



**CATÓLICA
LISBON**
BUSINESS & ECONOMICS

Equity Valuation Research:

Corticeira Amorim SGPS S.A.

Francisco Emanuel Saraiva Ramos Moreira Gomes

152415025

Advisor: Professor José Carlos Tudela Martins

**Dissertation submitted in partial fulfillment of requirements for the degree of MSc in Finance,
at Católica Lisbon School of Business and Economics, 21st of December 2016**

ABSTRACT:

Equity Valuation Research: Corticeira Amorim SGPS S.A.

By Francisco Emanuel Saraiva Ramos Moreira Gomes

Every single existing asset has value, including companies. The main purpose of Equity Valuation is to determine, at a given time, the value of a specific company, taking into account its past, present and future expected performance, as well as its market position and assets. Thus, Equity Valuation turns out to be very useful namely because it allows investors to take better informed investment decisions. To perform a true valuation, the implied assumptions must hold and be consistent to obtain a trustworthy and reliable scenario of the company's reality. A good valuation needs to consider both internal and external factors that influence, positively or negatively, the company's performance during its professional activity. It is also important to state that there are a large variety of possible valuation methods, which will result in different results and with different accuracy.

The present dissertation is an Equity Valuation of Corticeira Amorim SGPS S.A., the world's biggest cork-transforming company and the most international Portuguese company. While many companies have failed to survive to the financial crisis, Corticeira Amorim managed to succumb it due to its sustainable growth over time. Moreover, after analyzing the company's financial statements, its consistently positive results are noticeable. Having said so, it appears to be a good company to invest in, as its recent and future expected performance seems to be aligned with investors' expectations. This dissertation aims to suggest investors as to whether they should invest, or not, in Corticeira Amorim, taking into account its estimated market value.

ABSTRACT:

Equity Valuation Research: Corticeira Amorim SGPS S.A.

By Francisco Emanuel Saraiva Ramos Moreira Gomes

Todo e qualquer ativo tem um determinado valor, nomeadamente as empresas. O principal objetivo de uma *Equity Valuation* é determinar o valor de uma empresa, num dado período, tendo em consideração a sua performance passada, presente e futura, além da sua posição de mercado e dos seus ativos. Assim, uma *Equity Valuation* é extremamente útil, nomeadamente porque permite aos investidores tomarem decisões melhor informados. Numa boa avaliação, os pressupostos têm de ser realistas e consistentes de forma a representar um cenário realista da realidade da empresa. Uma boa avaliação tem também de considerar fatores internos e externos à empresa que influenciam, positiva ou negativamente, o seu desempenho durante a sua atividade profissional. É importante referir que há uma grande variedade de métodos de avaliação, levando a diferentes resultados e com diferentes graus de precisão.

Esta dissertação incide sobre a *Equity Valuation* da Corticeira Amorim SGPS S.A., a maior empresa transformadora de cortiça do mundo e a empresa Portuguesa mais internacional. Enquanto muitas empresas faliram durante a crise financeira mundial, a Corticeira Amorim conseguiu ultrapassar este período devido ao seu crescimento sustentável ao longo dos anos. Analisando os seus relatórios financeiros, são evidentes os resultados positivos consistentes. Assim, parece ser uma boa empresa para investir devido ao seu bom desempenho recente e ao desempenho esperado no futuro. A dissertação sugere aos investidores se estes devem, ou não, investir na Corticeira Amorim, tendo em conta o seu valor de mercado.

ACKNOWLEDGEMENTS:

A dissertation is, in the majority of cases, the final step of a student's academic path. After many years of persistent effort and much stress, I am able to affirm that many people helped me get over the many obstacles and difficulties I faced throughout my entire personal and academic life.

Firstly, I would like to thank my family for all the support, motivation and important advice transmitted throughout my life that has led to who I am today and what I have achieved so far. Without them, especially my parents Maria João and Francisco, I would not be able to have written the present dissertation. They know everything I have gone through my entire life and they were always by my side.

Secondly, I thank all my friends, that have played a major role in my life. Most of who I am today is because of them. Fortunately, I am surrounded by good and loyal friends, that helped me not only in my academic path but also in my personal life, especially João M., João P., Luis, Gonçalo and Leonardo. We spent a lot of time together, not only at college and those long hours working all night, but also outside the college where we had lots of enjoyable moments.

I would also want to thank professor José Carlos Tudela Martins for all his support, patience, availability and advice he so generously gave me during the whole semester.

Finally, I would also like to thank my girlfriend, Diana, for her friendship, patience and for being such a good person. She knows just as well as my parents do what I have been through and her support has been vital for both my personal and academic development.

TABLE OF CONTENTS:

0. Introduction	1
1. Literature Review	2
1.1. Valuation Approaches	2
1.2. Discounted Cash-Flow (DCF) Valuation	3
1.2.1. Free Cash Flow to the Firm and Free Cash Flow to Equity	5
1.2.2. Terminal Value	6
1.2.3. Weighted Average Cost of Capital (WACC)	8
1.2.3.1. Cost of Equity (Ke)	8
1.2.3.2. Risk-Free Rate	9
1.2.3.3. Beta	10
1.2.3.4. Equity Risk Premium	10
1.2.3.5. Cost of Debt (Kd)	11
1.2.3.6. Debt and Equity Weights	11
1.3. Dividend Discount Model	12
1.4. Relative Valuation through Multiples	13
1.4.1. Price Earnings Ratio (PER)	14
1.4.2. Enterprise Value to EBITDA (EV/EBITDA)	14
2. Overviews	14
2.1. Macroeconomic Overview	14
2.1.1. Global Overview	14
2.1.1.1. Euro Zone	15
2.1.1.2. United States	16
2.1.1.3. Japan	16
2.1.1.4. United Kingdom	16
2.1.1.5. Australia	16
2.1.1.6. Emerging Markets	16
2.1.2. Portugal Overview	17
2.2. Company Overview	18
2.2.1. About Corticeira Amorim	18
2.2.2. Business Activity	19
2.2.3. Business Units and Individual Performance	21
2.2.4. Global Performance	24
2.3. Industry Overview	26
2.3.1. International Market	26
2.3.2. Portuguese Cork Market	29
2.3.3. Wine Industry	36
2.3.4. Construction Industry	40
2.3.5. Legislation	41
3. Methodology	41
3.1. Discounted Cash-Flow	41
3.1.1. Forecast Assumptions	41
3.1.1.1. Sales	42
3.1.1.2. Cost of Sales	43
3.1.1.3. Operational items and EBITDA	43
3.1.1.4. Depreciation	44
3.1.1.5. Taxes	45
3.1.1.6. Capex	45
3.1.1.7. Working Capital	47
3.1.2. WACC	48

3.1.2.1. Cost of Equity	48
3.1.2.1.1. Risk-Free Rate	48
3.1.2.1.2. Market Risk Premium.....	49
3.1.2.1.3. Beta	49
3.1.2.2. Cost of Debt	49
3.1.2.3. Weights of both Debt and Equity	50
3.1.3. Free Cash-Flows to the Firm.....	51
3.1.4. Terminal Value	52
3.1.5. Enterprise Value and Equity Valuation	52
3.1.6. Suggestion	53
3.1.7. Sensitivity Analysis	53
3.2. Dividend Discount Model	54
3.3. Relative Valuation	55
3.3.1. EV/EBITDA	56
3.3.2. Price/Earnings Ratio	56
4. Dissertation vs BPI Equity Research	57
4.1. Operational Components	57
4.2. Capex.....	58
4.3. Working Capital	59
4.4. Cash-flow.....	59
4.5. Wacc.....	60
4.6. Results.....	60
5. Conclusion	61
6. Appendixes	63
6.1. Appendix 1: Adjusted Present Value vs Discounted Cash-Flow.....	63
6.1.1. Adjusted Present Value (APV)	63
6.1.2. APV vs DCF approach	63
6.2. Appendix 2: Income Statement of Corticeira Amorim	65
6.3. Appendix 3: Balance Sheet of Corticeira Amorim.....	66
6.4. Appendix 4: Cash-Flow Map of Corticeira Amorim.....	67
6.5. Appendix 5: BPI's Valuation Profit & Losses - Corticeira Amorim.....	68
6.6. Appendix 6: BPI's Valuation Balance Sheet - Corticeira Amorim.....	69
6.7. Appendix 7: BPI's Valuation Cash-Flow Map - Corticeira Amorim.....	70
7. References	71
7.1. Websites.....	71
7.2. Books.....	71
7.3. Articles	71
7.4. Other sources.....	73

Table of Figures

Fig. 1 - Business Structure of Corticeira Amorim	18
Fig. 2 - Corticeira Amorim's shareholder structure	19
Fig. 3 - Business Units specifications	20
Fig. 4 - Corticeira Amorim's strategy and objectives	20
Fig. 5 - Raw Materials business unit performance	21
Fig. 6 - Cork Stoppers business unit performance	21
Fig. 7 - Floor & Wall business unit performance	22
Fig. 8 - Composite Cork business unit performance	22
Fig. 9 - Insulation Cork business unit performance	22
Fig. 10 - Consolidated business unit contribution	23
Fig. 11 - Consolidated sales by business unit	23
Fig. 12 - Consolidated sales by region	24
Fig. 13 - Corticeira Amorim performance summary	24
Fig. 14 - Net profit composition of Corticeira Amorim	25
Fig. 15 - Corticeira Amorim stock performance	26
Fig. 16 - Work annual cork production	27
Fig. 17 - Number of companies operating on the cork industry	27
Fig. 18 - World cork exports	28
Fig. 19 - World cork imports	28
Fig. 20 - Sales structure per product	29
Fig. 21 - Portuguese cork exports	30
Fig. 22 - Portuguese international balance regarding the cork industry	30
Fig. 23 - Cork export weights compared to total Portuguese exports	31
Fig. 24 - Portuguese cork exports per destiny	31
Fig. 25 - Main products exported (million €)	32
Fig. 26 - Main products exported (thousand tons)	32
Fig. 27 - Evolution of cork stopper exports	33
Fig. 28 - Cork stopper exports to the 6 main countries (million €)	33
Fig. 29 - Exports of construction/decoration materials by main countries of destination ..	34
Fig. 30 - Evolution of Portuguese cork imports	35
Fig. 31 - Main countries of origin of Portuguese cork imports	35
Fig. 32 -Total surfaces area of vineyards in EU 28 (thousand ha)	36
Fig. 33 - Total surfaces area of vineyards outside EU 28 (thousand ha)	36
Fig. 34 - World wine production (thousand hl)	37
Fig. 35 - Wine production against wine consumption	37
Fig. 36 - Main world wine exporters (million €)	38
Fig. 37 - Main world wine exporters (million hl)	38
Fig. 38 - Wine consumption evolution	39
Fig. 39 - Main world wine importers (million €)	39
Fig. 40 - Main world wine importers (million hl)	40
Fig. 41 - Trends in the issuing of building permits in the EU28, in square meters	40
Fig. 42 - Sales historical behavior, ignoring Euro-Dollar ratio gains	42
Fig. 43 - Sales historical growth	42
Fig. 44 - Sales behavior in the forecasted period	43
Fig. 45 - Margin historical data	43

Fig. 46 - Margin increase and cost of sales during the forecasted period	43
Fig. 47 - Operational items historical data	44
Fig. 48 - Operational items in the forecasted period	44
Fig. 49 - Historical depreciation and amortization	44
Fig. 50 - Forecasted depreciations and amortizations	45
Fig. 51 - Historical earnings	45
Fig. 52 - Forecasted Earnings	45
Fig. 53 - Historical Capex	46
Fig. 54 - Forecasted Capex	46
Fig. 55 - Forecasted current items	47
Fig. 56 - Working capital calculation	47
Fig. 57 - Company's historical financing mix	48
Fig. 58 - Wacc calculation	48
Fig. 59 - Cost of equity calculation	48
Fig. 60 - Market risk premium calculation	49
Fig. 61 - Beta	49
Fig. 62 - Interest coverage ratio	49
Fig. 63 - Rating and spread according to the interest coverage ratio	50
Fig. 64 - Cost of debt calculation	50
Fig. 65 - Historical capital structure	51
Fig. 66 - Forecasted capital structure	51
Fig. 67 - Present value of the cash flows	51
Fig. 68 - Terminal Value calculation	52
Fig. 69 - Pondered growth	52
Fig. 70 - Value of the operating assets of the firm	52
Fig. 71 - Price per share calculation	53
Fig. 72 - Current vs fair price and suggestion	53
Fig. 73 - Sensitivity Analysis regarding sales, margin and capex	53
Fig. 74 - Sensitivity analysis regarding wacc and growth	54
Fig. 75 - Present value of future dividends	54
Fig. 76 - Dividend perpetuity and share price	54
Fig. 77 - Peer group used in the relative valuation	55
Fig. 78 - Relative valuation vs DCF results	56
Fig. 79 - EV/EBITDA results	56
Fig. 80 - Price/Earnings Ratio results	56
Fig. 81 - Operational items comparison	58
Fig. 82 - Capex comparison	58
Fig. 83 - Current items comparison	59
Fig. 84 - Changes in net working capital comparison	59
Fig. 85 - Cash flow comparison	59
Fig. 86 - Wacc and related items comparison	60
Fig. 87 - Results comparison	61

0. Introduction

This dissertation will focus on Corticeira Amorim SGPS, S.A. by valuing the company's business, in order to determine which is the value per stock unit, in 2016. By getting the value and comparing it to the market, it will be possible to conclude whether investors should invest, disinvest or keep their position when it comes to investment decisions. Corticeira Amorim SGPS, S.A. is the world's leader operating in the cork industry and the most international Portuguese company due to its exportation level. It belongs to the Amorim Group, representing its core business, majorly held by the Amorim family. It is traded in the Portuguese PSI 20 index on the Lisbon Stock Exchange.

