchange rates introduce a degree of volatility to the results. Exhibit 4 presents an analysis on the past evolution of both revenues and revenues growth rates by typology: like-for-like (LFL), changes in the scope of consolidation and currency effect.

Exhibit 4: Revenues amount (in thousands of euros) and growth (in %) by typology;
Source: Essilor's Annual Reports of the corresponding year;



Overall, LFL growth maintains a trend aligned with the industry, particular oscillations derive mostly from the performance in Europe and North America, (markets that are very susceptible to the impact of marketing campaigns) and the capacity to conquest new demand each year in emerging countries. Essilor is required to maintain a close relation with its intermediaries (eye-care professionals and optical chains) in order to ensure congruence of objectives and succeed. Such situations illustrate well the slight downturn observed during 2013 and subsequent improvement in 2014 and 2015 and might require some precaution during the forecast exercise. Concerning the impact of exchange rates, the verified appreciation of the euro against other currencies creates an adverse result in revenues. However, recent trends point towards an appreciation of USD relatively to EUR that positively smooths the effects. Finally, the level of acquired revenues is dependent on the number and type of deals completed each year, (strategic or organic). From 2010 to 2014, the company registered a CAGR of 5.57% in revenues, reaching at the end of that period EUR 5,67 billion. The trend during 2015 was accentuated and at closure of Q3, revenues amounted already EUR 5,03 billion, an increase of 19,9% year-over-year (y-o-y), comprising 4,4% LFL growth, 4,1% growth in acquired revenues and 11,4% in currency effect[16].

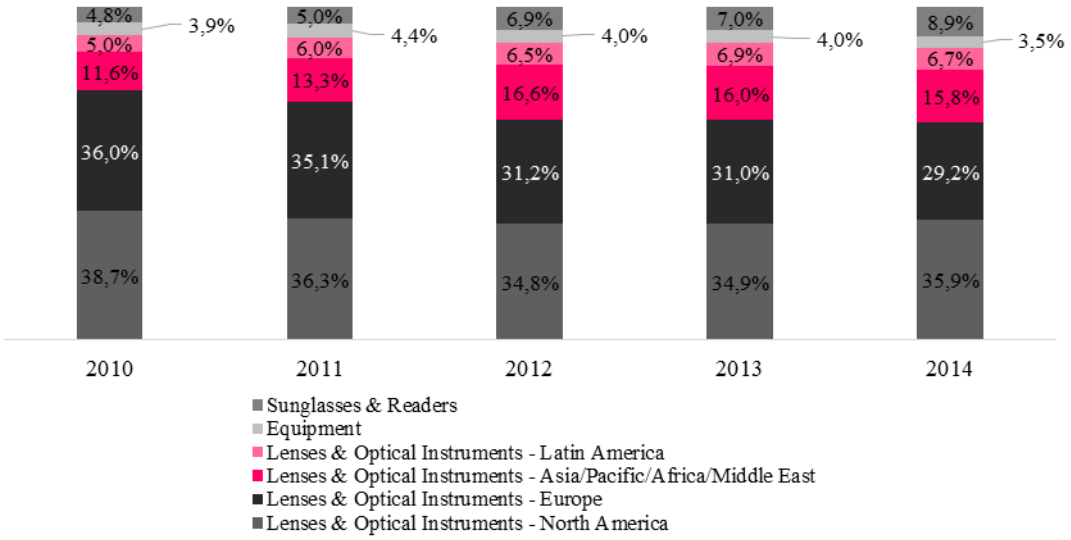
4.1.1.1.1 By Division and Region

The Lenses and Optical Instruments sub-segment is the main revenues generator, with emphasis in North America and Europe, as illustrated in exhibit 5. However, it is possible to observer that emerging markets have been gaining greater importance, trend that is expected to continue. Furthermore, this regions register a much higher LFL growth rate, (end Q32015: 5,6% and 9,2% respectively versus 4.5% in developed countries[16;17]). The Sunglasses and Readers division has been, as well, increasing its share of importance in Essilor's investment portfolio. It was a strategic move to diversify while maintain a certain degree of expertise. Expansion remains intrinsically related with acquisitions and partnerships. The Equipment sub-segment is of diminished importance in relation to total revenues and growth aligns with that of the Ophthalmic Optics industry, as it provides complementary products to lenses' production. However, in the end of Q32015, Essilor registered a LFL growth of -5,4% in this division, even though total growth was 6,8%[16].

[16] Source: Essilor's 3rd Quarter Report, 2015;
[17] Developed countries: Europe and North America, presented LFL growth is the average of both;

This was motivated by accounting particularities that eliminated intragroup revenues generated with companies Essilor acquired during 2015.

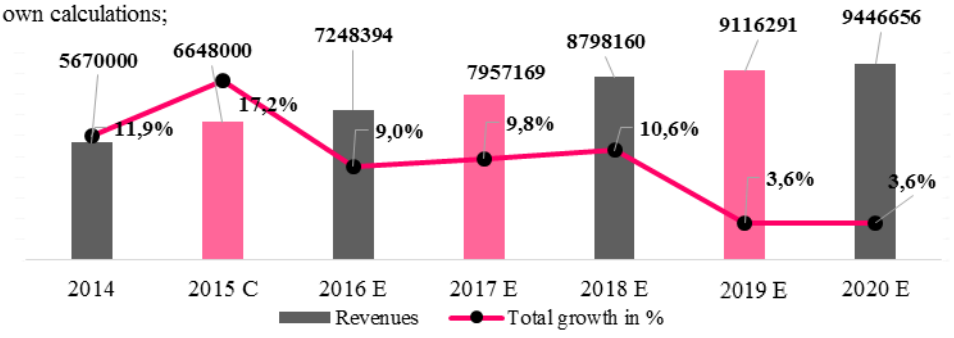
Exhibit 5: Revenues contribution by each segment and region in %;
Source: Essilor's Annual Reports of the corresponding year;



4.1.1.2 Projections

In order to estimate Essilor's future revenues, the following was taken into account: the average industry growth, the strategy being pursued and the reported targets to be archived until 2018. Considering the company's past performance and commitment towards archiving the scheduled targets, these assumptions seemed to fit reasonably there purpose. Exhibit 6 presents a summary of the revenues related expectations. Between 2015 and 2020, Essilor is expected to register a CAGR of 5.1%.

Exhibit 6: Revenues and total growth forecast (in thousands of euros);
Source: Essilor's annual report 2014, 3Q 2015 report, investors day presentation 2015 and own calculations;



This values reflect the estimated LFL growth for each division and region, to be presented below, together with 3,2% adjustment, up until 2018, to reflect the impact of organic acquisitions. Up to this moment, no information has been released announcing any

strategic acquisitions, therefore, the conservative assumption is to only consider the completion of organic deals. As such, the presented growth rate reflects the combined average of the last 6 years for the three divisions[18]. By 2018, the company is expected to hold 61.1% of market share[19] in its main segment, therefore, it is highly probable to start experiencing difficulties in completing new transactions at fair values. As no further target information is disclosed, it is assumed that Essilor will abandon such practice, at that point. The currency effect is presumed to be equal to zero for simplicity purposes. Considering the variety of countries and currencies Essilor conducts business in and with, making assumptions would risk the introduction of bias, (upwards or downwards), not grounded on actual new demand increases. The impact of this issue is left to be analysed in the sensitivity analysis.

4.1.1.2.1 By Division and Region

For the Lenses and Ophthalmic optics division, growth estimates are based upon the average industry rate of 3%[20] for North America and Europe, where Essilor's position is already solidified. Growth in demand for this regions holds with the continued expansion of current product lines, (*Crizal* and *Varilux*) and the introduction of new ones, (*Eyezen*). Moreover, online commerce has been being implemented and aligned with fruitful marketing campaigns. In emerging economies, revenues growth is expected to proceed at a faster pace. By 2018, Essilor expects to account EUR 2,8 billion[21] in revenues being generated in this region. To do so, demand will have to rise, between 2015 and 2018, at around 23,6% yearly. Bearing in mind, the current level and quality of eye-care treatment, such a high CAGR seems to be easily attained. Demand is driven by the increasing population and purchasing power, which lead people to seek sight correction for the first time or encourage them to replace glass for organic lenses, (considerably lighter, safer and thinner). After 2018, growth is expected to be slower and steadier, at 4%[20] and drivers to align with those of developed countries. Exhibit 7 and 8, presents a summary of revenues related forecasts by region and growth respectively.

[18] Past information regarding the source of organic growth by division is not disclosed.
[19] Source: Essilor's Annual Report, 2014 and own calculations and estimates;
[20] Source: Essilor's Annual Report, 2014 – between 3% and 4%;
[21] Source: Essilor's Investor's Day Presentation 2015;

Exhibit 7: Lenses & Ophthalmic Optics revenues forecast (in thousands of euros);
Source: Investors Day Presentation 2015 and own calculations;

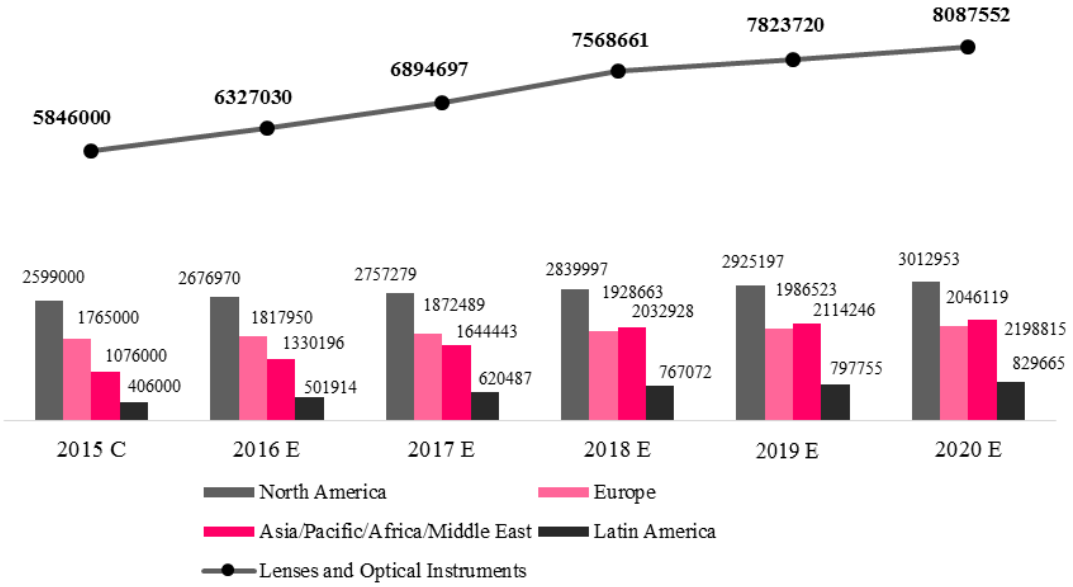
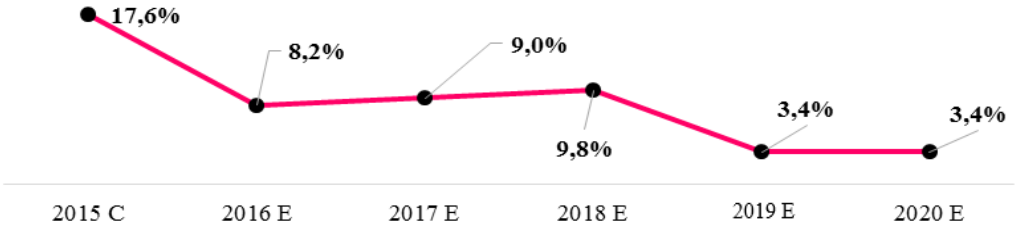