Due to the 2009's global financial crisis, many companies are facing difficulties all over the world and Portugal is not an exception. Many companies have closed doors and many others are fighting for survival. However, there are a few companies that managed to, in a certain way, get over it. Corticeira Amorim SGPS, S.A. is one of those companies that managed to register positive results. Due to its global and international position, the market variety – namely construction and wine -, and sustainable growth over time, it managed to reinforce its' market share, not only in Portugal but also worldwide, strengthening their leading position in the cork-industry.

Corticeira Amorim has five different business units: Raw materials, Cork Stoppers, Floor & Wall Coverings, Insulation Cork and Cork Composites. It is important to mention that Corticeira Amorim is leader in every single cork segment it operates in. Because the company does not provide data concerning each business unit, the valuation will take into account the consolidated data.

In order to get an easier understanding and more pleasant reading, the dissertation's structure will be divided into four parts. Firstly, the Literature Review, where all Equity Valuation related topics will be presented and discussed as well as the used models. Secondly, both company and industry overview so that a closer insight is provided and to contextualize Corticeira Amorim within the cork industry reality. The third part has to do with the Equity Valuation of Corticeira Amorim, measuring the value of the company following the Discounted Cash-Flow approach, using consolidated data, as well as the Relative Evaluation and the Dividend Discount Model.

The fourth and last part consists on a comparison between the dissertation's results and the BPI Bank Equity Research, explaining the main differences.

1. Literature Review

1.1. Valuation Approaches

According to Damodaran (2002) “valuation plays a key role in many areas of finance – in corporate finance, mergers and acquisitions and portfolio management”. When it comes to portfolio management, the referred role depends on the type and philosophy of the investor, whether it is active or passive, as it will have higher impact on active investors. Even among active investors, the impact may be different due to investors' investment preferences, as some prefer to invest in the market while others prefer to invest in specific firms. Therefore, it is vital for active and firm-specific investors, as they trade more and riskier assets. Regarding mergers and acquisition analysis, valuation plays an important role as the bidding firm/investor has to decide which is the fair value to offer before making the bid. On the other hand, the target firm also needs to know which is the fair value in order to accept or reject the offer. In this particular fields, valuation must include synergies on the combined value of both companies, which are gains driven by the merger. Finally, corporate finance's goal is the firm's value maximization. Having said so, a set of financial and strategic decisions have to be delineated to reach that objective. Some management consulting firms started to provide services in order to help companies with the internal process, as “the value of the firm can be directly related to decisions that it makes”.

The focus of this dissertation is to value Corticeira Amorim SGPS, S.A. and its price per share in order to, comparing it to the market, give some piece of advice whether investors should buy, keep or sell the company's stocks. As expected, such decisions will depend on the fact that shares are overvalued, undervalued or correctly valued.

There is a wide range of methods used by analysts to value a company, some are simpler and others more sophisticated. Despite the fact that different methods use different assumptions, they share some common characteristics. From the wide range of possible methods, the DCF (Discounted Cash-Flow) is the most common one among companies to value their businesses.

This referred model consists on “valuing the business according to its expected future cash-flows discounted to present value at the weighted-average cost of capital of the firm” (Luehrman, 1997). Some different existing models are based on the DCF model. Because there may be valuation problems during the process, different approaches may be needed.

Generally speaking, according to Damodaran (2002), an alternative method is the Relative Valuation, which values an asset taking into account the price of comparable assets in the market. By comparable it is considered variables as sales, earnings, cash-flows, company’s size and markets. This method will be used to test DCF’s consistency.

Regarding Corticeira Amorim SGPS, S.A. and taking into account its characteristics and financial reports, the Discounted Cash-Flow is the most suitable approach to be used in the valuation process during the dissertation. For being the most common approach and because the company has a stable capital structure, the DFC approach was the chosen method. The Adjusted Present Value (APV) was an alternative method but it is most suitable for companies with fluctuations on the capital structure in time, which is not the case of Corticeira Amorim SGPS, S.A. Appendix 1 provides a comparison between DCF and APV methods. Due to the company’s healthy financial situation, it has been paying dividends over the last years and, therefore, a DDM (Dividend Discount Model) will also be presented in this dissertation.

1.2. Discounted Cash-Flow (DCF) Valuation

Over the last decades, the Discounted Cash-Flow approach to perform a valuation has revealed to be the best and the most common method. This approach “values the company on the basis of the *net present value* (NPV) of its future free cash flows which are discounted by an appropriate discount rate” (Florian Steiger, 2008). In other words, it is focused on determining the present value of future forecasted cash flows, which are discounted to the present at a specific discount rate, the weighted average cost of capital (WACC), which is the “opportunity cost of the company, representing the return its owners expect to earn on an alternative investment implying the same risk” (Luehrman, 1997). The formula for the NPV calculation is presented below.

$$NPV = \sum_{t=0}^n \frac{FCF_t}{(1+r)^t}$$

Some different Discount Cash Flow models follow the same methodology, taking into account the relation between future and forecasted cash flows and its present value. However, they also have some differences, namely cash flow components, tax effects and discount rates. Among the Discount Cash Flow models, the most commonly used are the Free Cash Flow to the Firm (FCFF), Free Cash Flow to Equity (FCFE) and the Adjusted Present Value (APV). The Dividend Discount Model, which will be used in this dissertation as previously mentioned, is a variant of the Free Cash Flow to Equity model.

It is also important to mention that both forecasts and discount rate calculations are based on certain assumptions according to the specific company under the valuation process, which are according to Janiszewski (2011), the macroeconomic, industry and business information. These assumptions must be accurate and clear in order to obtain an understandable and trustworthy valuation. At this stage, managers face a difficult time as forecasting growth rates and cash flows is a difficult task, not only because there is uncertainty about the company's future performance but also because the macroeconomic environment may face changes that will affect the company and its professional activity's performance. Bad forecasts and mismeasurement of macroeconomic variables may lead to high fluctuations on the company's value, making the valuation less realistic.

The first step of valuating a company using the DCF model is to predict the future free cash flows for the next 5 or 10 years, until it reaches a steady state. Free Cash Flow is simply the amount of cash that the company does not need for reinvestment nor operational purposes. The second step is to determine the discount rate (WACC) in order to obtain the present value of the future cash flows. At this stage, all variables are estimated and ready to calculate the Net Present Value (NPV). The third step is to compute the terminal value, which is "the net present value of all future cash flows that occur after the time period that is covered by the scenario analysis" (Florian Steiger, 2008). The fourth and final step is to sum up the net present values of the cash flows and the terminal value, according to the following formula.

$$\text{Company Value} = \sum_{t=0}^n \frac{FCF_t}{(1+r)^t} + \text{Terminal Value}$$

1.2.1. Free Cash Flow to the Firm and Free Cash Flow to Equity

Both Free Cash Flow to the Firm (FCFF) and to Equity (FCFE) can be used to perform a Discounted Cash Flow Valuation. Free Cash Flow to the Firm is the cash flow that is available to debt and equity holders while the Free Cash Flow to Equity is the cash flow available to the company's equity holders only. The FCFF approach has the enterprise value of the company as outcome while the FCFE outcomes equity value. Because the acquirers buy the whole company with its debt, equity and liabilities, the FCFF approach is the best approach to use. Formula presented below according to Damodaran (1996).

$$FCFF = NOPAT + D\&A - Capex - Increase\ in\ NWC$$

Once the company's earnings before interests and taxes (EBIT) is computed, the Free Cash Flow to the Firm can be calculated by deducting taxes to EBIT. At this stage, the outcome is the Net Operating Profit After Taxes (NOPAT).

EBIT is, basically, the financial result of the period – generally a semester or a year. It is computed by getting the company's operating revenues and deducting its' operating expenses, interest payments and income taxes. The expected and forecasted growth will have impact not only on revenues, but also on expenses, which will influence EBIT directly. The Tax Rate to be used is the effective tax rate, which is the actual tax rate companies have to pay.

Depreciation is the cost associated with the item's useful lifetime. According to Koller et al. (2005), a way to forecast is in relative terms, as a percentage of other items. This way splits in two, as it can be measured as a percentage of revenues or as a percentage of property, plant and equipment (PP&E).

The Capex (Capital Expenditures) is money spent by the company to buy or upgrade physical assets, namely property, industrial buildings or equipment. Typically, it is associated to the company's growth, as higher growth levels are associated to higher Capex. It can be forecasted in relative terms, as a percentage of financial items like revenues or earnings, or using the Capex/Depreciation ratio, as these two items are deeply correlated.

The Working Capital measures short-term financial health. It can be calculated through the difference between current assets and liabilities, which was the used method in the dissertation. If the differential turns to be negative, the company may face difficulties to repay to its debt holders (creditors) in the short run due to liquidity issues. Because the Working Capital depends on many different financial items, forecasting it gets more complex as it is necessary to forecast every single item. According to Koller et al. (2005), the items should be forecasted in relative terms. Therefore, accounts receivables, accrued expenses, property, plants & equipment and goodwill should be forecasted as a percentage of revenues. On the other hand, inventories and accounts payable should be a percentage of costs of goods sold (COGS).

1.2.2. Terminal Value

The company's value is, again, given by summing up the present value of the forecasted cash flows – NPV, discounted using WACC – plus the terminal value. The Terminal Value (TV) represents the present value of all future cash flows that are expected to happen after the forecasted period. Therefore, it is plausible to affirm that it includes earnings that will occur in the distant future that are nearly impossible to forecast (perpetuity). Damodaran (2012) argues that the stable growth model is one of the best approaches to use in this chapter. Under the free cash flow to the firm methodology, the formula to estimate the Terminal Value is given by

$$\text{Terminal Value} = \frac{\text{FCFF}_{n+1}}{\text{WACC} - g_n} ,$$

which can also be used in Free Cash Flow to Equity and Dividend Discount Model. FFCF n+1 represents the expected free cash flow to the firm one year after the terminal year; WACC stands for the weighted average cost of capital; g is the constant growth rate the company will take for perpetuity. In order to compute the terminal value, the company must be growing at a steady state and with expectations to sustain in perpetuity.

Damodaran (2006) argues that there are two essential conditions when making assumptions regarding the growth rate. The first states that the growth rate cannot be higher than the economy's growth rate. The second states that reinvestment must be perfectly coordinated with the growth rate assumption, and vice versa. Moreover, Kaplan and Ruback (1995) argue that Capex should equal Depreciation in the last forecasted year in order to have consistent data in

these two subjects. The reason behind this statement is that the company will only reinvest in depreciated items, keeping its assets value constant in the long run.

The growth rate assumption, constant and related to perpetuity, will have an enormous impact on the company's value. Moreover, it seems to be the majority of the company's value. When determining the company's growth rate, some variables must be taken into account so that a trustworthy and realistic firm value is obtained as outcome, namely the business growth strategy and the industry in which the company operates.

The forecast period assumed in a valuation (n), according to Koller et al. (2005), has no direct impact on the company's value but will instead change the "distribution of the company's value between the explicit forecast period and the years that follow". The longer the forecast period, higher the weight of the present value of the forecasted cash flows on the company's value and lower the weight of the terminal value. The author argues that the appropriate length of the forecast period should be correlated with the period in which the company reaches the steady state. If not correlated, the terminal value will not be a useful tool in the valuation process. Reaching the steady state means that variables as growth rate, capital turnover, wacc and margins get to a certain point in which its behavior does not change. Ohlson and Xiao-Hun Zhang (1999) believe that a forecast period should never be longer than 15 years and Lee (1996) believes that, typically, forecast period should be between 5 and 15 years.

After calculating the Terminal Value, all variables are set to determine the Value of Operating Assets of the Firm, given by

$$\text{Value of Operating Assets of the firm} = \sum_{t=1}^{t=n} \frac{\text{FCFF } t}{(1 + \text{WACC})^t} + \frac{\text{FCFF}_{n+1}/(\text{WACC} - g_n)}{(1 + \text{WACC})^n}$$

The first half of the equation represents the present value of the forecasted cash flows and the second half represents the present value of the cash flows that will occur after the forecasted period (perpetuity). In order to obtain the final equity value of the company all non-equity items must be subtracted so that the outcome is the company's equity value.

1.2.3. Weighted Average Cost of Capital (WACC)

The most common DCF valuation method is the WACC-based DCF approach. The WACC – weighted average cost of capital – is the rate that allows discounting the Free Cash Flows to the Firm and is one of the most important variables of the Discounted Cash Flow model, as small changes in the WACC calculation will lead to big variations on the company's value. According to Koller et al. (2005), “WACC represents the opportunity cost that investors face for investing their funds in one particular business instead of others with similar risk”. To compute the proper discount rate not only a deep analysis to the company's financial structure is needed but also to the market environment. Typically, companies have two different ways to finance themselves, by using Debt or/and Equity. Therefore, the WACC rate must include the required return rates demanded by both debt and equity holders, as stated by the formula presented below.

$$\text{WACC} = \left(\frac{D}{V}\right) K_d(1 - t_c) + \left(\frac{E}{V}\right) K_e$$

$K_d(1-T_c)$ stands for the market after-tax cost of debt, K_e represents the market cost of equity and both D/V and E/V the weights of debt and equity related to the company's value, respectively.

Regarding leveraged companies, the WACC calculation must be done after taxes in order to incorporate the benefits from using Debt as financing because interest expenses do not pay taxes. Having said so, because these benefits are not included in the Free Cash Flow to the Firm calculation, they must be included in the cost of capital. These benefits are known as interest tax shields. Therefore, the company's chosen capital structure also impacts the firm's value, which will be explored in more detail in the equity and debt weights chapter.

1.2.3.1. Cost of Equity (K_e)

The K_e is the expected return on a company's stock. According to Steiger (2008), investors require a certain return for bearing the risk of holding a company's share. Because it is very difficult, or impossible, to predict expected returns, estimations have to be made. The most used estimation tool is the Capital Asset Pricing Model (CAPM), computed following the presented formula.

$$K_e = R_F + (R_m - R_F) \times \beta$$

According to Mullins (1982), the model takes some assumptions, namely that investors are well-informed and risk-averse and that there is a perfect market (no taxes, transaction costs or restrictions on borrowing/lending). Therefore, by diversifying the investment portfolio, the unsystematic (company or industry specific) risk can be eliminated, being the systematic (market) risk the only one investors have to deal with. Having said so, the CAPM model estimates expected return rates taking into account the market behavior and the risk/expected return trade-off.

Analyzing the formula previously presented, R_f stands for the risk-free rate, R_m is the market return and the beta is the degree of correlation between the market and the company. $(R_m - R_f)$ represents the market risk premium (MRP), which is the excess return obtained by bearing the market risk, compared to the Risk-Free rate. In order to compute the cost of equity, all these parameters need to be estimated.

Many authors do not agree with this approach. However, according to Mullins (1982), “CAPM’s deficiencies appear no worse than those of other approaches”, which brings the idea that there is no perfect or better estimation model. On the same hand, it takes into account the inherent risk and measures it so that the outcome is the expected rate of return for investors.

1.2.3.2. Risk-Free Rate

The risk-free rate should be estimated taking into account long-term government default-free bonds, according to Koller et al. (2005). The idea behind this statement is that developed countries situated in the United States or in the Western Europe are likely to have low betas and, therefore, government bonds are believed to be a good proxy to determine risk-free rates. Because Corticeira Amorim SGPS, S.A. is situated in Portugal, this case is applicable to the company, being the 10-year German Eurobond the commonly used proxy for estimating the risk-free rate due to its low risk and high liquidity.

1.2.3.3. Beta

As suggested by Koller et al. (2005), Beta (degree of autocorrelation) is “the stock’s incremental risk to a diversified investor, where risk is defined by how much the stock covaries with the aggregate stock market”, measuring the systematic/market risk. In other words, for higher beta values (higher than 1), the market will have a higher impact on the company’s stock performance. On the other hand, for lower beta values (lower than 1), the market will have lower impact on the company’s stock performance. Furthermore, it is plausible to affirm that investors with higher beta investments will be facing a higher degree of risk, which will be reflected in their higher expected rate of return.

Damodaran (1999) states that the Betas can be computed by using linear regressions with both corporate stock’s return and a chosen market index’s return (used as a proxy for the real market portfolio) data. The outcome of the linear regression is the slope of the regression, also known as beta. When performing these computations, the three variables used for beta estimation have to be very carefully chosen as they influence the estimation accuracy. These variables are the time frame, the intervals (namely monthly or yearly data) and the market index. Damodaran (1999) reinforces the importance of the chosen index and the possible consequences of choosing a bad one. It may happen to choose a market index which is “heavily weighted by a few dominant companies in the market portfolio leading to biased beta estimations”. This scenario is more likely to happen in emerging markets due to the fact that those markets are very dependent on few powerful industries. Because Corticeira Amorim SGPS, S.A. is Portuguese, the chosen index was the PSI 20 index. The author affirms that, to get more accurate betas, monthly data should be used instead of yearly data. Because the company may be levered, a small adjustment has to be made in order to obtain the levered beta, by using the leverage factor.

In order to get accurate estimates, consistent assumptions have to be made and they must hold in time. Real betas are difficult to obtain but good estimates can be made.

1.2.3.4. Equity Risk Premium

As previously described, the Equity Risk Premium is the excess return ($R_m - R_f$) demanded by investors for bearing additional risk (Damodaran, 2008) compared to risk-free assets, as long-term government default-free bonds. Because both cost of capital and cost of equity depend on

this variable, it is of critical importance. According to Damodaran (2008) one possible way to compute it is to use historical data regarding stock performances over the risk-free rate, which is the most commonly used. However, this method also has limitations, namely because emerging markets are relatively recent and have few amounts of available data. Therefore, the standard deviation of the observations would be high.

1.2.3.5. Cost of Debt (Kd)

Most likely, companies finance themselves using more than just one resource, namely through both equity and debt. In order to compute the cost of debt (Kd), variables as risk-free rate, debt's tax advantages and default risk must be considered (Damodaran, 2012). The same author presents two ways to calculate the company's cost of debt, depending whether the company has, or not, long-term bonds outstanding and traded on the market. If the company does have, the inherent yield can be used as a proxy to determine the cost of debt. If the company does not, the company's cost of debt is determined according to its investment rating and, consequently, default spreads. The cost of debt is computed following the presented formula.

$$\text{After-tax cost of debt} = \text{Pretax cost of debt} \times (1 - \text{Tax rate})$$

The first step is to compute the interest coverage ratio. Each interest coverage ratio value is associated to a specific rating, which can be checked with rating agencies as *Standard & Poor's*, *Fitch* or *Moody's*. The interest coverage ratio is a profit/debt ratio that reflects the ability of the company to pay, or not, its debt interests. After having the interest coverage ratio and the corresponding rating, the default spread is taken and summed to the risk-free rate. At this point, the pretax cost of debt is computed. Interests have tax advantages (interest tax shield) and, therefore, those same advantages have to be taken into account in the calculations. That is why the after-tax cost of debt is computed.

1.2.3.6. Debt and Equity Weights

The chosen capital structure also impacts the firm's value. Companies choose its capital structure trying to maximize the "financial mix" advantages. Debt has the ability to increase the value of a company until certain point due to the interest tax shield it provides. However, there is a point in which debt becomes too high and, consequently, the interest tax shield value

becomes smaller than the bankruptcy and agency costs associated to the over-debt level. For this reason, this trade-off between interest tax shields and Bankruptcy/Agency costs regarding the capital structure is so important and managers must focus on this subject. According to Kraus and Litzenberger (1973), and Miller (1977) every single company has an “optimal capital structure” that maximizes financing mix advantages and minimizes the cost of capital. The current capital structure was used in the wacc calculations as it reflects the recent pattern.

1.3. Dividend Discount Model

The dividend discount model (DDM) is, according to Damodaran (2002), “the simplest model for valuing equity”. It consists on determining the stock’s value by forecasting dividends and discounting them to the present.

The author states that “when investors buy stocks, they generally expect to get two types of cash-flow – dividends during the period she holds the stock and an expected price at the end of the holding period. Since this expected price is itself determined by future dividends, the value of a stock is the present value of dividends through infinity”. Having said so, the DDM consists on computing the presented formula.

$$\text{Value per share of stock} = \sum_{t=1}^{t=\infty} \frac{E(DPS_t)}{(1+k_e)^t}$$

The DPS stands for the expected dividends per share and K_e is the previously explained cost of equity, the two basic inputs of the model. The model relies on the fact that “the value of any asset is the present value of expected future cash-flows discounted at a rate appropriate to the riskiness of the cash-flows” (Damodaran, 2002). In order to get the expected dividends, assumptions have to be made regarding both earnings growth rate and payout ratios.

Because the Gordon Growth Model is the simplest and the most commonly used, it will be the one used in this dissertation. Furthermore, and according to Damodaran (2002), it “is best suited for firms growing at a rate comparable to or lower than the nominal growth rate in the economy and which have well established dividend payout policies that they intend to continue into the future”, which seems to be the case of Corticeira Amorim SGPS, S.A.

The Gordon Growth Model, according to Damodaran (2002), can be used in a valuation process regarding a company which is in a “steady-state” and with sustainable growing dividend rate in time. It outcomes the value of the stock in the next period by using expected dividends per share (DPS), cost of equity (K_e) and dividends expected growth rate (g) as inputs, according to the formula presented below.

$$\text{Value of Stock} = \frac{DPS_1}{k_e - g}$$

The author presents a limitation to the model. The growth rate plays a major role in the calculations and the model is highly sensitive to it. If a proper perpetuate growth rate is not computed, the outcome will be misleading. Therefore, it is plausible to affirm that computing the perpetuate dividend growth rate is vital to a trustworthy outcome concerning the company’s valuation.

1.4. Relative Valuation through Multiples

Damodaran (2006) defines relative valuation as “the valuation of corporate assets based on similar assets in the market”. Relative valuation is a simple valuation method. However, to perform a good multiple analysis, it is needed to determine not only which multiples to use and why, but also the guidelines to correctly use them.

There are some items to consider in order to perform a good multiple analysis. First, defining the peer group may be a hard task. The market, the industry, sales, investments, the ROIC (return on invested capital), growth or earnings are just some examples of variables that may be used to determine the comparable companies. Second, there are, among others, equity and enterprise-value multiples, which will be the ones used in this dissertation. The most common multiple regarding equity-based is price-earnings ratio (PER). Regarding the enterprise-value-based, the most common used are the enterprise value-to-EBITDA (EV/EBITDA) or the enterprise value-to-sales (EV/Sales).

Both Morgan Stanley (1999) and Damodaran (2002) stated that, for European companies, the most common multiples are EV/EBITDA and PER. Therefore, concerning Corticeira Amorim GSPS, S.A., these will be the multiples used in the relative valuation.

1.4.1. Price Earnings Ratio (PER)

The price earnings ratio is one of the most common multiples used among corporate finance. Goedhart et al (2005) states that this multiple should only be used in companies where a scenario of consistent capital structure is verified, without heavy fluctuations, as changes on the capital structure will have direct impact on both price and earnings per share.

$$\text{PE} = \text{Market price per share} / \text{Earnings per share}$$

The price earnings ratio value has an inherent conclusion attached. If this value is high, the company is believed to be capable of keep growing in time and that its earnings are solid. Therefore, the cost of capital in this scenario should be low. On the other hand, if the value is low, the opposite scenario is verified. This way, by using multiples, it is also possible to conclude the existing level of risk.