Exhibit 8: Lenses & Ophthalmic Optics revenues growth forecast (in%);
Source: Investors Day Presentation 2015 and own calculations;



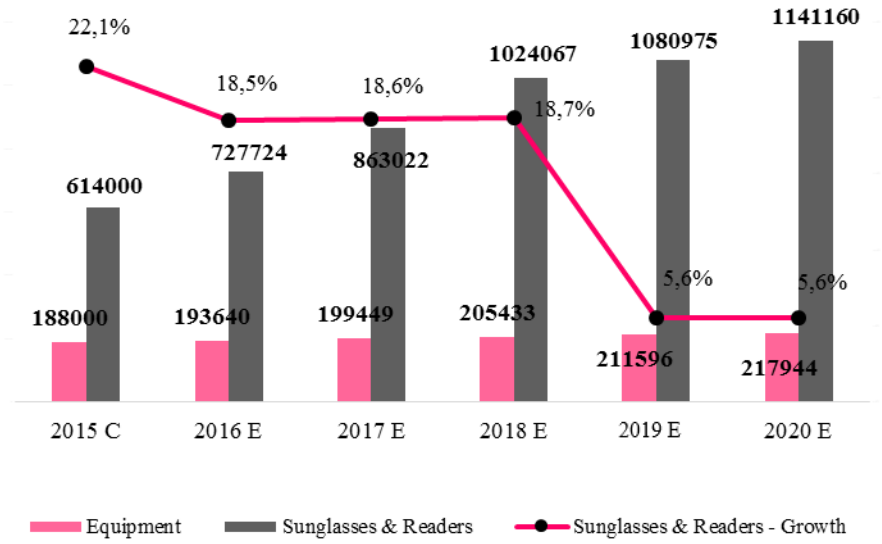
In the Equipment sub-segment, growth forecast is align with the overall ophthalmic optics industry, as a result it is estimated that Essilor will maintain its 36,5%[22] market share in this business activity. The commercialization of lenses' production consumables is intrinsically dependent upon the number of lenses sold each year. The same goes for the sale of surfacing and coating machines, however, laboratories became less prone to invest in innovation during economic downturns, therefore, there is some tenues degree of cyclicality associated with it. This information is disregarded during the forecasting exercise, due to the lack of information and given the very limited degree of impact in overall revenue forecast.

For the Sunglasses & Readers division, growth estimates are carried out in accordance with the reported targets and industry forecasts. In one hand, demand

[22] Source: Essilor's Annual Report, 2014 and own calculations and estimates;

magnitude for non-prescribed reading glasses is generally very modest and growth is align with that of the ophthalmic optics industry and therefore 3%[23]. On the other hand, sunglasses sales are increasing 6% yearly[23]. This is a much higher rate, since demand is very often not related to an existing medical condition but instead associated with prevention, protection and even fashion concerns. By 2018, Essilor intends to collect EUR 1,1 billion in revenues from the sale of sunglass lenses alone[23]. To do so, it need to register a CAGR of 21,5%. Essilor has proven its engagement to increase presence within this segment, with the launch of new product lines (*SUNprotection, CITYtrends* and *ACTIVlife)*. Moreover, photochromic lenses branded as *Transitions* continue to be very popular among consumers. There technology is coupled with that of other product lines (for example: *Varilux* progressive), and allows sight correction, UV protection and shading in accordance with light intensity.

Exhibit 9: Equipment and Sunglasses & Readers segments revenues forecast (in thousands of euros) and growth forecast (in %);
Source: Investors Day Presentation 2015 and own calculations;

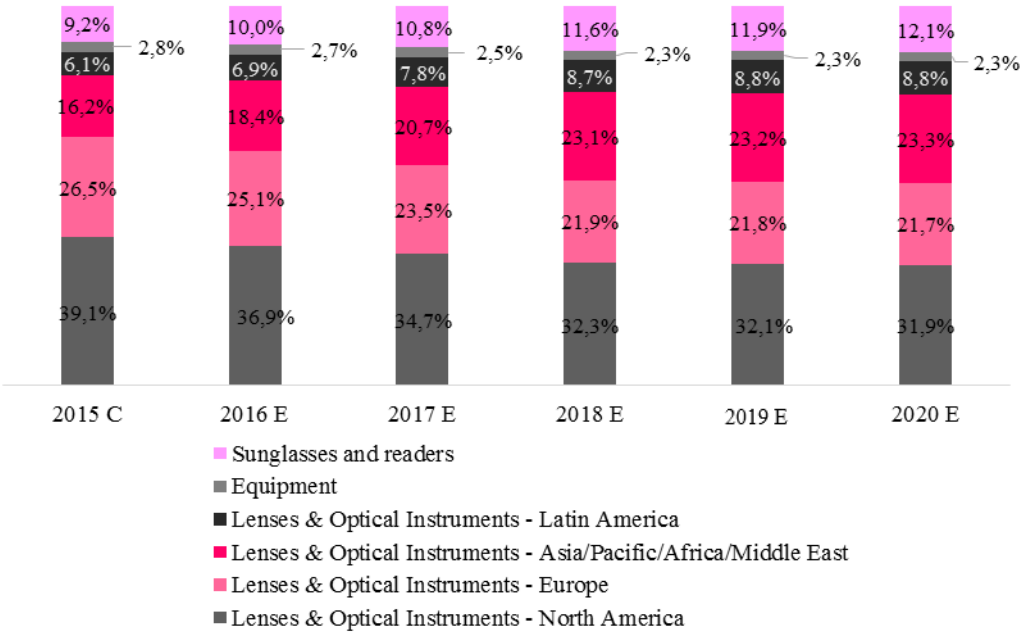


Consumers in this segment are very sensitive to marketing pushes, therefore Essilor is expected to increase significantly its advertising activities. After 2018, specific goals are not defined, so growth projects are matched with those of the sunglasses sector and market share estimated to stand at around 11,5%[24].

[23] Source: Essilor's Annual Report, 2014, Investor's Day Presentation 2015 and own calculation and estimates
[24] Source: Essilor's Annual Report, 2014 and own calculations and estimates;

Exhibit 10 presents the estimated contribution of each segment and region for the upcoming years. Contribution from emerging countries in the Lenses and Ophthalmic Optics division is expected to increase by 43,8% for Asia, Africa, Pacific and Middle East and by 44,3% for Latin America. North America is expected to remain the most important revenues generator in the next 5 years. Contributions from the Equipment division is estimated to remain constant, while, the sunglasses and readers sector increases its dominance up to 31,5%.

Exhibit 10: Revenues contribution forecast by segment and region in %;
Source: Essilor's 3Q 2015 report and own calculations and estimates.



4.1.2 Main Expenditures[25]

4.1.2.1 Operating Expenditures

4.1.2.1.1 Past Records

Over the last few years[26], Essilor reported a CAGR in cost of sales of 6.3%. Such reflected positively into the ratio cost of sales to revenues (it improved from 44,51% at YE2010 to 41,55% at YE2014). This situation is indicative of operational enhancements, namely in the consumption of raw materials, resulting from the implementation of a quality-control management system[27]. Moreover, there is the speculative argument that

[25] Please note that from this section onwards the analysis is no longer broken down by division because such information is not disclosed by the company;
[26] Beetween 2010 and 2014;
[27] Source: Essilor's Annual Report, 2014;

the company is benefiting from enhanced negotiation power among its many suppliers, being the market leader in the Lenses & Optical Instruments sub-segment. At YE2014, Essilor reported EUR 2,35 billion in cost of sales (an increase of 5,7% y-o-y) that lead to a reported gross profit of EUR 3,31 billion (an increase of 16,8% y-o-y). As expected, the cost of sales is the main component of total operating expenditures, (exhibit 11).

Cost of sales englobes mostly the cost of goods sold. Very little information is provided by the company on this matter but in its core business, the following are the most important raw materials used: glass (to produce mineral lenses), polymerizable thermoset resins and injectable thermoplastic resins (both to produce organic lenses that are significantly thinner). The price of such production components tends to be steady and consistent as demand is very constrained to these particular usages. Additionally, trends and external factors inflict very little volatility on them. Personnel costs have been increasing significantly, given the company's expansion. From 2013 to 2014, the number of employees increased 5,3% which brought total expenses to EUR 1,7 billion (a y-o-y escalation of 9,1%), more than half of the total cost of sales[27].

R&D activities are the source of competitive advantages for Essilor. Its cost amounted EUR 188 million[27] or 4,1% of total operating expenses at YE2014. Nevertheless, around 40% of total revenues were originated by the commercialization of products that were launched less than four ago[28]. This indicates well the high importance of such investment. Essilor operates three research centres worldwide (in Singapore, Dallas and Paris) and maintains partnerships with universities. Innovation focus is on new materials and coatings, resulting in a portfolio of 7200 patents and in the launch of around 300 new products each year[28].

Selling and distribution expenses represented at YE2014, 29,5% of total operating expenses, correspondent to EUR 1,4 billion[27]. As shown in exhibit 11, this item has been registering an increase in its importance. The Lenses and Optical Instruments division is responsible for the delivery of around 1 million lenses daily. Each pair of lenses is a customized product that needs to match the ordered prescription. Monitor and track such activities worldwide in a growing environment requires substantial investments to ensure customer´s satisfaction. Going further, manage the internet sales platform is expected to

[28] Source: Investor's Day Presentation 2015;

represents a new operational challenge. Essilor is currently focused on investing in its consumer marketing strategy, for reasons already presented[29] and recorded expenses to be EUR 150 million during 2014[30].

The item other operating expenses represented 15,5% of total operating expenses and reached EUR 717 million at YE2014[30],(no further details available).

Exhibit 11: Total operating expenses by category in %;
Source: Essilor's Annual Reports of the corresponding year;

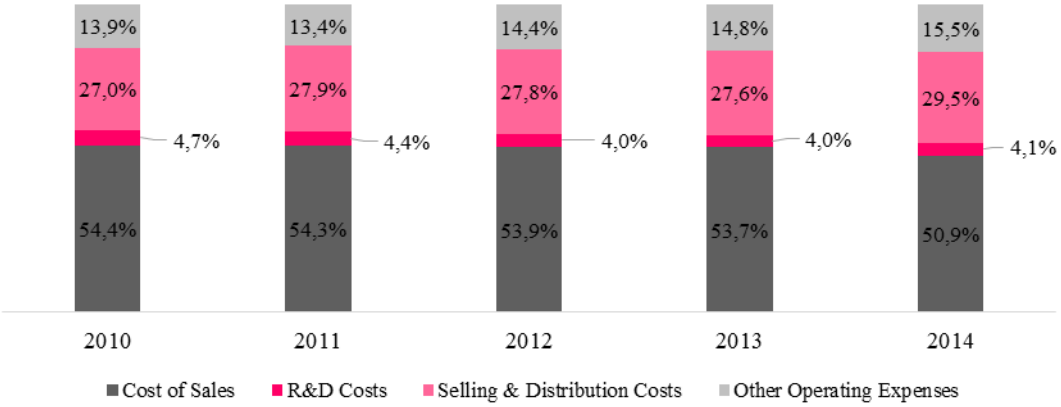
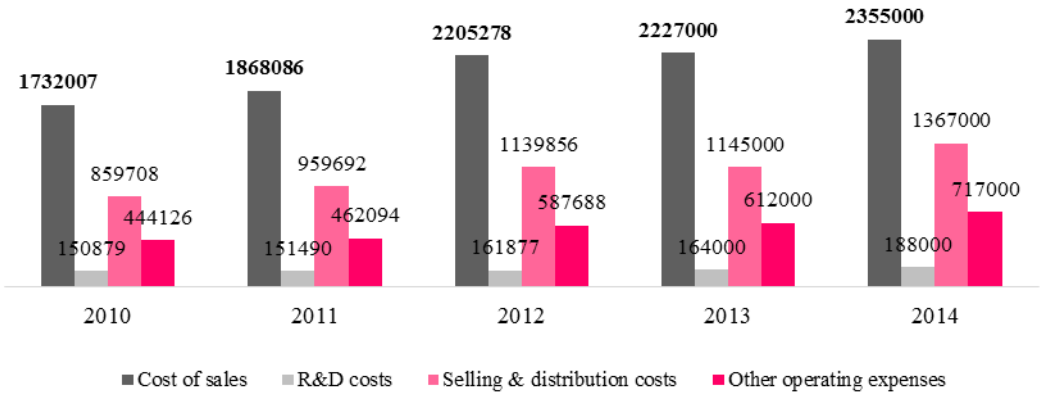


Exhibit 12: Operating expenses by type (in thousands of euros);
Source: Essilor's Annual Reports of the corresponding year;



4.1.2.1.2 Projections

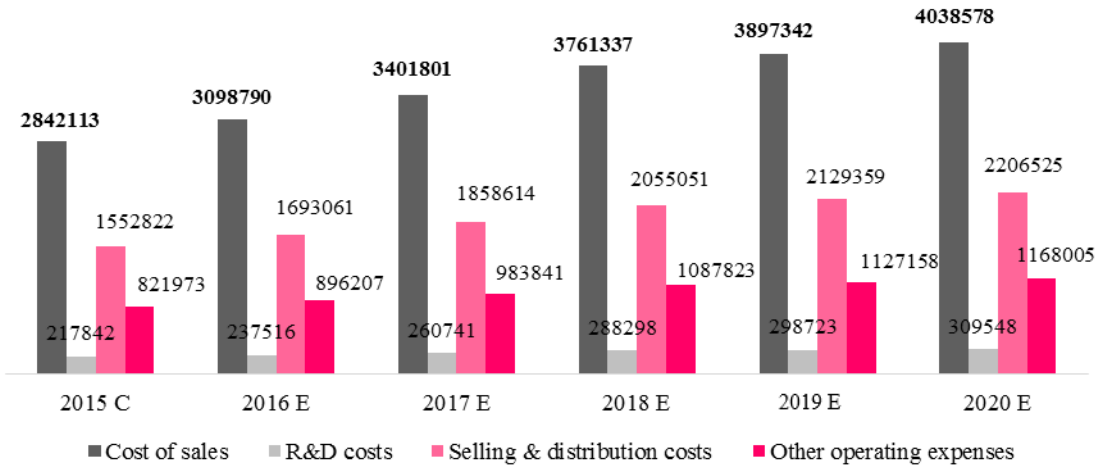
The forecasting exercise of operating expenses was done on a consolidated basis, information by segment not disclosed. The possibility of allocating it based upon revenues contribution was still an option, but it was found not to bring any added value to the exercise. The Lenses and Optical Instruments division is expected to remain the

[29] Please refer to section 4.1.1.2.1;
[30] Source: Essilor's Annual Report, 2014;

main revenue's contributor[31], moreover, sub-segments represent different product categories and trends are all aligned.

It exists a different rationale behind each operating expense, still, the items were projected using revenues as the driver. The forecast ratio was obtained by taking the average percentage of the operating expense over revenues of the last two years[32]. This was a way to smooth results from any non-recurrent alteration that might have occurred during 2014. Taking into account the lack of public information available about what type of particular costs are incorporated in each parcel and considering the stable records of spending over revenues throughout the years, this seemed to be a suitable assumption. Exhibit 13 presents the summary forecast of each operating expense, (cost of sales, R&D, S&D and Other account respectively for: 8,0%; 3,3%; 23,4% and 12,4% of revenues).

Exhibit 13: Operating expenses by type (in thousands of euros);
Source: Own calculations;



4.1.2.2 Capital Expenditures

4.1.2.2.1 Past records

Capital Expenditures (CAPEX) include both net investments on PP&E and intangible assets. It accounts for the purchases of new machinery and both expansion and construction of building facilities to support the expanding activities of the firm. Between 2010 and 2014, Essilor registered a CAGR in CAPEX of 8,2%. During 2014, the bulk expenditure in this item was channelled towards the construction of new regional

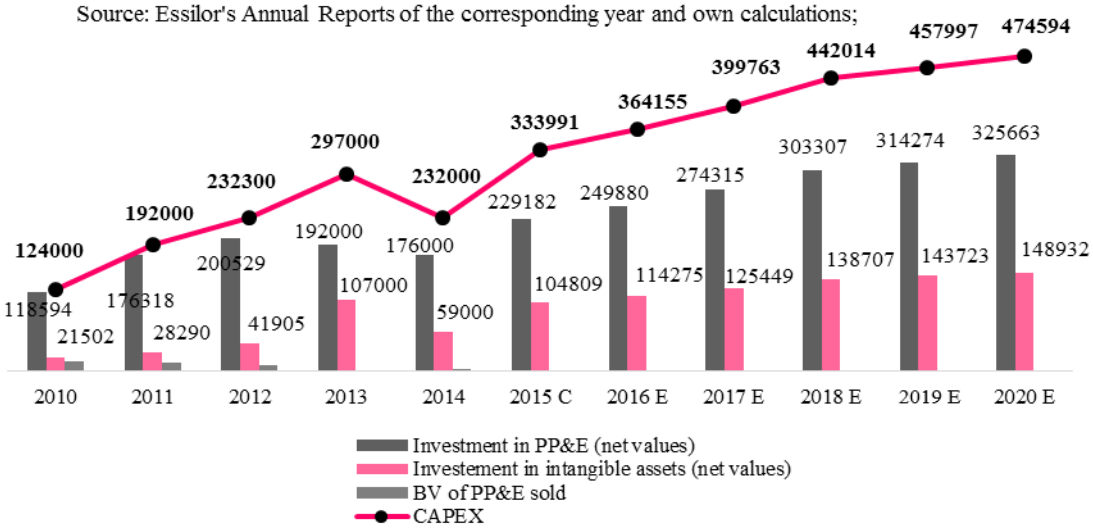
[31] Please report to section 4.1.1.2.1 for detailed information;
[32] 2013 and 2014;

headquarters, distribution and R&D centres. Additionally, it included as well licenses and patents acquisitions[33].

4.1.2.2.2 Projections

Revenues were the considered drive to estimate future CAPEX. The reported past ratio between the two items is steady, due to the existing intrinsic relation between them. As such and given that long-term future growth must be accompanied by investments in equipment and infrastructures that are able to accommodate the increasing demand this was the considered hypothesis. Exhibit 14 illustrates both the past and future projections for CAPEX by source. During the forecasted period, investment in net property plant and equipment and net intangible assets is expected to represent, 3,5% and 1,6%[34] of revenues respectively.

Exhibit 14: Capital expenditures (in thousands of euros);
Source: Essilor's Annual Reports of the corresponding year and own calculations;



4.1.2.3 Depreciations and Amortizations

4.1.2.3.1 Past records

Traditionally, depreciation and amortizations are very aligned in percentage with the value of gross PP&E in the previous year. However, 2014 was an exceptional year with Essilor reporting EUR 451million, an increase of 82,6% in relation to 2013. No rationale was provided by the company for such occurrence and at end 1H2015 results,

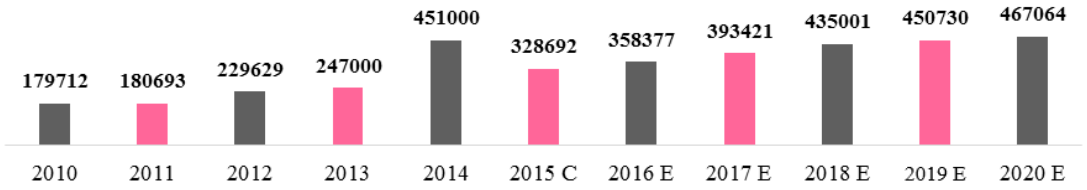
[33] Source: Essilor's Annual Report, 2014;
[34] Average reported ratio between 2013 and 2014;

came to prove that this was a onetime occurrence, (depreciations and amortizations accounted for EUR 164 million, down 27,4% in relation to end 1H2014).

4.1.2.3.2 Projections

Future depreciations and amortizations were modelled using the historical relation with gross PP&E in t-1 and are expected to account for 24,7% of it. This ratio represents the reported value for 2013 alone, the average with 2014 was disregarded in order to avoid and overestimation of depreciations and amortizations that would distort upwards the FCFF.

Exhibit 15: Depreciations & Amortizations (in thousands of euros);
Source: Essilor's Annual Reports of the corresponding year and own calculations;



4.1.2.4 Net Working Capital

4.1.2.4.1 Past Records

Past records show a very consistent relation between the working capital requirements (WCR) and revenues, (around 21%). The most relevant item is trade receivables, followed by inventory. Both registered a CAGR of 7,9% and 9,2% respectively, between 2010 and 2014, consistent with a company expanding activities worldwide. Trade receivables grew in line and in the same proportion as revenues, meaning that the last item was the driver and not the driven, (by for example an intensification of customer financing activities). As a result, receivables turnover presented very steady results in the last few years and so has the days of sales outstanding (DSO). Inventory levels registered progressive increases, however, in 2014 such was reflected in a slight deterioration of inventory turnover and in an increase of days of inventory on hand (DOH). This was caused by the consolidation of *FGX International* that experienced some issues with its inventory level and lead to an unusual increase in Essilor's levels of goods for resale[35]. Trade payables is the third most relevant component of WCR and also has been registering steady increases. Despite this, trade payables turnover has been decreasing slightly and days of payables increasing, which is indicative of the negotiation power Essilor's has among its suppliers, as the company does not suffer

[35] Source: Essilor's Annual Report, 2014;

from liquidity issues. In 2014, the total WCR amounted to EUR 1,2 billion, (a 12% increase in relation to 2013).

4.1.2.5 Projections

The forecast of WCR results from the compounded projections of each individual item that it comprises. Apart from inventory, trade payables and receivables it also englobes customers and suppliers prepayments, income tax assets, taxes payables, deferred income, accrued tax and personnel expenses and other payables and receivables[36], (appendix 4). The forecast driver used for each item was either revenues or cost of sales. The average ratio of the last two years[37] was taken and then multiplied by the number of days in the fiscal calendar. All items reflect consistency with its driver and therefore this was the chosen way to model them. Essilor did not reported any particular trends for this items. Exhibit 16 and table 1 present a summary forecast of total WCR and some of its components.