1.4.2. Enterprise Value to EBITDA (EV/EBITDA)

Goedhart (2005) affirms that this multiple is not so exposed to the company's capital structure as the PER is because the enterprise value (EV) includes both debt and equity, while the PER is equity-focused. Therefore, this multiple has one big advantage comparing to the previous one as it allows investors to compare companies with different capital structures.

$$\text{EV/EBITDA} = (\text{Market capitalization} + \text{Market net debt} + \text{Minority int.} + \text{Preferred shares}) / \text{EBITDA}$$

2. Overviews

2.1. Macroeconomic Overview

2.1.1. Global Overview

The year of 2015 showed, surprisingly, a lower growth compared to 2014, which was estimated to be around 3,1%. The growth level of emerging markets was, for the fifth consecutive year,

lower. In fact, it was the lower level since the 2008-2009 global financial crisis, around 4%. The developed markets have grown at a higher rate.

Despite the fact that the US Federal Reserve had normalized the Dollar interests rate, the monetary policy was, globally speaking, of accommodation, while the budget policies reflected lower growth restrictions. Divergences between both the US and United Kingdom, and the rest of developed markets regarding monetary policies, affected the economic performance of several emerging markets. The dominant perspective of gradual increasing interest rates in the US, as well as volatility episodes due to uncertainty related to the impact on emerging market growth, determined even more restrictive conditions worldwide and the acceleration of the capital exit from those emerging markets.

The unfavorable behavior of commodity prices, the slower industrial activity and the decreasing international market indicators characterize the economic context of 2015, especially the final quarter of the year.

Besides, and also related to these events, the conjuncture was influenced by changes in China's growth pattern. The local entities are seeking to balance growth towards services and internal demand, guaranteeing a more sustainable expansion.

The US Dollar registered a general trend of gains.

2.1.1.1. Euro Zone

The Euro zone registered an expansion around 1,5%, higher compared to 2014. However, a higher growth was expected on 2015. The domestic demand improved and, in a certain way, compensated the lower performance of liquid exportations, due to good financing conditions, lower oil prices and global neutral policies. The Chinese and other emerging countries economic deceleration, as well as the high debt level on the private sector, made difficult the economic recovery. Unemployment level decreased around 1%, but big disparities are still observable between the countries. Despite the monetary stimulus implemented, inflation registered marginal positive oscillations.

2.1.1.2. United States

The US, the world's biggest economy, registered a 2,5% growth, higher compared to 2014. It was the sixth consecutive year growing for this economy, making evidences of real estate industry improvement, increasing sales and better conditions regarding labor market. Unemployment level reached a historical minimum, a record 5%. The oil price decrease, on the other hand, must have had an impact on gas and crude extraction investments, penalizing the aggregated domestic demand, especially on the last quarter of the year. The industrial sector showed deceleration, affected by the worldwide deceleration and the USD appreciation.

2.1.1.3. Japan

Japan's growth was higher than in 2014, estimated to be around 0,6%. Confronted with China and rest of Asia softening economy, which are its main exports destinies, entities seek to support economy through monetary policies.

2.1.1.4. United Kingdom

The UK has shown a 2,2% growth, comparing to 2,9% in 2014. The perspective of a referendum regarding to stay, or not, in the European Union and the uncertainty about the result must be one of the factors that penalized the country's economy growth.

2.1.1.5. Australia

Australia managed to grow its economy around 2,4%. However, this increase is lower than the one verified in 2014.

2.1.1.6. Emerging Markets

Regarding the emerging markets, it was observable a growth rate around 4%, which translates on a shrinking growth over the recent years.

China continued its structural changes regarding the growth pattern that began in 2013, having shown a small relaxation in the second half of the year. Estimates point out a 6,9% growth.

India is believed to have had a similar growth than in 2014, around 7,3%.

Brazil and Russia registered severe economic contraction, around 4%.

South Africa's economic growth was lower than in 2014 and was estimated to be around 1,3%.

2.1.2. Portugal Overview

Portugal managed to achieve, in 2015, the second consecutive year growing after the long recession. The country's economy is estimated to have grown 1,7%, marginally above the Euro zone average. However, despite these two consecutive positive years, Portugal could only recover one third of the value destroyed during the global crisis. The increasing activity is linked to a higher internal demand, especially investment, and to gains from external liquid demand, due to good exports performance. The public consumption contributed to growth after four years of contraction. The economic growth was more evident in the first half of the year, decreasing its level on the subsequent semester, probably due to political uncertainty.

Both US and China's developments, as well as Angola and Brazil, affected the external liquid demand. On the other hand, from the positive side, the favorable energetic input prices and the monetary policy followed by ECB (European Central Bank) were favorable variables.

Portugal kept under European Commission's analysis due to excessive debt and, therefore, there was a big effort towards public accounts consolidation. The political uncertainty paused this referred process. Budget deficit decreased 3% of the GDP (gross domestic product) and there was a 5% increase on tax revenues. However, the structural deficit raised.

Portugal achieved higher liquidity levels, concerning current items. Regarding exportations, the country proceeded with market diversification. Unemployment revealed surprising results, as it reached levels around 12,2%. It is still very high but there are observable results as it reached 16% not many years ago. The verified inflation was 0,6%, which is higher than the European average.

2.2. Company Overview

2.2.1. About Corticeira Amorim

Corticeira Amorim GSPS, S.A. started in 1870 in Aveiro, Portugal, created by the Amorim family, and was focused on producing Port wine cork stoppers. The company managed to grow in that segment and expanded its activity to other cork areas and applications. Nowadays it is the world leader in the cork-industry regarding all product segments: wall and floor coverings, corks stoppers, composite cork and insulation cork. It is the most international Portuguese company, not only because of its high exportation level but also because it has different steps of the value chain spread all over the world, including more than 100 countries. Internally, the company is divided into 3 major divisions, which subdivide into 5 business units, as suggested by the figure presented below.

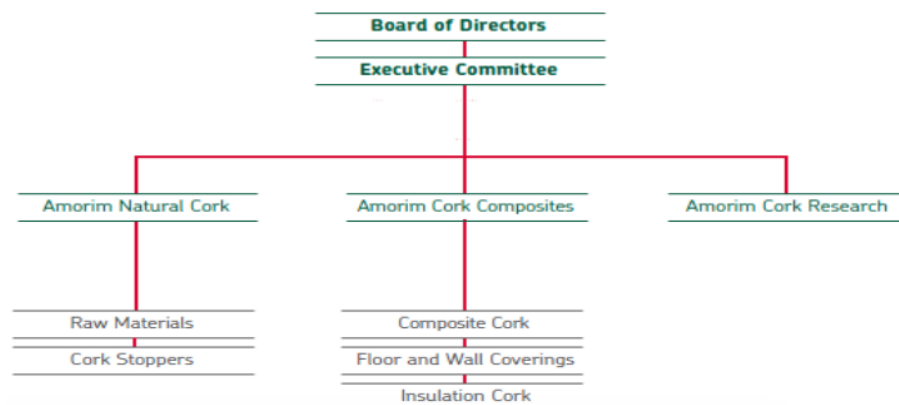


Fig. 1 - Business Structure of Corticeira Amorim

Source: Corticeira Amorim Website

Regarding the shareholder structure, figure 2 illustrates the shareholder's ownership. Corticeira Amorim integrates the Euronext Lisbon Index and is traded on the PSI 20 index, which includes the best Portuguese companies.

Corticeira Amorim SGPS, S.A. Shareholder structure	%
Amorim Capital, SGPS, S.A.	51%
Investment Holdings, B.V.	19%
Amorim International Participations, B.V.	15%
Other	15%

Fig. 2 - Corticeira Amorim's shareholder structure

Source: Corticeira Amorim, annual report, 2015

2.2.2. Business Activity

Corticeira Amorim provides high-quality products and operates in several industries, namely civil construction, wine, automotive and even aeronautic, as cork turned to be a useful resource in multiple areas. It includes not only cork production but also transformation and R&D. A high degree of integration is observable regarding management as Corticeira Amorim controls every step of the value chain, from supplying to after-sales services.

The company also has social and environmental behavior besides its professional activity. As an example, in order to preserve the environment, it helps to plant trees in areas that were devastated by fires.

Raw Materials

- Purchasing, storage and preparation of raw material - cork
- Presence in raw material producing countries: Portugal, Spain, Marocco, Algeria, and Tunisia (without owning the forests)
- Control of the raw material flow across other business units

Cork Stoppers

- World's largest supplier of cork stoppers
- Presence in all the big wine-producing countries: France, Spain, Portugal, Italy, South Africa, Chile, Argentina, Germany, Australia and USA
- Wide cork stopper portfolio, adapted to specific types of wine/champagne

Insulation Cork

- World market leader in producing and distributing insulation cork
- Development and supply of thermal and acoustic insulation solutions used in pipelines, airports, buildings, wine cellars and refrigeration industry

Composite Cork

- World market leader in composite cork segment
- Solution to several applications: sealing, thermal and noise insulation, decoration, electric transformers, natural gas applications, thermal protections and footwear components

Floor & Wall Coverings

- World market leader in producing and distributing wall coverings
- Supplier of innovative flooring solutions using cork coverings for interior decoration

Fig. 3 - Business Units specifications

Source: Corticeira Amorim

The Research and Development department also plays a key role inside the company. It is incorporated in each business unit in order to develop new products, with new characteristics. Furthermore, and for a higher degree of innovation, new market requirements and needs are tailored by “MOR for cork” which is the Market Orientated Research.

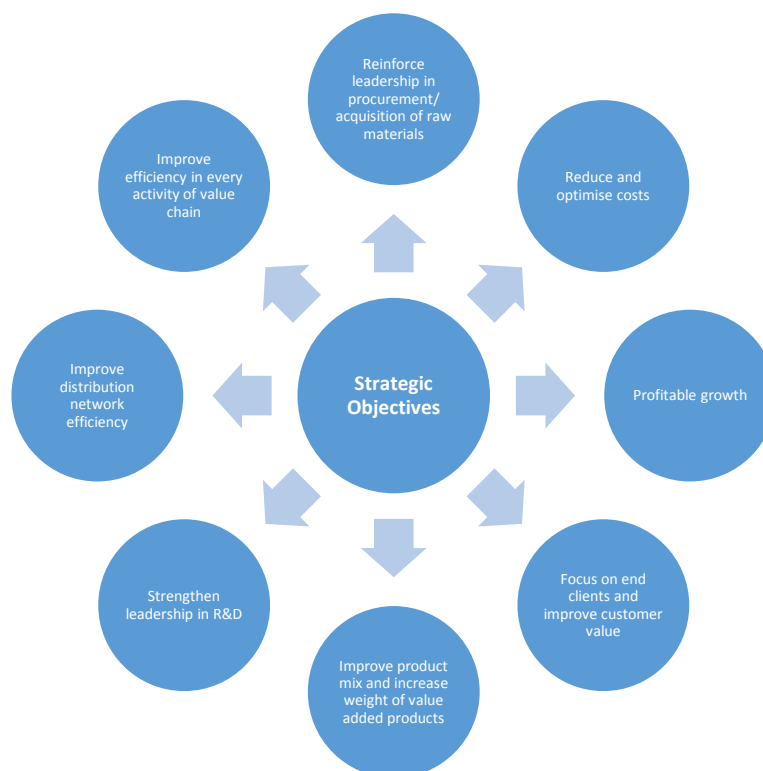


Fig. 4 - Corticeira Amorim's strategy and objectives

Source: Corticeira Amorim

2.2.3. Business Units and Individual Performance

Considering the recent performance (fig.13), Corticeira Amorim managed to have its best year ever in 2015 regarding sales and results. Sales reached the 604,8M€, a 7,9% increase compared to 2014, namely due to the Euro-Dollar exchange effect. All business units registered increasing sales in 2015, except floor & wall coverings. The good operating performance led EBITDA to reach 100,72M€ (16,1% increase compared to 2014), being over 100M€ for the first time.