Exhibit 16: Records and forecast of WCR items (in thousands of euros);
Source: Essilor's Annual Reports of the corresponding year and own calculations;

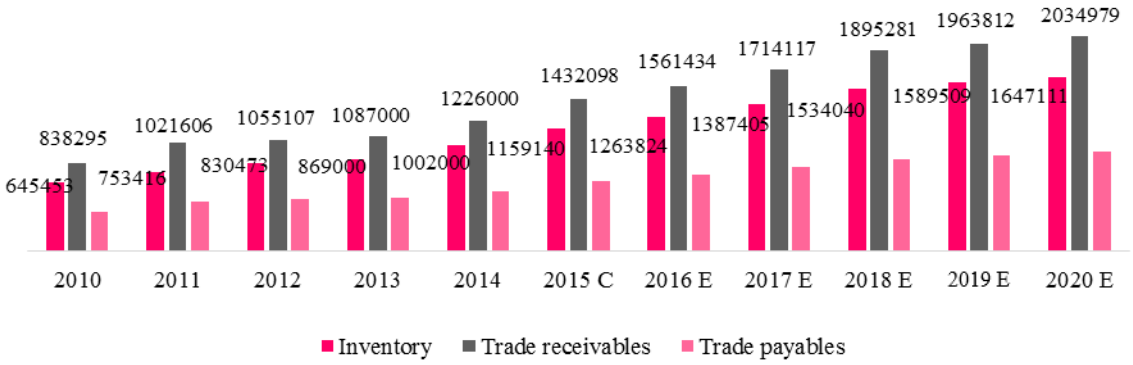


Table 1: Record and Forecast of WCR and WCR investment
Source: Essilor's Annual Reports of the corresponding year and own calculations;

(In thousands of euros)	2013	2014	2015 C	2016 E	2017 E	2018 E	2019 E	2020 E
Total WCR	1056000	1181000	1386052	1511229	1659003	1834343	1900670	1969548
WCR investment	50206	125000	205052	125177	147774	175340	66327	68878

[36] Please refer to appendix 4 for a detailed analysis and forecast of each item;
[37] 2013 and 2014;

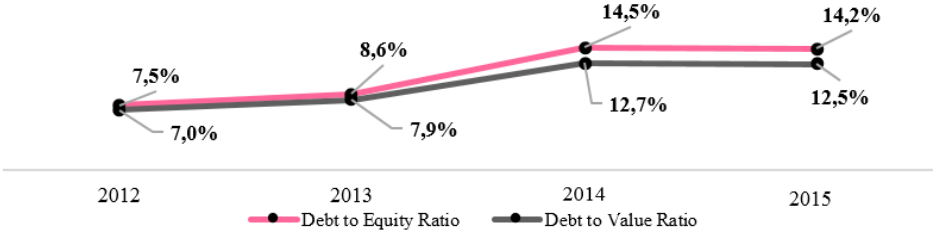
4.2 Main Assumptions

4.2.1 Capital Structure and Net Debt

Understanding Essilor's capital structure over the last few years was key both to decide the valuation methods to follow and to define the cost of capital. To do so, both equity and debt where computed at market values (MV). The first was obtained by multiplying the year end closing price by the number of outstanding shares in the same moment, (MV of equity at YE2015: EUR 24,8 billion). For the second, it required a separation between traded and non-traded debt. The value at which outstanding bonds were trading in the market at close year-end was gathered and then multiplied by its issuance value. For the remnant, that included for example, commercial paper, private placements and bank loans, a synthetic one-coupon bond was created. Maturity was the weighted average registered by the items, interest expenses represented the bond's coupon, the cost of debt denoted the discount rate, and the book value of debt replaced the issuance value, (MV of debt at YE2015: EUR 3,5 billion). From this analysis it was possible to conclude that Essilor´s debt to equity ratio in market value maintains a steady trend and has a target value. In 2014, the ratio suffered a slight increase resulting from the issuance of bonds as a mean to finance the strategic acquisition of both *Coastal* and *Transitions Optical*. Essilor already announced its intention to deleverage progressively to its original debt values[38]. Moreover, at the end of 2015 the ratio had already registered a declined, as the market incorporated in its expectations the outcome of such transactions. As a result, to compute the cost of capital, the considered target debt-to-value ratio was assumed to be the average value between 2012 and 2015, (about 10,9%). Exhibit 17, presents the evolution of both debt-to-equity and debt-to-value ratios.

Traditionally, Essilor's net debt is positive and somewhat steady. Future debt was modelled only according with the schedule payments, while bank overdraft and other short-term borrowings were assume to rebalance every year.

Exhibit 17: Ratios D/E and D/V at market values (in percentage);
Source: Essilor's Annual Reports of the corresponding year and own calculations;



[38] Source: Essilor's Annual Report, 2014;

4.2.2 The Cost of Equity

Essilor's cost of equity was computed by applying equation 10 of the literature review and the value obtained was 5,1%. The equation inputs where estimated by applying the methodology presented below.

4.2.2.1 The Risk-Free Rate

As mentioned in the literature review, within a European context the proxy for risk-free rate is the YTM on a German government bond at a given time and for a specific horizon. As such, to estimate the cost of equity for Essilor it was collected the YTM for a 10 year's zero-coupon German bond on the 4th of December 2015, that was 0,69%[39]. This way it was ensured both currency and time frame consistency with the constructed valuation model. Europe is now facing a very low interest rate environment that without a doubt influences valuation results upwards.

4.2.2.2 The Market Risk Premium

The MRP used in this model resulted from Damodaran's yearly publication that estimates its value for each country. This assumption implied a trade-off, either to follow a currency and risk-free rate coherent analysis or to consider data from a longer time frame and a diversified composition of the stock market. The last seemed to be the better and more reliable path to follow. Short-time frame estimations are very susceptible to be skewed, (the standard error is very large) and there is even the possibility of obtaining a negative value for the MRP which is not consistence with reality and with the investors' risk appetite[40]. My attempt of estimation considered only 19 years of monthly data[41] and it compared CAC40 and Euro Stoxx 50, against the risk-free rate. The values obtained using an arithmetic average were respectively 3,2% and 1,5%, very different results than what literature review suggest to be MRP for France. Damodaran's model uses inputs from the U.S market (S&P 500 returns and U.S treasury bonds yields) since 1928 and adjusts results for each country accordingly with its risk profile, (default spread). The value suggested to represent the MRP for France in 2015 was 6,41%[42] and was the one used to compute both the cost of equity and the WACC.

[39] Source: Reuters Eikon terminal: ticker - DE10YT=RR; function - YLDTOMAT.Close;
[40] Source: Damodaran, (2012);
[41] Source: Reuters Eikon terminal: tickers - .FCHI/ .STOXX50; function - TR.PRICECLOSE; data interval - 31/01/1996 to 30/10/2015;
[42] Source: Damodaran's online publication "Countries default spreads and risk premiums" July 2015;

4.2.2.3 The Beta of Essilor

To estimate Essilor's beta, the methodology followed was the one presented in the literature review. Stock prices for both Essilor and Euro Stoxx 50 were obtained, using monthly data of the last 5 years[43], and returns where computed. After running the regression (equation 12), it was possible to obtain a raw beta of 0,54 to which the Bloomberg's smoothing methodology was applied (equation 13) and a final value for the adjusted beta of 0,69 was reached. This indicates that Essilor´s stock price is less volatile than the market. Euro Stoxx 50 returns were used instead of CAC40, (Essilor integrates both), for its higher degree of diversification. It incorporates several companies from the Eurozone, instead of just France and is therefore less susceptible to country related socks and systematic bias.

4.2.3 The Cost of Debt

Even though retrieving the weighted average YTM of the traded bonds seemed to be a better proxy for Essilor´s cost of debt, given the circumstances this was not the option followed. Essilor only started issuing bonds one year ago to finance two specific strategic acquisitions and this is not a process that is expected to repeat itself soon. Bonds will mature in two, six and nine years from now and are not being traded regularly as the market seems to be unsure of what two expect and how to value them, (bid and ask prices differ). As a result, the considered cost of debt used in this valuation model results from the agglomeration of the risk-free rate, with the estimated default spread for France of 0,55%[44] and for Essilor's long-term debt of 1%[44], in accordance with the last rating releases: Aa2 by Moody´s on September 2015 and A2 also by Moody's on April 2015 respectively[44]. Essilor's cost of debt is therefore estimated to be 2,24%.

4.2.4 The Weighted Average Cost of Capital

Taking into consideration the company's capital structure and the models to be followed, the discount factor used was WACC. All the inputs required to compute it have already been presented apart from the tax rate considered. The company has outstanding debt that confers a tax shield. As such and according to equation 9, that value needs to be subtracted from the cost of debt. The operating tax rate is used as a proxy to the effective tax rate and is 27,85%. This value incorporated the 34,4% standard tax rate in France to

[43] Source: Reuters Eikon terminal: tickers - ESSI.PA /.STOXX50; function - TR.PRICECLOSE; data interval - 30/11/2010 to 30/10/2015;
[44] Source: Damodaran's online publication "Countries default spreads and risk premiums" July 2015 & Eikon Terminal ;

which it was subtracted the average impact[45] of 6,6% of foreign tax rates. All this accounts for a final WACC of 4,7%.

4.2.5 The Explicit Period

Essilor as presented very clear and specific revenue targets to be attained up until 2018 both from the Lenses and Optical Instruments division in Emerging Markets and the Sunglasses and Readers segment worldwide but no information or strategy plan is presented beyond that. During this period, Essilor is therefore expected to outperform the market but afterwards it is assumed to align with the corresponding growth trend of the industry. As such, and for valuation purposes, Essilor's forecasting exercise is carried out for 5 years, starting in 2016 and ending in 2020. The last year has added to allow net debt values to stabilize. Beyond that, expectation are converted into a terminal value, (equation 4).

4.3 The Discounted Cash Flow Valuation Model

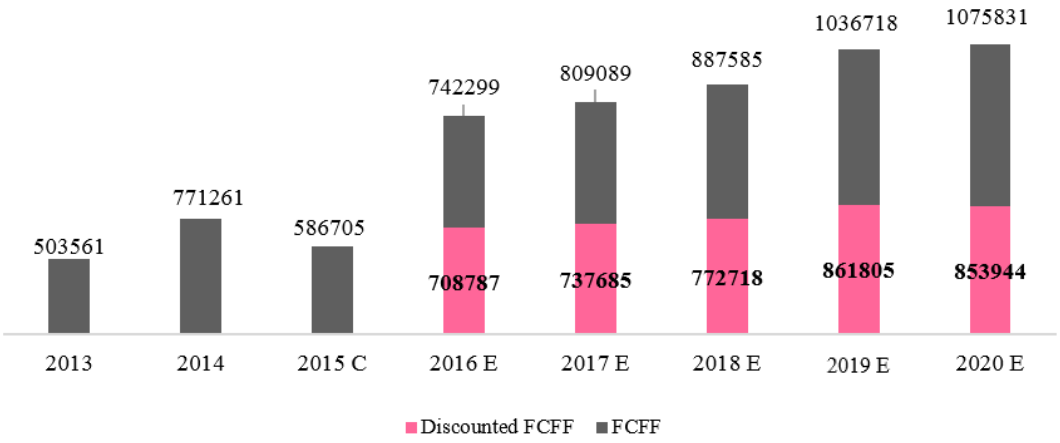
4.3.1 The Free-Cash Flow to the Firm

After presenting the forecasting methodology of the main DCF inputs, is time to determine the FCFF for the explicit period. Appendix 5 presents a summary of the procedure followed to reach the FCFF and the discounted FCFF and Exhibit 18 presents the final values. Tax expenses in this exercise do not correspond to the forecasted ones in the projected income statement (I.S). The rationale behind this is to maintain this analysis exempt of any distortions from income or expenses not prevenient from operations, but that still affect the value of the taxable profit in the I.S, such as interest expenditures and income from cash and cash equivalents.

From 2013 to 2014, the FCFF suffered a very significant increase due to the effect of depreciations and amortizations that presented, as explain before[46], very unusual values not expected to proliferate in the future. As a result, from 2014 to 2015, the FCFF decreased, even though EBIT increased by 18%. Between 2016 and 2020, the FCFF is expected to present a CAGR of 7,7%.

[45] Between 2013 and 2014;
[46] Please see section 4.1.2.3

Exhibit 18: Free-Cash Flows to the Firm forecast (in thousands of euros);
Source: Essilor's Annual Reports of the corresponding year and own calculations;



4.3.2 The Terminal Value

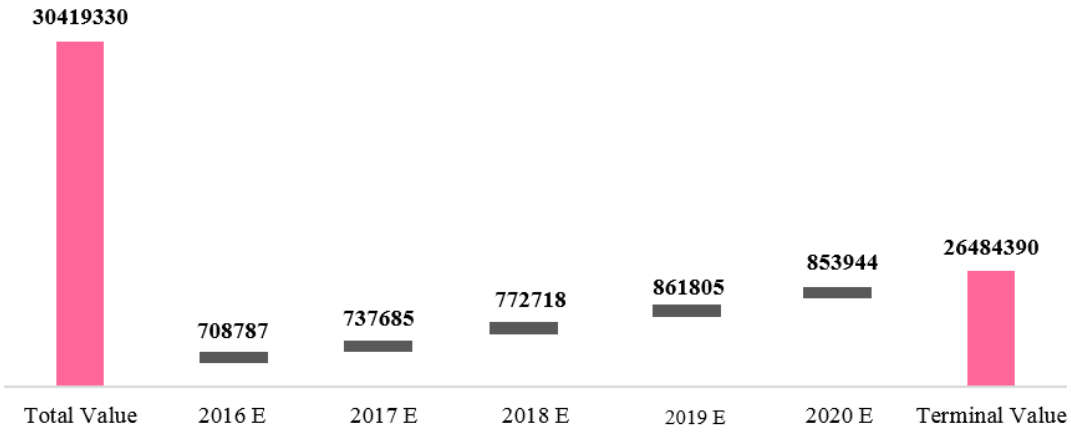
The terminal value, computed using the last fraction of equation 4 in the literature review, required an additional assumption to be compute, the terminal growth rate. As such, the value taken into consideration was 1,6%, that corresponds to the real GDP growth rate in the Eurozone plus the inflation rate in the same area[47]. Eurozone values were considered as an alternative to the world figures, because and even though Essilor is expected to continue increasing operations and drawing a big share of its revenues from in Emerging Markets, Europe and North America are expected to remain the main contributors. Plus, the company will continue being constrained by its home environment in France and within the Eurozone, (influenced for example by regulations, taxation policy and investors' appetite). The expected terminal value for Essilor already discounted using the WACC is of EUR 26,48 billion.

4.3.3 Results

After analysing the growth drivers, applying specific methodologies to obtain the required inputs and incorporating the discounted FCFF with the terminal value, it is possible to conclude that Essilor's value is expected to be EUR 30,42 billion. About 87% of this value is drawn from the computed perpetuity that will be a source of analysis during the sensitivity exercise.

[47] Source: Reuters Eikon terminal: ticker - EUGDPY=ECI, from Eurostat (end Q3 2015);

Exhibit 19: DCF Valuation decomposition (in thousands of euros);
Source: own calculations;



The value of Essilor can be broken down as presented in Exhibit 20, between equity and debt values. This allows the estimation of a target price for Essilor, information upon which investors act accordingly when deciding to buy, hold or sell the company's shares. For Essilor, the estimated equity value is of EUR 27,02 billion and the net debt value is of EUR 3,39 billion. As such, the division of the equity value by the number of outstanding shares[48] leads to an estimated target value for Essilor of 125,04 €, (please see appendix 4).

Exhibit 20: Essilor's equity and net debt valuation (in thousands of euros);
Source: own calculations;

4.3.4 Sensitivity Analysis

This section is meant to provide an overview of the impact that small changes on particular variables, (such as WACC, terminal growth rate and cost of sales), have over the estimated valuation price of Essilor.

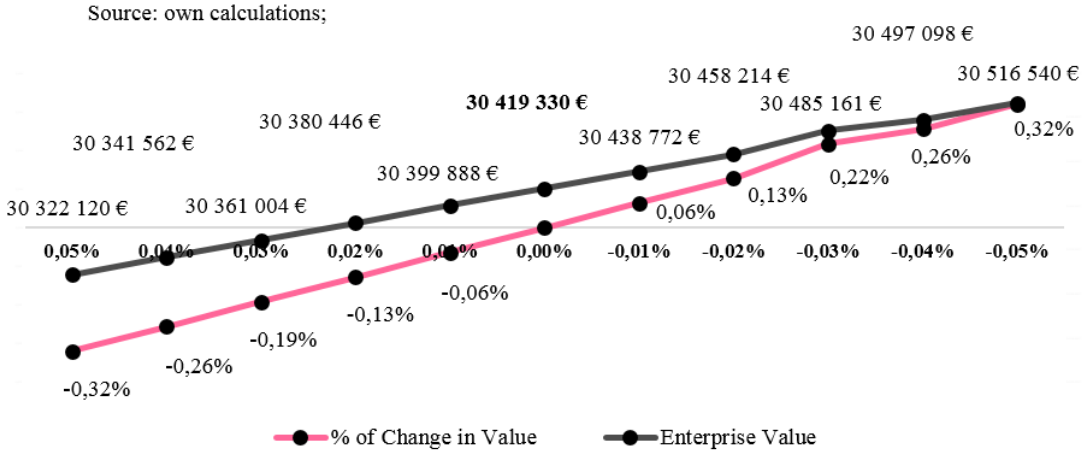
[48] Number of outstanding shares at 31/09/2015, source: Reuters Eikon terminal;

Table 2 contrasts the changes in WACC with changes in the terminal growth rate, while all other assumptions remain equal and presents the corresponding valuation for Essilor. For a positive or negative 0,25% variation in WACC, the original value for Essilor will, respectively, decrease by 6,9% or increased by 10,1%. Similarly, a 0,25% increase or decrease in the terminal growth rate will alter the company´s value, by an additional 7,8% or by less 6,6%, respectively. This indicates that Essilor's value is very sensible to both inputs, but still, a potential change in WACC would affect final results more severely than an alteration in the terminal growth rate.

Table 2: Sensitivity analysis: WACC and terminal growth rate (in thousands of euros);
Source: Own calculations;

WACC/Growth	0,60%	0,85%	1,10%	1,35%	1,60%	1,85%	2,10%	2,35%	2,60%
5,70%	19040741	19864874	20778587	21797324	22940298	24231710	25702484	27392777	29355698
5,45%	20082152	21006748	22037618	23194205	24500998	25989290	27699715	29686014	32020788
5,20%	21238065	22281243	23451638	24774032	26280092	28010938	30020951	32383599	35200602
4,95%	22528253	23712655	25050874	26574958	28326517	30360585	32751507	35602222	39059472
4,70%	23806053	25139625	26656984	28398936	30419330	32790728	35613300	39029342	43248015
4,45%	25616233	27177147	28971032	31054254	33502953	32790728	39963351	44347193	49915857
4,20%	27484608	29300117	31408449	33886665	36841460	40424936	44861619	50497407	57894378
3,95%	29633853	31767661	34275821	37266319	40893093	45383386	51087270	58573619	68832690
3,70%	32131972	34670512	37697232	41367935	45912615	51685586	59262612	69645943	84748969

Exhibit 21: Sensitivity analysis: cost of sales (in thousands of euros);
Source: own calculations;



A concern when valuing Essilor is relatively to the cost of sales. As it can impact significantly gross profit results and consequently the EBIT. As such, Exhibit 21, present a detailed analysis of magnitude changes in the company's value when a variation in the cost of sales occurs. For a 0,01% variation in the cost of sales, Essilor's value changes 0,1% or EUR 19.4 million in the opposite direction. This is a significant alteration for such a small magnitude.

Taking into consideration the volatility of the results presented above and the potential impact of currency effects on revenues, it was found better to perform a scenario probability analysis, in order to understand if according to different conditions, Essilor could still be undervalued by the market or not. As such, six different scenarios where considered in addition to the base case: a light, a moderate and a deep in both bullish and bearish conditions. Exchange rates volatility can influence total revenue growth positively and negatively, therefore, a positive and negative variation of 0,5%, 1,5% and 3% was respectively applied in the scenarios. Moreover, cost of sales was again changed upwards and downwards by 0,2%, 0,4% and 0,6%. The terminal growth rates were only adjusted for the moderate and deep scenarios, and where considered as follows: 1,85% and 2,1% in the bullish scenario, and 1,35% and 1,1% in the bearish scenario. Table 3 presents the summary results of this analysis. It is possible to conclude that Essilor is still considered to be undervalued by the market in five of the six drawn cases, the exception being the deep bearish case. When applying probabilities to each state, (as presented in appendix 6) the weighted average target price obtained for the company (122,33 €) is still aligned with the original valuation per share.

Table 3: Sensitivity analysis: case scenarios results (equity values in thousands of euros); Source: Own calculations;

Type of Case Scenario	Equity Value	Value per share
Light Bearish	26 202 863 €	121,22 €
Light Bullish	27 873 851 €	128,95 €
Moderate Bearish	23 103 014 €	106,88 €
Moderate Bullish	30 744 872 €	142,23 €
Deep Bearish	20 116 115 €	93,06 €
Deep Bullish	34 153 613 €	158,00 €
Base	27 027 684 €	125,04 €
Total	**26 442 990 €**	**122,33 €**

4.4 Economic Value Added Method

Another available tool employed to value Essilor was the EVA model. With both operating income and invested capital growing and being expected to continue, it seemed a reasonable model to use in this exercise. The assumptions and projections presented before to apply the DCF model remain equal, the sole change being the procedure used to arrive at the final value. To implement this mechanism, an extra input was necessary, the return on invested capital (ROIC). To arrive at this value, one must divide the EBIT

minus the tax on EBIT by the conjunction of the WCR with the net values of investment both in PP&E and intangible assets. Afterwards, equation 8 was applied, to the current value of the invested capital it was added the EVA of each year in the explicit period and discounted by the WACC and so was the terminal value. The impact of the modelled organic acquisitions is already accounted for both in revenues and in the employed capital values, therefore do not require a separate assessment. This process lead to an assessment of Essilor amounting to EUR 32,1 billion and a target price of 132,7€, (appendix 6). This value is greater than the one presented by the DCF model. This alterations result from the increase in ROIC that is exhibited after no more organic acquisitions are modelled (from 2018 onwards, including the terminal value). Revenues are still expected to continue increasing, thought, at a much lower rate, but still, while invested capital decreases, as goodwill and acquired intangible assets, are no longer modelled. This depicts well one of the drawbacks of this model presented in the literature review.