The company also managed to decrease both its debt level and interest rates due to the recently observed good performance. Earnings were also a record, around 55,012M€ (attributable to shareholders), a 53,9% increase compared to 2014, which is a huge improvement, especially considering that the world crisis still has impact worldwide namely due to financial markets' lack of confidence and political instability. Own shares were sold in September 2015 resulting on a 15% *freefloat* and an incremental liquidity. As outcome of a good year, the dividends paid were high (37,72 cents per share). The performance of each business unit is shown on figures 5, 6, 7, 8 and 9, which will be reflected on the overall performance (fig.10).

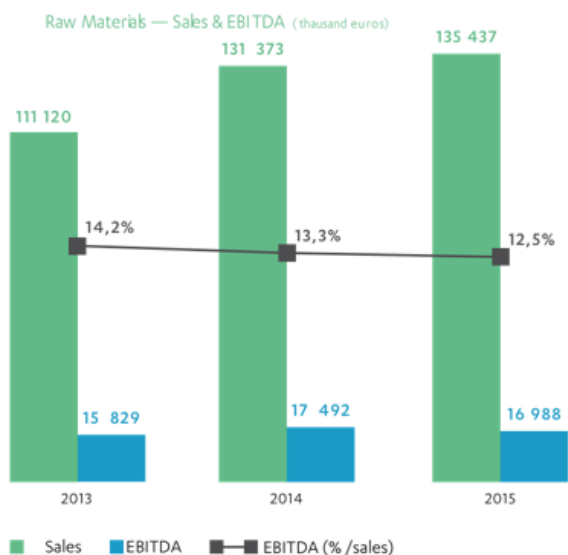


Fig. 5 - Raw Materials business unit performance

Source: Corticeira Amorim, Annual Report 2015

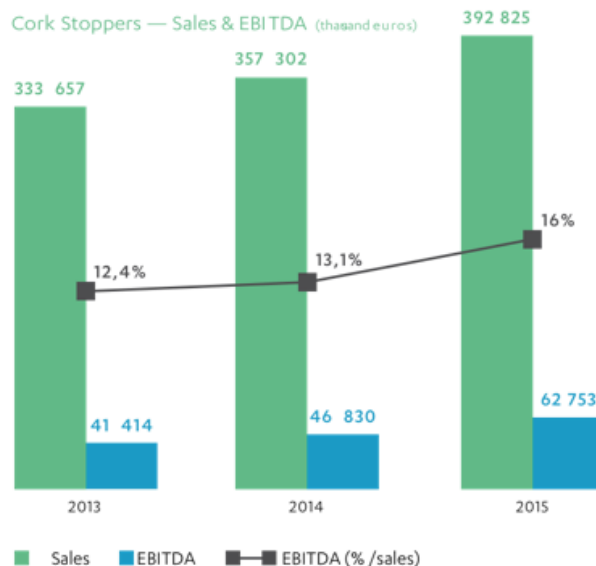


Fig. 6 - Cork Stoppers business unit performance

Source: Corticeira Amorim, Annual Report 2015

Floor & Wall Coverings — Sales & EBITDA (thousand euros)

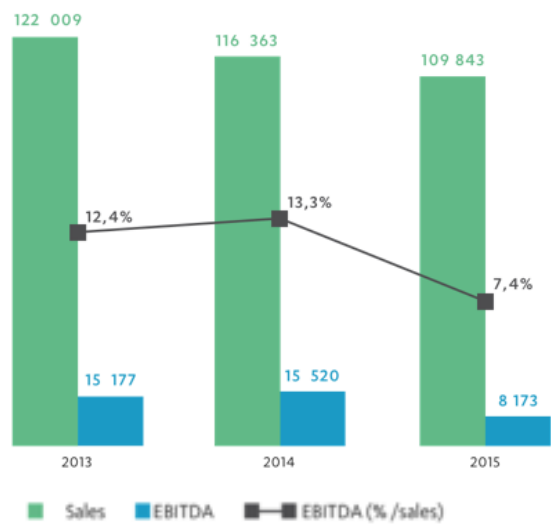


Fig. 7 - Floor & Wall business unit performance

Source: Corticeira Amorim, Annual Report 2015

Composite Cork — Sales & EBITDA (thousand euros)

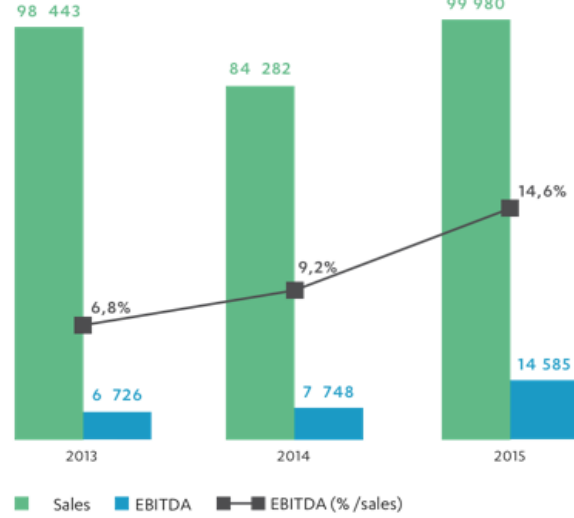


Fig. 8 - Composite Cork business unit performance

Source: Corticeira Amorim, Annual Report 2015

Insulation Cork — Sales & EBITDA (thousand euros)

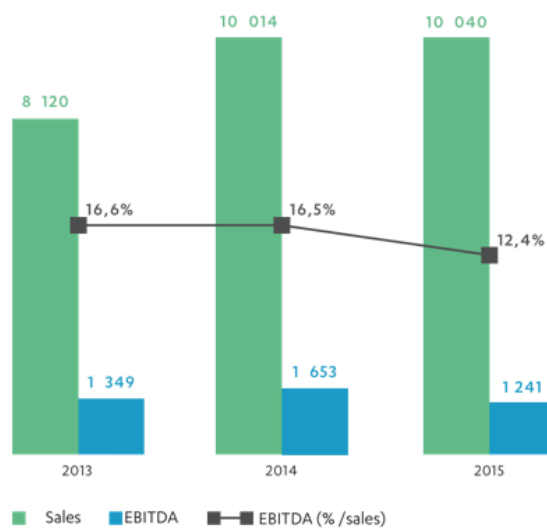


Fig. 9 - Insulation Cork business unit performance

Source: Corticeira Amorim, Annual Report 2015

EBITDA and BU Contribution (thousand €)

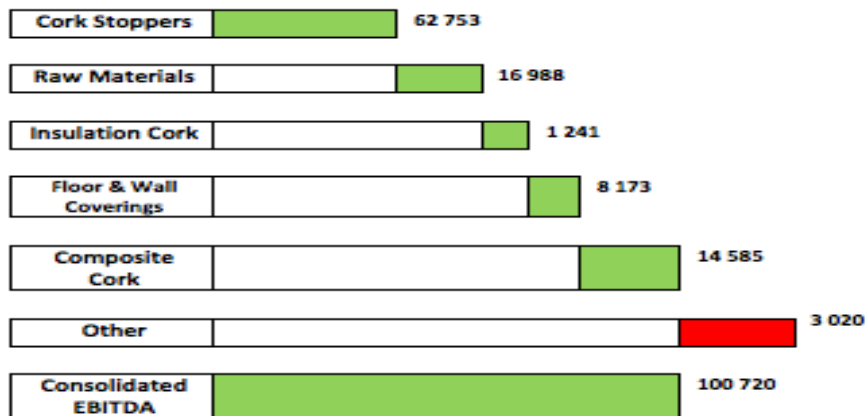


Fig. 10 - Consolidated business unit contribution

Source: Corticeira Amorim, Annual Report 2015

Sales by Business Unit

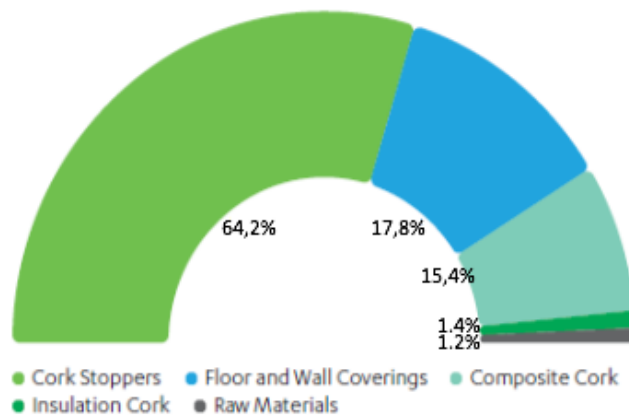


Fig. 11 - Consolidated sales by business unit

Source: Corticeira Amorim, Annual Report 2015

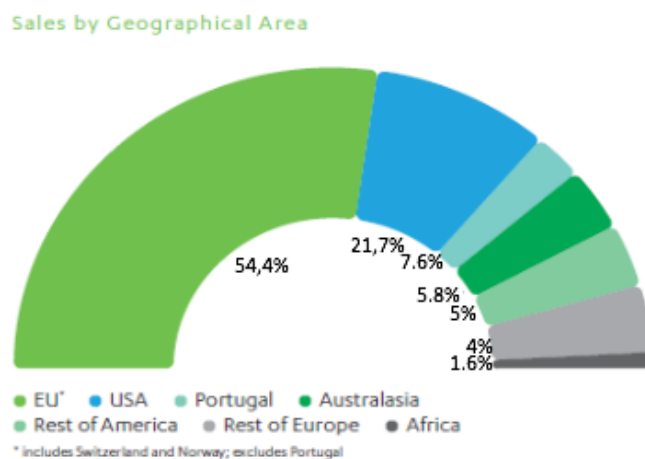


Fig. 12 - Consolidated sales by region

Source: Corticeira Amorim, Annual Report 2015

Analyzing figure 11, it is observable that cork stoppers have a high weight on sales, representing 64,2% of total sales. On the same hand, by analyzing figure 12, it is observable that a higher percentage of sales (54,4%) is related to Europe. These facts are correlated and happen because there are many and excellent wine producers in Europe, namely in Portugal, Spain, France, Germany and Italy.

2.2.4. Global Performance

Corticeira Amorim performance summary 2015			
	2014	2015	Variation
Sales	560340	604800	7,9%
Gross Margin	283583	315613	11,3%
EBITDA	86722	100720	16,1%
EBITDA/sales	15,5%	16,7%	1,2%
Net Income	35756	55012	53,9%
Net Bank Debt	87358	83896	-4,2%

Fig. 13 - Corticeira Amorim performance summary

Source: Corticeira Amorim, Annual Report 2015

Components of Net Profit (thousand €)

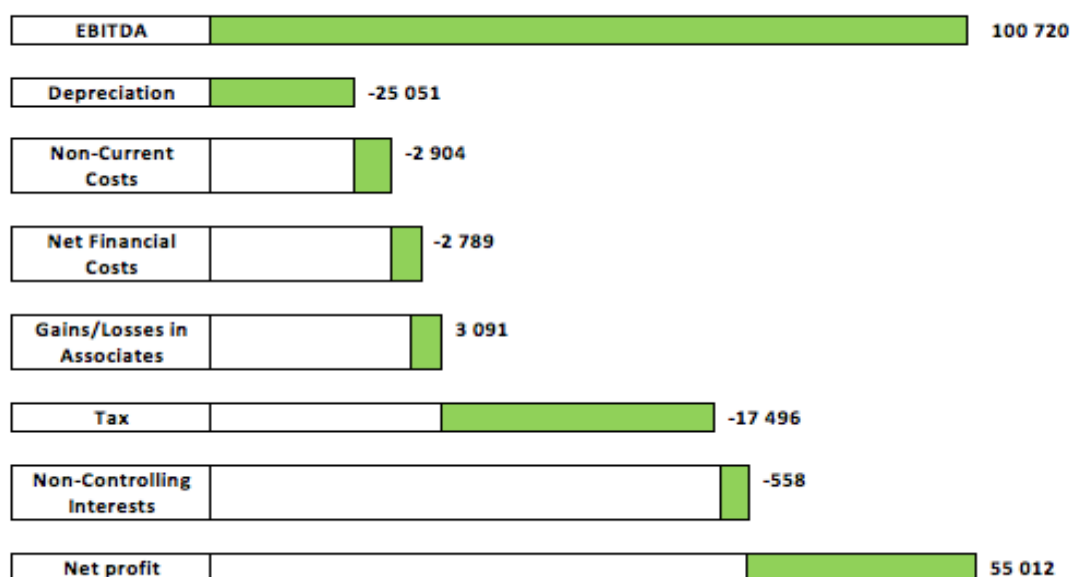


Fig. 14 - Net profit composition of Corticeira Amorim

Source: Corticeira Amorim, Annual Report 2015

The company’s assets, in 2015, increased to values around 667M€ due to operational items, namely euro-dollar exchange gains and increasing sales (items as inventory, customers and both tangible and intangible fixed assets increased). The debt decreased around 4M€ to 83,9M€, which was disappointing as the company was expecting a bigger debt shrinkage. Equity increased around 40M€, namely because of own share selling, which allowed a good income.