4.5 Relative Valuation

4.5.1 The Peer Group

In theory and in a second instance, an estimation for the value of Essilor can also be drawn from the growth expectations depicted by its peer group. The challenge to carry out this task being its definition. As mentioned before, in the activity of producing glasses, spectacles and contact lenses, Essilor competes mainly with *Carl Zeiss* and *Hoya*. However, the first remains privately held, having only a subsidiary trading in the market, *Carl Zeiss Meditec*, a chirurgical medical equipment producer. The second, despite being listed, has its main business focus on the production of electrical components and only a small part of its revenues are prevenient from its subsidiary, *Pentax*, the direct competitor. As such, a wider definition of peer group had to be considered, therefore, a selection of companies operating in the general health care equipment and supplies industry, (as defined by GICs), that portrayed similarities with Essilor in terms of gross and EBITDA margins, ROE and growth expectations was gathered to carry out this valuation process. The main activities of this enterprises range from the production of medical prosthetics, hearing aid devices, dentistry implants and intimate healthcare products to the creation of advanced medical equipment, (such as radiation therapy systems and sterilization solutions). Appendix 8 presents a detailed analysis of each member included in this peer group.

4.5.2 Multiples

The selected multiples to carry out this exercise were the enterprise value to revenues, EBITDA and EBIT, the reason for such being there focus on the operating results generated by each company and the elimination of potential biases arising from different capital structures, payout ratios and for the first two, even considerations related to different depreciation methods followed.

Multiples for each company were retrieved from Bloomberg both referent to 2015 and 2016, the current and the next year respectively. Then the average value was computed and multiplied by the corresponding factor, using projected values, in order to obtain the estimated enterprise value. Afterwards, to reach the equity valuation it was subtracted the value of net debt and divided by the number of outstanding shares[49]. Table 4 summarizes the results obtained.

Table 4: Multiples valuation (enterprise and equity values in thousands of euros);
Source: Bloomberg, retrieved on 16/02/2016 and own calculations;

2015				
Multiple	**Average**	**Enterprise Value**	**Equity Value**	**Value per Share**
with Carl Zeiss Meditec				
EV/Revenue	3,75	24954930	22134930	102,40 €
EV/EBITDA	20,31	29107252	26287252	121,61 €
EV/EBIT	28,13	31075805	28255805	130,72 €
without Carl Zeiss Meditec				
EV/Revenue	3,99	26516023	23696023	109,62 €
EV/EBITDA	21,12	30277788	27457788	127,02 €
EV/EBIT	29,76	32874922	30054922	139,04 €
2016				
Multiple	**Average**	**Enterprise Value**	**Equity Value**	**Value per Share**
with Carl Zeiss Meditec				
EV/Revenue	3,42	24771386	21379740	98,91 €
EV/EBITDA	14,50	22742342	19350696	89,52 €
EV/EBIT	18,18	22000785	18609139	86,09 €
without Carl Zeiss Meditec				
EV/Revenue	3,62	26239185	22847539	105,70 €
EV/EBITDA	14,76	23147404	19755758	91,39 €
EV/EBIT	18,66	22579582	19187936	88,77 €

From this analysis, it resulted a variety of outcomes in accordance with the multiple and the peer group being considered. Moreover, in a first instance, one particular peer was targeted as problematic*, Carl Zeiss Meditec*. In one hand, for the fact that is a listed subsidiary of Essilor´s true peer and it still operates within the health care

[49] Source: Reuters Eikon terminal – nº outstanding shares at 31/09/2015,;

equipment and supplies industry it should be considered. On another hand, its revenues growth is in a much lower level than that of Essilor and the rest of the companies being considered. As a result, multiples considering Carl Zeiss Meditec as a peer present valuation estimates for Essilor lower than otherwise.

The depicted 2015 values result already from the actual factors data, when available. While EV to EBITDA and EV to EBIT give Essilor has being undervalued[50]. EV/Revenues presents it as being overvalued by the market and this happens in both groups, with and without *Carl Zeiss Meditec*. For 2016, multiples are forward looking and the ones matching the DCF and EVA valuation framework. Estimations are however, very negative and all the considered multiples lead to conclude that Essilor is being overvalued by the market. Such is motivated by the lower estimates for GDP growth in emerging countries for 2016, resulting in the review downwards of revenues expectations for some of the peers considered. Despite having ambitious expectations to attain in this markets, Essilor's main source of revenues will keep being Europe and North America. Plus, such macroeconomic factor is expected to pressure more significantly revenues in companies selling products with higher value added such as advanced medical equipment and technology, more dependent on public sector investment. Potentially, the Equipment division might suffer from this review for low, because, as mentioned before, revenues are subject to some cyclicality, yet, it contributes very little to the revenues generation.

Table 5: Multiples valuation (enterprise and equity values in thousands of euros);
Source: Bloomberg, retrieved on 16/02/2016 and own calculations;

2015				
Multiple	**Average**	**Enterprise Value**	**Equity Value**	**Value per Share**
without Carl Zeiss Meditec, Elekta AB and GN Store Nord				
EV/Revenue	4,56	30301584	27481584	127,13 €
EV/EBITDA	23,72	34006301	31186301	144,27 €
EV/EBIT	32,76	36195082	33375082	154,40 €
2016				
Multiple	**Average**	**Enterprise Value**	**Equity Value**	**Value per Share**
without Carl Zeiss Meditec, Elekta AB and GN Store Nord				
EV/Revenue	4,10	29718414	26326768	121,79 €
EV/EBITDA	15,62	24506353	21114707	97,68 €
EV/EBIT	19,46	23557875	20166229	93,29 €

[50] Essilor closing stock price at 31/12/2015: 115, 05€; Source: Reuters Eikon terminal – ticker: ESSI.PA, function: TR.PriceClose

Given the results obtained, a third peer group had to be considered, excluding those companies, namely *Carl Zeiss Meditec, Elekta AB* and *GN Store Nord*. For 2015, the results obtained both from the EV to EBITDA and to EBIT give Essilor has being significantly undervalued by the market, while for 2016, the inverse happens, (table 5). The multiple EV to revenues with this peer group appears to be the one producing the most consistent results in accordance with the other valuation methods presented and is therefore the one to be regarded at. Due to the impossibility of comparing Essilor to its true peer, this exercise leads to very disperse and therefore some downgraded reliability.

4.6Valuation Comparison

The purpose of this last section is to provide a source of comparison for the valuation models developed and presented in this dissertation. As such, the following presents an overview on a similar exercise carried out by *Société Générale* (Cross Asset Research) and published in 19th of February, 2016.

This equity research report considers different valuation methods and assumptions than the ones presented in this study and so final conclusions regarding the proposed valuation and target price differ. Table 6 presents a summary of the key differences.

Table 6: Key valuation inputs for comparison;
Source: Own calculations and Société Générale research note on Essilor (19/12/2916);

Valuation Model Considerations		
	Dissertation	**Société Generale**
Valuation Model	DCF model	Relative Valuation and DCF model
Explicit Period	2016 -2020	2016 - 2018
Target Price	125,04 €	118,00 €
Recommendation	Buy	Hold

Starting with the contrast between the DCF valuation model inputs, the WACC considered by Société Générale (SG) is much higher at 7,4% but additional information regarding the computation of this value is not provided. Then, revenues forecast is also a source of discrepancy, while it was suggested in this dissertation a CAGR between 2016 and 2018 of 6,7%, SG presents more conservative expectations for the same period, with a CAGR of 5,7%. However, this more optimistic growth trend is not translated into greater estimates for the gross margin, EBITDA and EBIT in comparison with those considered by SG. On average, the differential margin presented in this dissertation exercise and SG's is of 5,6% less for gross income, 22,4% less for EBITDA and 18,1%

less for EBIT. The origin of such is in the use of a more conservative approach regarding the estimation of cost of sales, R&D expenses plus S&D costs. In addition, SG estimates depreciation and amortization values to be on average 37% higher than the ones considered. This is a very significant difference and SG might be following up 2014 registered values as a trend that for reasons already explained are not believed to continue. The remaining three critical values left to analyse are CAPEX and working capital, whose estimates by SG are on average 11,2% and 24% lower respectively. Tax rate considerations for SG are very unusual, as they estimate them to be around 35,9% (no further information provided) ,which is higher than the French statutory tax rate. This assumption becomes even odder by noting that on average foreign tax rates decreased tax expenses around 6,6%[51]. Table 7 presents the resultant forecast of the FCFF from both parties. Expectations for 2016 vary very little, however, for 2017 and 2018 the different is accentuated, as SG expects the FCFF to be much higher than the value arrived at in this dissertation. Terminal value considerations are not presented.

Table 7: FCFF values for comparison, (in thousands of euros);
Source: Own calculations and Société Générale research note on Essilor (19/12/2916);

FCFF	2016	2017	2018
Société Générale	889000	1041000	1297000
Dissertation	742299	809089	887585

Even thought, SG arrives at the same target price both through the DCF method and the relative valuation, they present it as being the average value. As such, the peer group used by SG is incorporated by European medtech companies, (no more details available) and the considered multiples were EV/Sales and EV/EBITDA for 2016 and 2017 to which a premium of 30% was applied. The different models and DCF assumptions presented justify the difference in the target price of 7,04€ and the recommended action, still both processes lead to conclude that the market is undervaluing Essilor.

[51] Average impact between 2013 and 2016;

5. Conclusion

This dissertation intended to illustrate the process and outcome of an equity research exercise on Essilor. It is important to acknowledge that all valuation models have upsides and downsides that some require a more complete set of assumptions to work than others and that final results differ.

After a detailed forecast of both income statements, balance sheets and cash-flow items for each year of the explicit period, three valuation exercises were carried out. The DCF valuation model proposed a target price for Essilor of 125,04 €, while the EVA method suggested a higher value for it at 132,7€. The EV to Revenues multiple for 2016 presented the most conservative result with an estimated price per share of 121,79 €. Due to the particular characteristics of each model, the proposed value that is to be regarded for is the one originated by the DCF method. The EVA model was very susceptible to the projected decline in invested capital which resulted in an upwards bias of the final valuation. The relative valuation was a source of uncertainty as the peers considered, while within the health care equipment and supplies industry, operate very distinct activities from those of Essilor.

Essilor is therefore valued in this exercise at EUR 30,42 billion and equity is estimated to account for EUR 27,02 billion. As such, the company is considered to be undervalued by the market, with shares trading at 108,45 € in the 23th of February, 2016[52]. The recommendation is to buy as shareholders returns are expected round 15,3%, sourced on both the rise of prices per share and dividend income.

[52] Source: Reuters Eikon terminal: tickers - ESSI.PA; function - TR.PRICECLOSE;

6. Appendix

6.2 Income Statements

6.2.1 Past Income Statement (as reported)

Table 8
Source: Annual reports of the corresponding year;

(In thousands of €)	2009	2010	2011	2012	2013	2014
Revenue	3267978	3891559	4189541	4988845	5065000	5670000
Cost of Sales	-1435333	-1732007	-1868086	-2205278	-2227000	-2355000
Gross Profit	1832645	2159552	2321455	2783567	2838000	3315000
R&D costs	-151221	-150879	-151490	-161877	-164000	-188000
Selling & Distribution Costs	-706619	-859708	-959692	-1139856	-1145000	-1367000
Other Operating Expenses	-381773	-444126	-462094	-587688	-612000	-717000
Contribution from Operations	593032	704839	748179	894146	917000	1043000
Net Restructuring Costs	-11383	-37869	-22646	-25325	-22000	-76000
Compensation Costs on Share Based Payments	-21865	-21717	-23211	-28421	-32000	-39000
Other Income and Expenses from Operations	-8213	-52746	-16760	-24313	-19000	-250000
Gains and Losses on Asset Disposals	-1303	25965	-2470	15626	-1000	544000
Operating Profit (EBIT)	550268	618472	683092	831713	843000	1222000
Cost of Gross Debt	-21657	-11956	-13904	-24063	-26000	-49000
Income from Cash and Cash Equivalents	11275	9289	10507	17037	18000	18000
Foreign Exchange Income	-1714	-3793	-85	-6779	-1000	5000
Other Financial Income and Expenses	942	-4327	-9917	-4173	-11000	-20000
Share of Profits of Associates	25974	31746	27883	23811	22000	3000
Profit Before Tax	565088	639431	697576	837546	845000	1179000
Income Tax Expenses	-166573	-167404	-179396	-207122	-199000	-193000
Net Profit	398515	472027	518180	630424	646000	986000

6.2.2 Projected Income Statement

Table 9: Adjusted past I.S (for non-recurring assets) and forecasted items;
Source: Annual reports of the corresponding year and own calculations;

(In thousands of €)	2012	2013	2014	2015 C	2016 E	2017 E	2018 E	2019 E	2020 E
Revenue	4988845	5065000	5670000	6648000	7248394	7957169	8798161	9116291	9446656
Cost of Sales	-2205278	-2227000	-2355000	-2842113	-3098790	-3401801	-3761337	-3897342	-4038578
Gross Profit	2783567	2838000	3315000	3805887	4149604	4555368	5036824	5218949	5408078
Gross Profit margin	55,80%	56,03%	58,47%	57,25%	57,25%	57,25%	57,25%	57,25%	57,25%
R&D Costs	-161877	-164000	-188000	-217842	-237516	-260741	-288298	-298723	-309548
Selling & Distribution Costs	-1139856	-1145000	-1367000	-1552822	-1693061	-1858614	-2055051	-2129359	-2206525
Other Operating Expenses	-587688	-612000	-717000	-821973	-896207	-983841	-1087823	-1127158	-1168005
Contribution from Operations	894146	917000	1043000	1213250	1322821	1452171	1605651	1663709	1724001
Net Restructuring Costs	-22509	-22509	-22509	-22509	-22509	-22509	-22509	-22509	-22509
Compensation Costs on Share Based Payments	-28421	-32000	-39000	-43864	-47826	-52502	-58051	-60150	-62330
Other Income and Expenses from Operations	-42156	-42156	-42156	-42156	-42156	-42156	-42156	-42156	-42156
Adjusted Operating Profit	801060	820335	939335	1104721	1210331	1335004	1482935	1538894	1597006
EBIT margin	16,06%	16,20%	16,57%	16,62%	16,70%	16,78%	16,86%	16,88%	16,91%
Cost of Gross Debt	-24063	-26000	-49000	-85794	-106620	-105954	-97995	-83235	-76433
Income from Cash and Cash Equivalents	17037	18000	18000	19569	21500	21425	14822	1946	18500
Foreign Exchange Income and Expenses	-6779	-1000	5000	-926	-926	-926	-926	-926	-926
Other Financial Income and Expenses	-4173	-11000	-20000	-11724	-11724	-11724	-11724	-11724	-11724
Share of Profits of Associates	23811	22000	3000	0	0	0	0	0	0
Profit before tax	806893	822335	896335	1025846	1112560	1237824	1387111	1444955	1526423
Income tax expenses (adjusted)	-199686	-193681	-146507	-285698	-309848	-344734	-386310	-402420	-425109
Net profit	607207	628654	749828	740148	802712	893090	1000801	1042535	1101314
Net Profit margin	12,17%	12,41%	13,22%	11,13%	11,07%	11,22%	11,38%	11,44%	11,66%

Table 10: Adjusted past EBITDA (for non-recurring assets) and forecasts / depreciations and amortizations;
Source: Annual reports of the corresponding year and own calculations;

(In thousands of €)	2012	2013	2014	2015 C	2016 E	2017 E	2018 E	2019 E	2020 E
Adjusted EBITDA	1030689	1067335	1390335	1433413	1568708	1728425	1917936	1989625	2064070
EBITDA margin	20,66%	21,07%	24,52%	21,56%	21,64%	21,72%	21,80%	21,82%	21,85%
Depreciations and Amortizations	229629	247000	451000	328692	358377	393421	435001	450730	467064

Please not that for forecasting purposes and in order to construct a more accurate FCFF, reflecting only operational enhancements, net restructuring costs, compensation costs on share based payments and other income and expenses from operations where adjusted as suggested by Damodaran, (2012). Balance Sheet forecasts englobes the original values for net profit due to accounting reasons.

6.3 Balance Sheet Past Records and Projections

6.3.1 Assets

Table 11: Balance sheet asset records and forecasts;
Source: Annual reports of the corresponding year and own calculations;

Assets (In thousands of €)	2012	2013	2014	2015 C	2016 E	2017 E	2018 E	2019 E	2020 E
Goodwill	2086933	2476000	4668000	5342668	5660731	6007520	6388218	6388218	6388218
Other Intangible Assets	621622	732000	1532000	1720489	1812245	1912877	2024034	2027493	2031086
Property, Plant and Equipment	1000558	998000	1154000	1331481	1451729	1593685	1762121	1825837	1892004
Investments in Associates	109838	113000	3000	4000	4000	4000	4000	4000	4000
Non-Current Financial Assets	119583	97000	103000	109000	109000	109000	109000	109000	109000
Deferred Tax Assets	116789	112000	151000	169089	188708	210535	234994	260474	287390
Long-Term Receivables	25052	17000	15000	19950	21752	23879	26403	27357	28349
Assets Under Operating Leases	105383	96000	127000	137455	149868	164523	181912	188489	195320
Other Non-Current Assets	674	1000	1000	1000	1000	1000	1000	1000	1000
Total Non-Current Assets	4186432	4642000	7754000	8835132	9399034	10027019	10731682	10831869	10936367
Inventories	830478	869000	1002000	1159140	1263824	1387405	1534040	1589509	1647111
Prepayment of Suppliers	15719	16000	20000	22278	24290	26665	29483	30550	31657
Short-Term Receivables	1147525	1192000	1327000	1560217	1701123	1867465	2064838	2139499	2217033
Current Income Tax-Assets	55806	67000	56000	76800	83736	91924	101639	105314	109131
Other Receivables	35645	33000	38000	43934	47902	52586	58144	60246	62429
Derivative Financial Instruments	33611	17000	43000	34000	34000	34000	34000	34000	34000
Prepaid Expenses	40651	46000	50000	59524	64900	71246	78776	81624	84582
Marketable Securities	5781	5000	0	0	0	0	0	0	0
Cash and Cash Equivalents	660958	786000	626000	687764	685355	474135	62234	591804	451243
Current Assets	2826174	3031000	3162000	3643657	3905129	4005427	3963154	4632546	4637185
Total assests	7012606	7673000	10916000	12478788	13304163	14032445	14694835	15464415	15573552

Table 12: Balance sheet equity and liabilities records and forecasts;
Source: Annual reports of the corresponding year and own calculations;

Equity and Liabilities (In thousands of €)	2012	2013	2014	2015 C	2016 E	2017 E	2018 E	2019 E	2020 E
Share Capital	38650	39000	39000	39000	39000	39000	39000	39000	39000
Issue Premiums	311622	302000	360000	371000	371000	371000	371000	371000	371000
Consolidated Reserves / Retained Earnings	2940952	3340000	3758000	4471000	4970867	5512986	6116144	6792046	7496133
Treasury Stock	-239044	-304000	-286000	-286000	-286000	-286000	-286000	-286000	-286000
Hedging and Revaluation Reserves	-79647	-83000	-121000	-121000	-121000	-121000	-121000	-121000	-121000
Translation Difference	107628	-131000	236000	508000	508000	508000	508000	508000	508000
Profit Attributable to Group Equity Holders	584008	593000	929000	697360	756308	841461	942945	982266	1037648
Equity Attributable to Group Holders	3664169	3756000	4915000	5679360	6238174	6865448	7570090	8285312	9044780
Minority Interests	256571	285000	345000	362787	387699	416018	447940	479146	512538
Total Consolidated Equity	3920740	4041000	5260000	6042148	6625873	7281466	8018029	8764458	9557319
Provisions for Pensions	204652	209000	281000	300769	321928	344576	368817	394764	422536
Long-Term Borrowings	526237	607000	1521000	1875000	1856000	1629000	1226000	1032000	920000
Deferred Tax Liabilities	148339	165000	383000	460115	543749	636799	741071	849691	964436
Commitments Under Operating Leases	105383	96000	127000	137455	149868	164523	181912	188489	195320
Other Non-Current Liabilities	232544	517000	394000	443000	443000	443000	443000	443000	443000
Non-Current Liabilities	1217155	1594000	2706000	3216338	3314545	3217898	2960800	2907944	2945292
Provisions	126954	131000	274000	272462	277200	282794	289430	291941	294548
Short-Term Borrowings	390012	567000	926000	1166000	1166000	1166000	1148000	1148000	348000
Customer Prepayments	16944	28000	31000	36549	39850	43747	48370	50119	51935
Short-Term Payables	1014675	1060000	1215000	1408754	1535981	1686175	1864387	1931800	2001807
Taxes Payables	75627	63000	58000	75347	82152	90185	99717	103322	107066
Other Current Liabilities	207605	156000	421000	229000	229000	229000	229000	229000	229000
Derivative Financial Instruments	30115	17000	17000	17000	17000	17000	17000	17000	17000
Deferred Income	12779	16000	8000	15190	16562	18182	20103	20830	21585
Current Liabilities	1874711	2038000	2950000	3220303	3363745	3533082	3716007	3792013	3070942
Total Equity and Liabilities	7012606	7673000	10916000	12478788	13304163	14032445	14694835	15464415	15573552

Table 13: Net Debt records and forecasts;
Source: Annual reports of the corresponding year and own calculations;

	2012	2013	2014	2015 C	2016 E	2017 E	2018 E	2019 E	2020 E
Net Debt	330937	420000	1849000	2388236	2371645	2355865	2346766	1623196	851757