The company has also been performing well on the stock market. By analyzing figure 15, it is observable that the share price has been increasing in all presented statistics. At the year-end, a gain of 96,95% is verified compared to 2014. Furthermore, the trading frequency increased over the homologous period. It performed better than the PSI 20 Index during the year of 2015.

Corticeira Amorim's Stock Market Performance in Recent Years			
	2013	2014	2015
Nº of shares traded	27,843,58	32,816,85	12,693,24
Share Prices (€)			
Maximum	2,40	3,65	6,29
Average	2,04	2,85	4,34
Minimum	1,56	2,20	2,99
Year-End	2,21	3,02	5,948
Trading frequency	89,30%	96,10%	98,80%
Stock market capitalization at year-end (€)	293,930,000	401,660,000	791,084,000

Fig. 15 - Corticeira Amorim stock performance

Source: Corticeira Amorim, Annual Report 2015

2.3. Industry Overview

2.3.1. International Market

It is undeniable that Portugal is the leader player in the cork industry, mainly due to Corticeira Amorim's performance in all business units. Regarding the international market for cork, APCOR, the Portuguese National Association of Cork, states that the world cork production is around 201.000 tons and highlights Portugal as production leader with 49,6% or 100.000 tons. The country has natural resources that are favorable, being the cork oak area the largest in the world.

Because Corticeira Amorim SGPS, S.A. operates in five different business units, there are no similar companies competing in all business units simultaneously. Therefore, the main competitors had to be found considering each of the business units, individually. Because the cork stoppers unit represents a high percentage of the company's revenues, the most threatening competitors belong to this area. In Portugal, Cork Link competes in both cork stoppers and floor and wall covering areas, whereas Cork Supply competes on the cork stopper business unit only.

Internationally, the substitute products are the biggest threat. Plastic made stoppers have been successfully developed, with high quality and low production costs. Essentra, Alsad or Sheng Zou are some companies that produce this substitute product.

PRODUÇÃO DE CORTIÇA POR PAÍS CORK PRODUCTION BY COUNTRY

PAÍS COUNTRY	PRODUÇÃO ANUAL (TONELADAS)* ANNUAL PRODUCTION (TONNES)*	PERCENTAGEM PERCENTAGE
PORTUGAL	100.000	49.6%
ESPAÑA SPAIN	61.504	30.5%
MARROCOS MOROCCO	11.686	5.8%
ARGÉLIA ALGERIA	9.915	4.9%
TUNÍSIA TUNISIA	6.962	3.5%
ITÁLIA ITALY	6.161	3.1%
FRANÇA FRANCE	5.200	2.6%
TOTAL	201.428	100%

Fig. 16 - Work annual cork production

Source: APCOR, yearbook 2015

EVOLUÇÃO DO NÚMERO DE EMPRESAS DA INDÚSTRIA DA CORTIÇA
EVOLUTION OF THE NUMBER OF COMPANIES IN THE CORK INDUSTRY

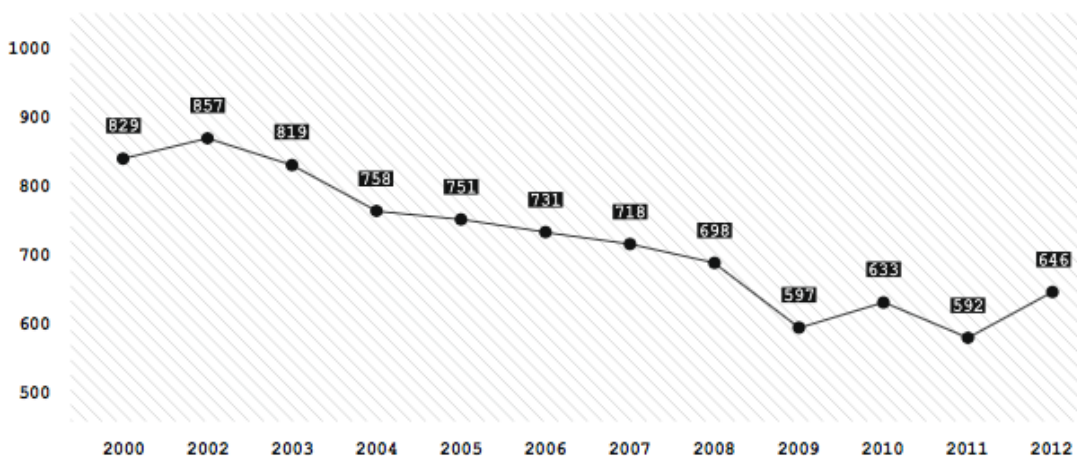


Fig. 17 - Number of companies operating on the cork industry

Source: APCOR, yearbook 2015

EXPORTAÇÕES MUNDIAIS DE CORTIÇA WORLD CORK EXPORTS 2014

PAÍSES EXPORTADORES EXPORTING COUNTRIES	MILHÕES MILLION €	QUOTA DO PAÍS (%) COUNTRY SHARE (%)
PORTUGAL PORTUGAL	845,3	62,8%
ESPAÑA SPAIN	223,6	16,6%
FRANÇA FRANCE	63,6	4,7%
ITÁLIA ITALY	42,6	3,2%
ALEMANHA GERMANY	27,7	2,1%
EUA USA	23,1	1,7%
MARROCOS MOROCCO	16,2	1,2%
CHINA CHINA	14,8	1,1%
BÉLGICA BELGIUM	9,4	0,7%
CHILE CHILE	9,3	0,7%
ÁUSTRIA AUSTRIA	7,3	0,5%
REINO UNIDO UNITED KINGDOM	5,8	0,4%
SUIÇA SWITZERLAND	5,5	0,4%
OUTROS OTHER	52,5	3,9%
TOTAL	1.346.6	100%

Fig. 18 - World cork exports

Source: APCOR, yearbook 2015

IMPORTAÇÕES MUNDIAIS DE CORTIÇA WORLD CORK IMPORTS 2014

PAÍSES IMPORTADORES IMPORTING COUNTRIES	MILHÕES MILLION €	QUOTA DO PAÍS (%) COUNTRY SHARE (%)
FRANÇA FRANCE	221.2	16.2%
EUA USA	211.0	15.4%
ITÁLIA ITALY	137.0	10.0%
PORTUGAL PORTUGAL	127.6	9.3%
ESPAÑA SPAIN	102.0	7.5%
ALEMANHA GERMANY	93.1	6.8%
RÚSSIA RUSSIA	38.8	2.8%
REINO UNIDO UNITED KINGDOM	32.7	2.4%
ARGENTINA ARGENTINA	31.2	2.3%
CHINA CHINA	31.0	2.3%
OUTROS OTHER	340.9	24.9%
TOTAL	1.366.5	100%

Fig. 19 - World cork imports

Source: APCOR, yearbook 2015

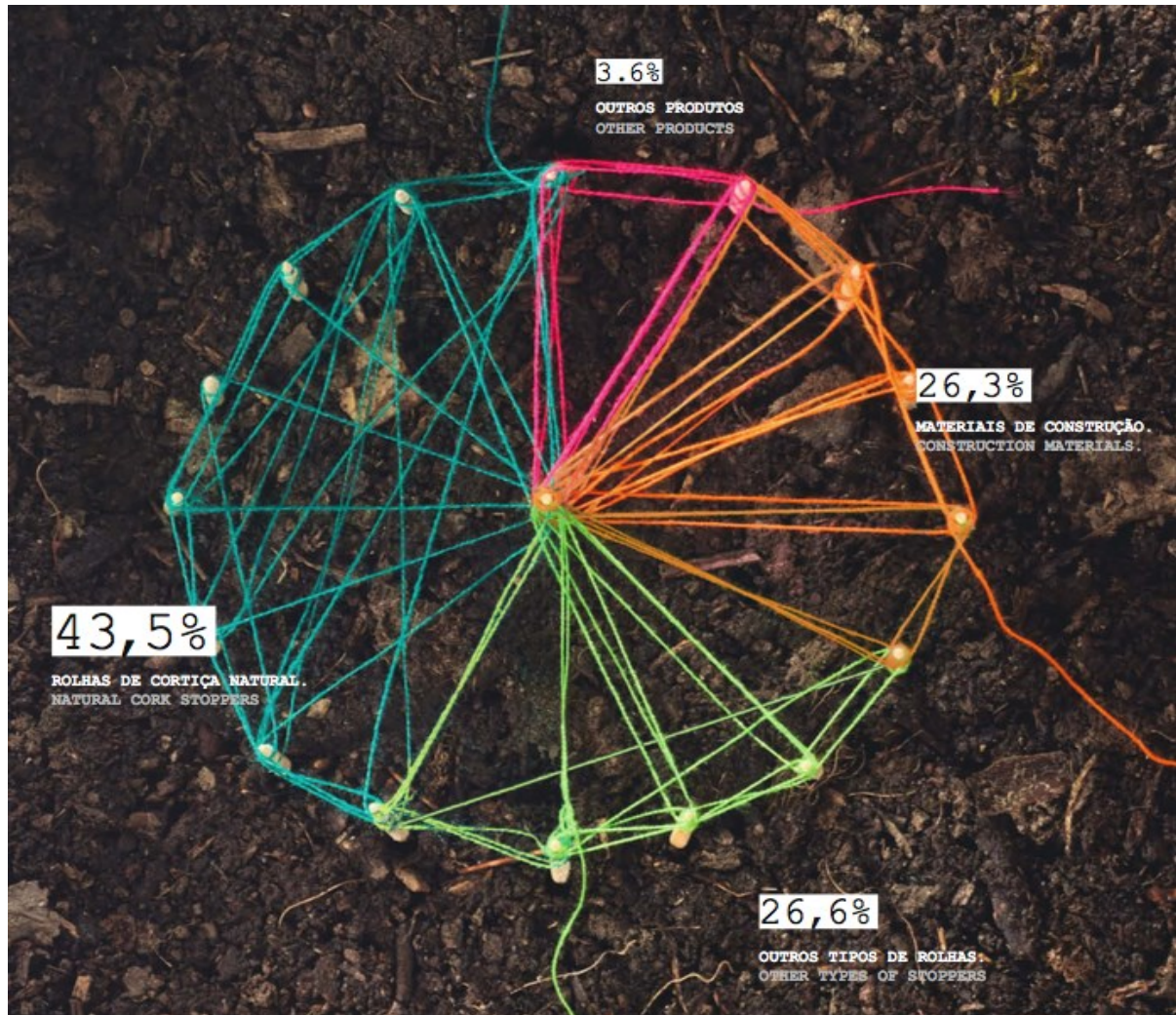


Fig. 20 - Sales structure per product

Source: APCOR, yearbook 2015

Figures 18 and 19 consider the Portuguese international position in the cork industry, being the country with higher exports and the fourth with higher imports. Figure 20 shows that around 43,5% of global cork usage is related to stoppers.

2.3.2. Portuguese Cork Market

Regarding the Portuguese market for cork, figure 21 suggests that Portugal manages to keep high exportation levels, which has been increasing since the 2009 financial crisis, and figure 22 illustrates the international balance in the cork industry.