6.4 Working Capital Requirements and CAPEX Forecast

Table 14: WCR past record and forecast of individual items;
Source: Annual reports of the corresponding year and own calculations;

Equity and Liabilities (In thousands of €)	2012	2013	2014	2015 C	2016 E	2017 E	2018 E	2019 E	2020 E
Inventory	830473	869000	1002000	1159140	1263824	1387405	1534040	1589509	1647111
Trade Receivables	1055107	1087000	1226000	1432098	1561434	1714117	1895281	1963812	2034979
Other Short-Term Receivables	92418	105000	101000	128119	139689	153349	169556	175687	182054
Prepayment of Suppliers	15719	16000	20000	22278	24290	26665	29483	30550	31657
Other Prepaid Expenses	40651	46000	50000	59524	64900	71246	78776	81624	84582
Other Receivables	35645	33000	38000	43934	47902	52586	58144	60246	62429
Current Income Tax Assets	55806	67000	56000	76800	83736	91924	101639	105314	109131
Trade Payables	489098	502000	564000	660657	720323	790759	874334	905948	938779
Other Short-Term Payables	259028	282000	313000	368816	402124	441446	488102	505751	524079
Customers Prepayments	16944	28000	31000	36549	39850	43747	48370	50119	51935
Taxes Payables	75627	63000	58000	75347	82152	90185	99717	103322	107066
Deferred Income	12779	16000	8000	15190	16562	18182	20103	20830	21585
Accrued Taxes and Personnel Expenses	266549	276000	338000	379280	413534	453971	501951	520101	538949
Working Capital Requirement	1005794	1056000	1181000	1386052	1511229	1659003	1834343	1900670	1969549
Δ in WCR	-7583	50206	125000	205052	125177	147774	175340	66327	68878

Table 15: WRC ratios used to forecast and turnovers;
Source: Annual reports of the corresponding year and own calculations;

	2012	2013	2014	2015 C	2016 E	2017 E	2018 E	2019 E	2020 E
Inventory turnover	2,66	2,56	2,35	2,45	2,45	2,45	2,45	2,45	2,45
Days of inventory on hand	137,45	142,43	155,30	148,86	148,86	148,86	148,86	148,86	148,86
Days of sales outstanding	77,20	78,33	78,92	78,63	78,63	78,63	78,63	78,63	78,63
Days of payables	80,95	82,28	87,41	84,85	84,85	84,85	84,85	84,85	84,85
Working capital turnover	4,96	4,80	4,80	4,80	4,80	4,80	4,80	4,80	4,80

Table 16: CAPEX past record and forecast of individual items;
Source: Annual reports of the corresponding year and own calculations;

Net change of PP&E and intangible assets (In thousands of €)	2012	2013	2014	2015 C	2016 E	2017 E	2018 E	2019 E	2020 E
Investment in PP&E	200529	192000	176000	229182	249880	274315	303307	314274	325663
Investement in intangible assets	41905	107000	59000	104809	114275	125449	138707	143723	148931
BV of PP&E sold	10134	2000	3000	0	0	0	0	0	0
Capital Expenditures	232300	297000	232000	333991	364155	399763	442014	457997	474594

6.5 Discounted Cash Flow Valuation Model

Table 17
Source: own calculations;

(In thousands of €)	2016 E	2017 E	2018 E	2019 E	2020 E
EBIT	1210331	1335004	1482935	1538894	1597006
Tax on EBIT	-337077	-371799	-412997	-428582	-444766
Depreciations and Amortizations	358377	393421	435001	450730	467064
Δ in Working Capital	-125177	-147774	-175340	-66327	-68878
CAPEX	-364155	-399763	-442014	-457997	-474594
FCFF	**742299**	**809089**	**887585**	**1036718**	**1075831**
Terminal Value	35500461				
Discount Factor	95%	91%	87%	83%	79%
PV FCFF	708787	737685	772718	861805	853945
PV Terminal Value	26484390				
Enterprise Value	30419330				

Table 18: Main Assumptions;
Source: own calculations;

(In thousands of €)	
Equity	**27027684**
Debt	**3391646**
nº of shares outstanding	216160875
Value per share	**125,04€**

WACC	**4,7%**
Target D/V	10,9%
Target E/V	89,1%
KD	2,24%
KE (Damodaran ERP)	5,1%
KE (my own ERP)	2,89%
Operating Tax Rate	27,9%

6.6 Sensitivity Analysis

Table 19: Scenario description summary;
Source: own calculations;

(In thousands of €)	Light Bearish	Moderate Bearish	Deep Bearish	Light Bullish	Moderate Bullish	Deep Bullish	Base
			Assumptions				
Currency Effect	-0,50%	-1,50%	-3,00%	0,50%	1,50%	3,00%	0,00%
Adjustment in Cost of Sales	-0,20%	-0,40%	-0,60%	0,20%	0,40%	0,60%	0,00%
Terminal Growth Rate	1,60%	1,35%	1,10%	1,60%	1,80%	2,10%	1,60%
			Valuation				
Equity Value	26203	23103	20116	27874	30745	34154	27028
Value per Share	121,22 €	106,88 €	93,06 €	128,95 €	142,23 €	158,00 €	125,04 €
			Probabilities				
	20%	12,50%	10%	15%	7,50%	5%	30%
Weighted Target Price			**122,33 €**				

6.7 Economic Value Added Model

Table 20: Return on Invested Capital Analysis;
Source: own calculations;

(In thousands of €)	2015 C	2016 E	2017 E	2018 E	2019 E	2020 E
Adjusted Operating income	797056	873254	963206	1069938	1110312	1152240
NC working capital	1386052	1511229	1659003	1834343	1900670	1969549
Investment in PP&E (net values)	229182	249880	274315	303307	314274	325663
Investment in intangible assets (net values)	104809	114275	125449	138707	143723	148931
Invested capital without goodwill and acquired intangible assets	1720044	1875384	2058766	2276357	2358667	2444143
ROIC 1	**46,34%**	**46,56%**	**46,79%**	**47,00%**	**47,07%**	**47,14%**
Goodwill	674668	318064	346788	380699	0	0
Acquired intangible assets	185714	87553	95460	104794	0	0
Invested capital with goodwill and acquired intangible assets	2580426	2281001	2501015	2761850	2358667	2444143
ROIC 2	**30,89%**	**38,28%**	**38,51%**	**38,74%**	**47,07%**	**47,14%**

Table 21: EVA valuation model summary;
Source: own calculations;

(In thousands of €)	2016 E	2017 E	2018 E	2019 E	2020 E
EVA	766526	846184	940712	999951	1037879
Terminal Value	34248109				
Discount Factor	95%	91%	87%	83%	79%
PV EVA	730852	7703867	817790	830279	822868
Terminal Value	25520576				
Enterprise Value	32073178				
Equity Value	28681532				
Value per share	**132,69 €**				

6.8 Peer Group

Table 22: Peer group summary characteristics;
Source: Reuters Eikon terminal;

	Reuters Ticker	Bloomberg Ticker	Industry	Activity	Market Cap. in thousands of €	D/E (B.V)	EBITDA margin	Gross margin	ROE	Rev. Growth
Carl Zeiss Meditec	AFXG.DE	AFX GI Equity	Health Care Equipment & Supplies	Advanced Medical Equipment & Technology	2321389	0,02	14,40%	51,90%	8,50%	0,3%
Coloplast A/S	COLOb.CO	COLOB DC Equity	Health Care Equipment & Supplies	Medical Equipment Wholesale	15084516	0,01	36,80%	68,70%	36,60%	6,8%
Elekta AB	EKTAb.ST	EKTAB SS Equity	Health Care Equipment & Supplies	Advanced Medical Equipment & Technology	2891320	0,91	13,70%	39,70%	8,60%	3,4%
Getinge AB	GETIb.ST	GETIB SS Equity	Health Care Equipment & Supplies	Medical Equipment	5404035	1,13	22,40%	49,20%	8,20%	5,5%
GN Store Nord	GN.CO	GN DC Equity	Health Care Equipment & Supplies	Advanced Medical Equipment & Technology	2724604	0,31	23,60%	61,80%	14,40%	8,1%
Smith & Nephew PLC	SN.L	SN/LN Equity	Health Care Equipment & Supplies	Medical Devices & Implants	14697175	0,42	30,40%	75,60%	12,40%	6,1%
Straumann Holding AG	STMN.S	STMN SW Equity	Health Care Equipment & Supplies	Medical Prosthetics	4419256	0,27	24,80%	78,70%	23,10%	4,5%
William Demant Holding	WDH.CO	WDH DC Equity	Health Care Equipment & Supplies	Medical Equipment, Supplies & Distribution	4789005	0,63	22,20%	72,80%	24,90%	4,3%

Research Note

Essilor holds a dominant positon worldwide in the ophthalmic optics industry. Its business environment benefits from the increasing and aging population worldwide that widens the spectrum of people suffering from conditions such as presbyopia, myopia, among others. Moreover, it profits from increases in the purchasing power of developing countries that enables people to seek sight correction for the first time or update the existing for new technologies. For 2016, Essilor stock has been valued at 125,04 €. This figure exhibits mainly future expectations concerning: 1) two digits revenue growth for ophthalmic optics lenses in emerging markets and sunglasses lenses worldwide; 2) successful implementation of Coastal.com online strategy; 3) continues execution of M&A transactions to reinforce market shares; Furthermore, R&D expenses are foreseen to continue being very profitable, as innovation conducts demand renewals in developed countries. CAPEX and WCR are anticipated to maintain an increasing path, align with expanding operations. Going forward, debt levels are expected to decline, as Essilor pays off the acquisition of both Transitions Optical and Coastal and so are the associated interest expenses. Tax rates are likely to remains steady. All this factors combined solidify, not only Essilor's cash-flows and profit generation capacity, but also, its potential as an investment opportunity with an upside of 15,3% at 23/02/2016. As such, this research note recommendation is to buy.

ESSILOR

Enterprise Value	30,42bn
Equity Value	27,02bn
Target Share Price	**125,04 €**
Market Capitalization	23.5bn
Share Price: 23/02/16	108,45 €

Reccomendation: BUY

Essilor Multiples	2016
P/E	33,67
EV/Revenues	4,2
EV/EBITDA	19,39
EV/EBIT	25,1

DCF/ WACC Assumptions	
WACC	4,7%
KE	5,1%
Rf	0,7%
β	0,69
MRP	6,41%
KD	2,2%
Tax	27,9%
Target D/V	10,9%
Target E/V	89,1%

(In million of €)	2013	2014	2015	2016	2017	2018	2019	2020
Revenues	5065	5670	6648	7248	7957	8798	9116	9447
Adj. EBIT	820	939	1105	1210	1335	1483	1539	1597
Adj. N.I	629	750	740	803	893	1000	1043	1101
Net debt/Equity	10,4%	35,2%	39,5%	35,8%	32,4%	29,3%	18,5%	8,9%
CAPEX	297	232	334	364	400	442	458	475
WCR	1056	1181	1386	1511	1659	1834	1901	1970
FCFF	504	771	587	742	809	888	1037	1076

7. Exhibits Index

8. Tables Index

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