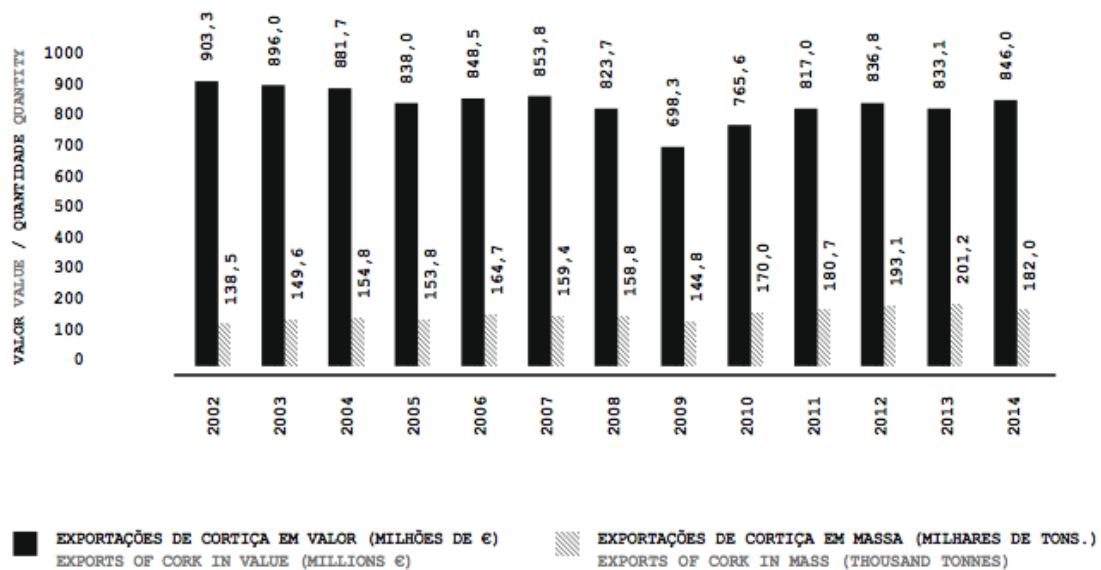


Fig. 21 - Portuguese cork exports

Source: APCOR, yearbook 2015

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
BALANÇA COMERCIAL BALANCE OF TRADE											
EXPORTAÇÕES EXPORTS	881,7	838,0	848,5	853,8	823,7	698,3	754,5	817,0	836,8	833,1	846,0
IMPORTAÇÕES IMPORTS	130,2	146,2	130,4	131,8	129,3	83,0	95,0	136,3	132,2	135,5	127,7
SALDO BALANCE	751,6	691,8	718,1	722,0	694,4	615,4	659,5	680,8	704,5	697,5	718,3

Fig. 22 - Portuguese international balance regarding the cork industry

Source: APCOR, yearbook 2015

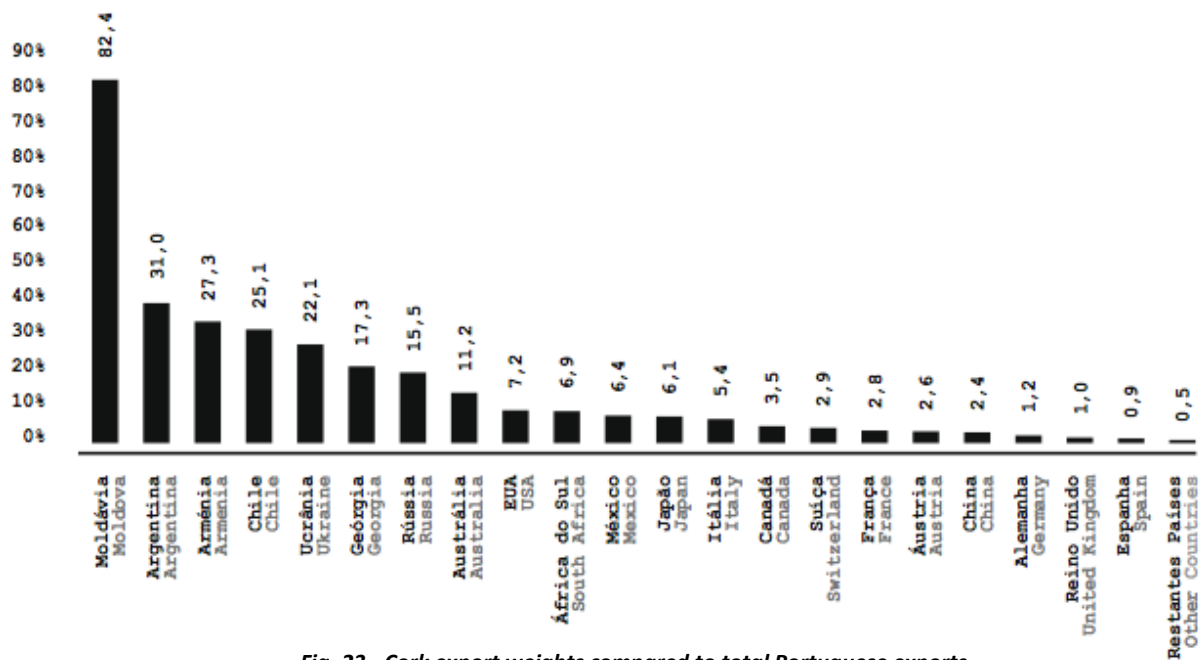


Fig. 23 - Cork export weights compared to total Portuguese exports

APCOR, yearbook 2015

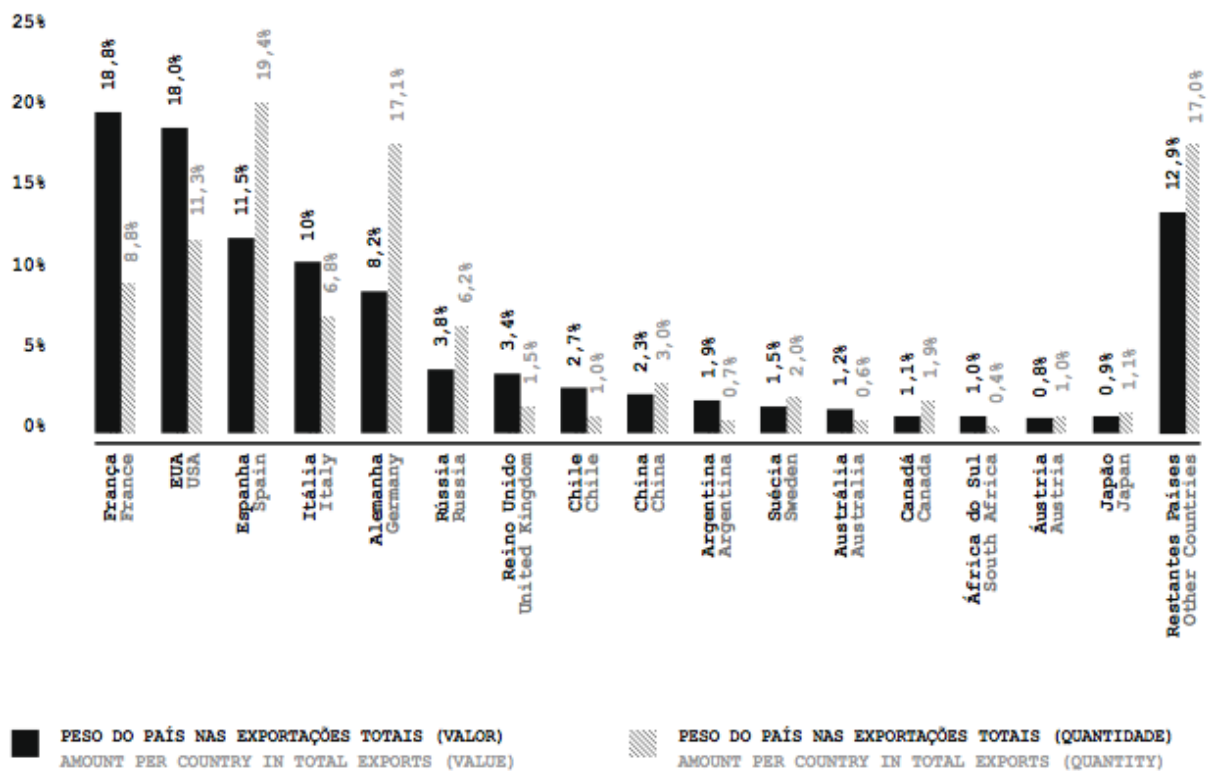


Fig. 24 - Portuguese cork exports per destiny

Source: APCOR, yearbook 2015

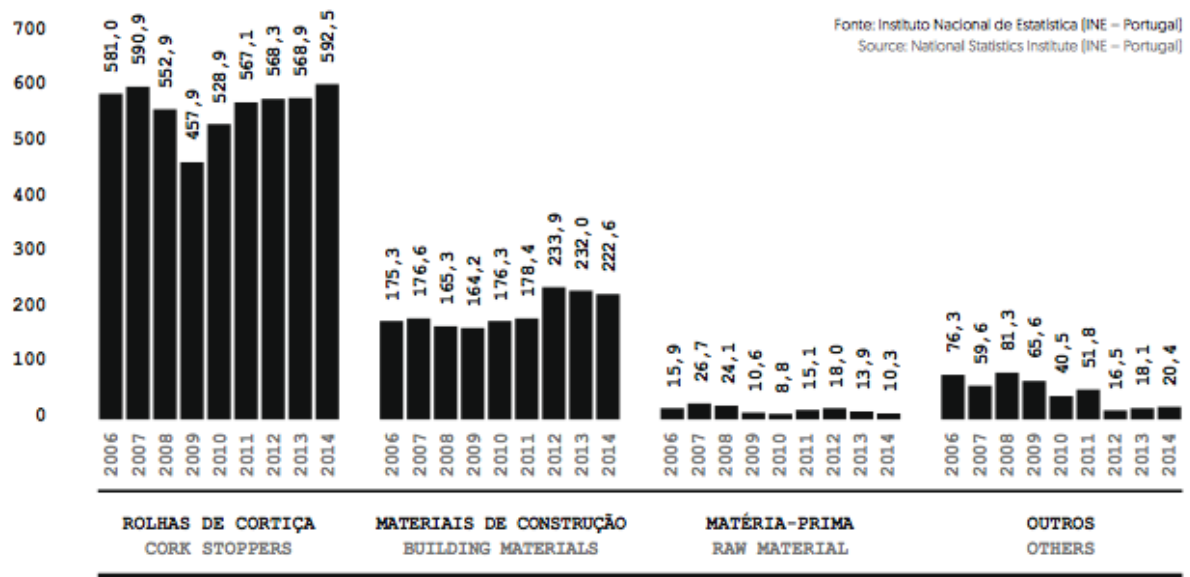


Fig. 25 - Main products exported (million €)

Source: APCOR, yearbook 2015

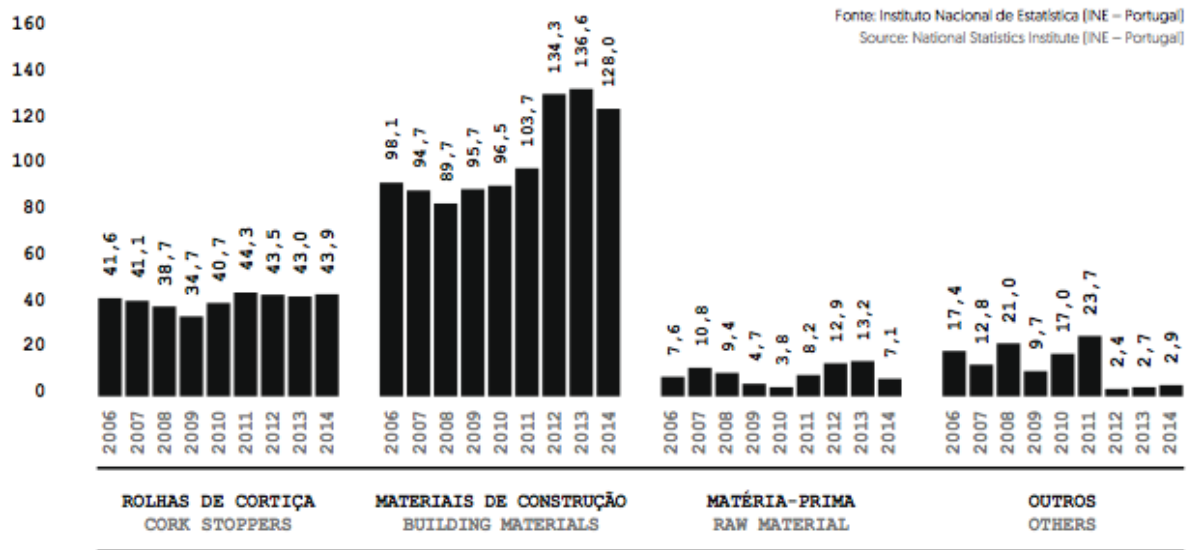


Fig. 26 - Main products exported (thousand tons)

Source: APCOR, yearbook 2015

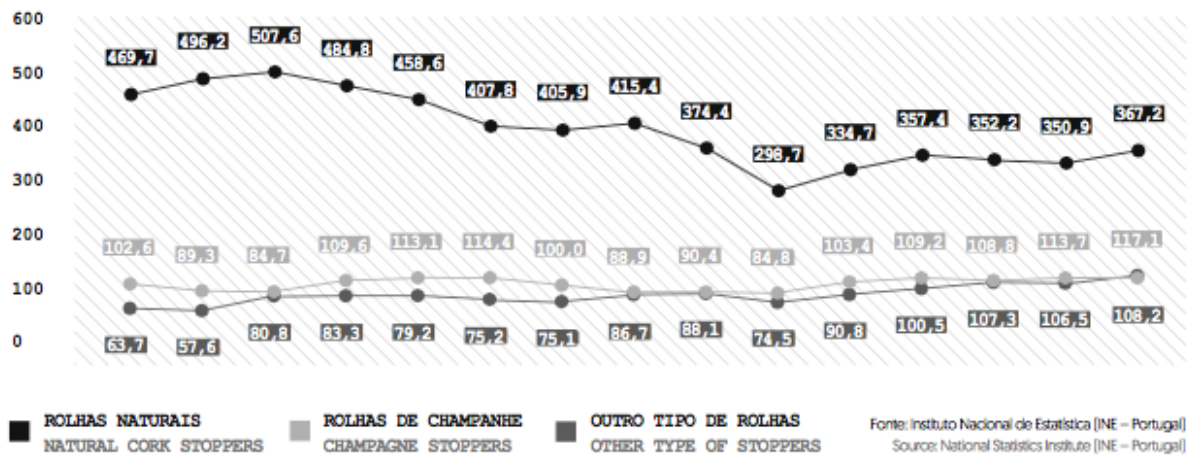


Fig. 27 - Evolution of cork stopper exports

Source: APCOR, yearbook 2015

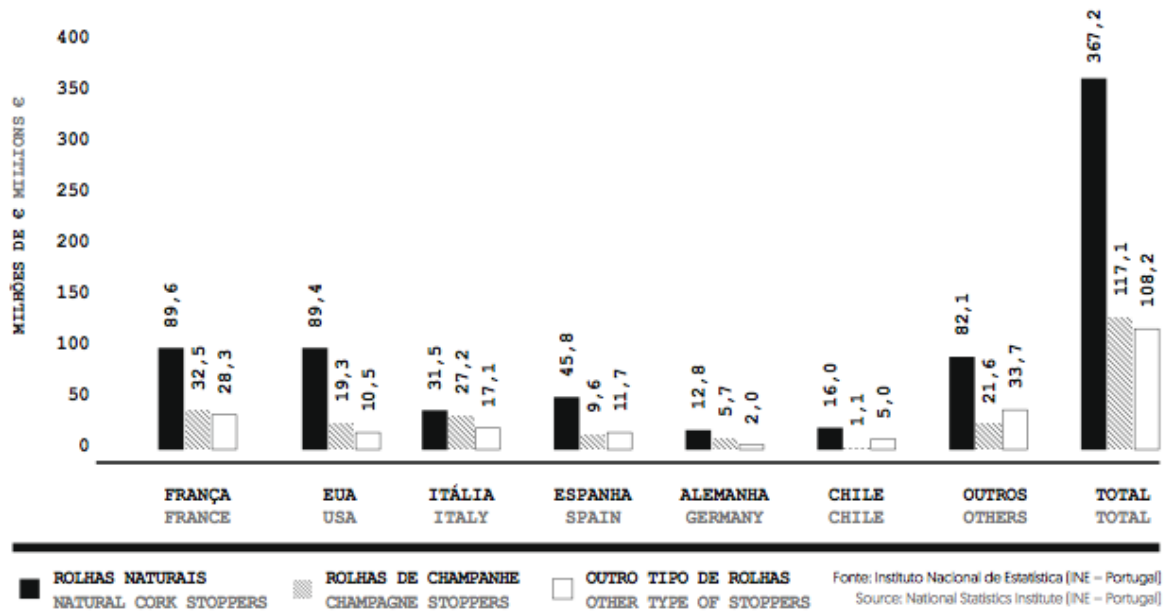


Fig. 28 - Cork stopper exports to the 6 main countries (million €)

Source: APCOR, yearbook 2015

According to INE (Portuguese National Institute of Statistics) the cork-stoppers are the most exported product (in terms of value), with a high percentage of total sales. These exports are mostly related to wine producer countries, namely France, Italy, Germany and Spain, European countries. Regarding construction and decoration materials, they are the second most exported product, namely to Germany, the USA and Spain. France is considered to be the main market for Portuguese cork exports.

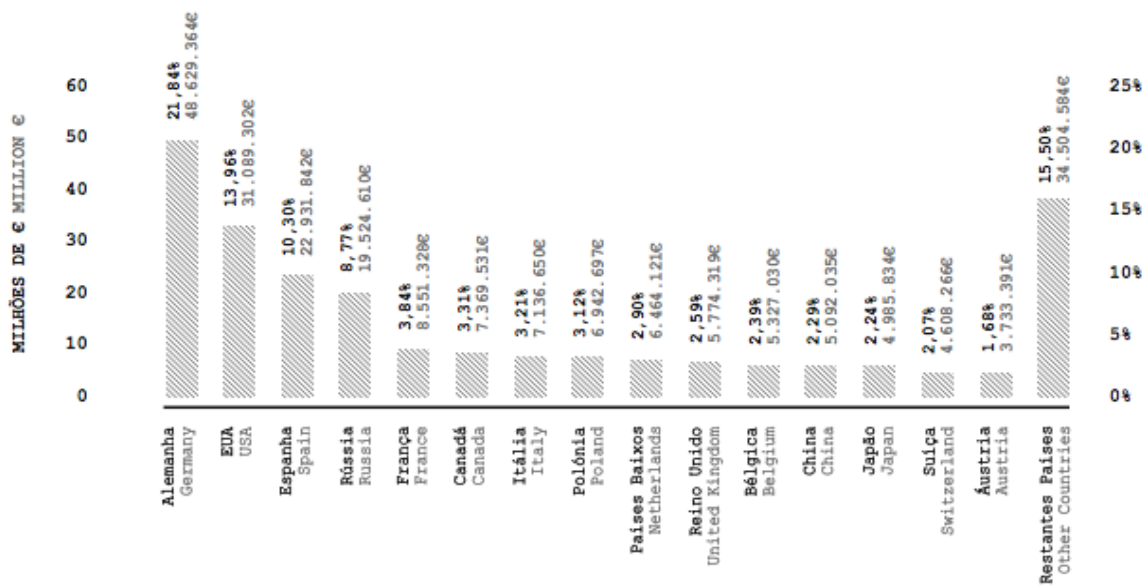


Fig. 29 - Exports of construction/decoration materials by main countries of destination

Source: APCOR, yearbook 2015

Regarding imports, Portugal imported 127,7M€ in 2014, around 71,3 tons, a decrease comparing to 2013.

Spain is the Portuguese main cork supplier. On the same hand as Portugal, Spain also has favorable natural conditions for cork production.

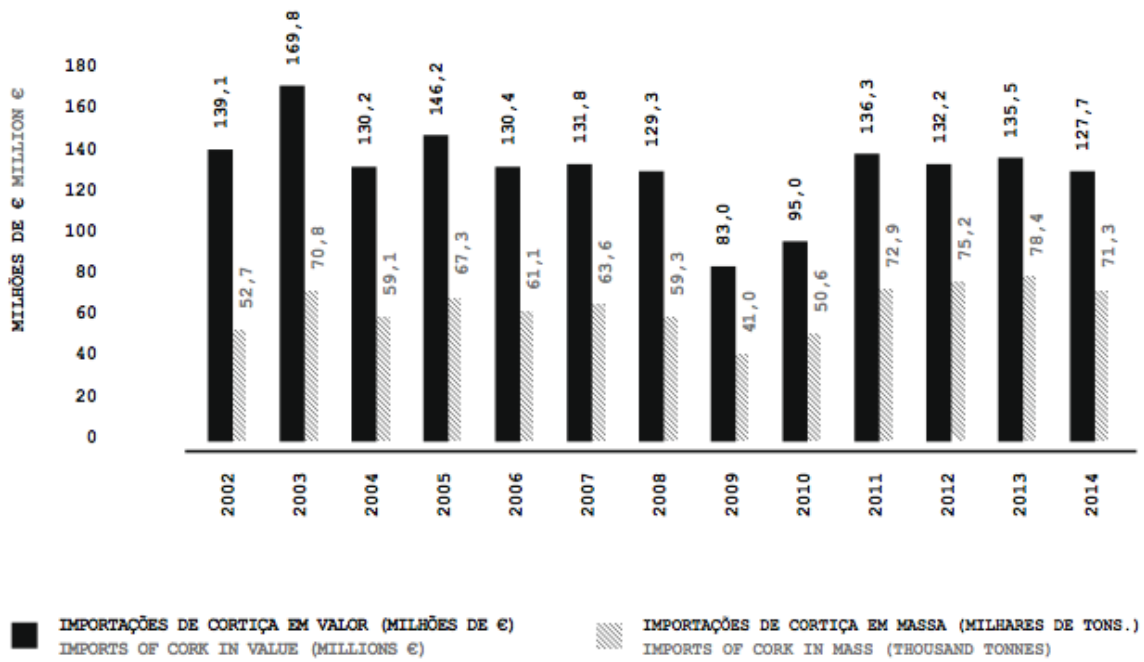


Fig. 30 - Evolution of Portuguese cork imports

Source: APCOR, yearbook 2015

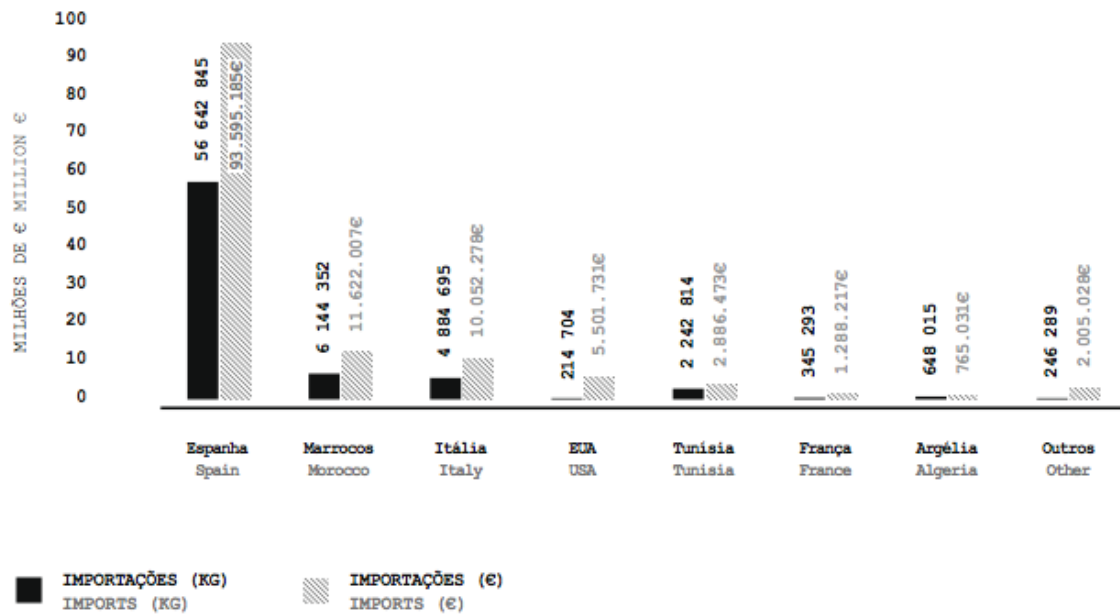


Fig. 31 - Main countries of origin of Portuguese cork imports

Source: APCOR, yearbook 2015

2.3.3. Wine Industry

Both wine and construction industries, between others, are related to cork industry. The wine market has been performing poorly since 2010 in Europe 28, with decreasing production level. According to OIV (International Organization of Vine and Wine), in the EU 28, Spain, France and Italy compete for market leadership. Outside EU 28, production level has increased, showing an opposite scenario, with the USA leading, followed by Argentina.

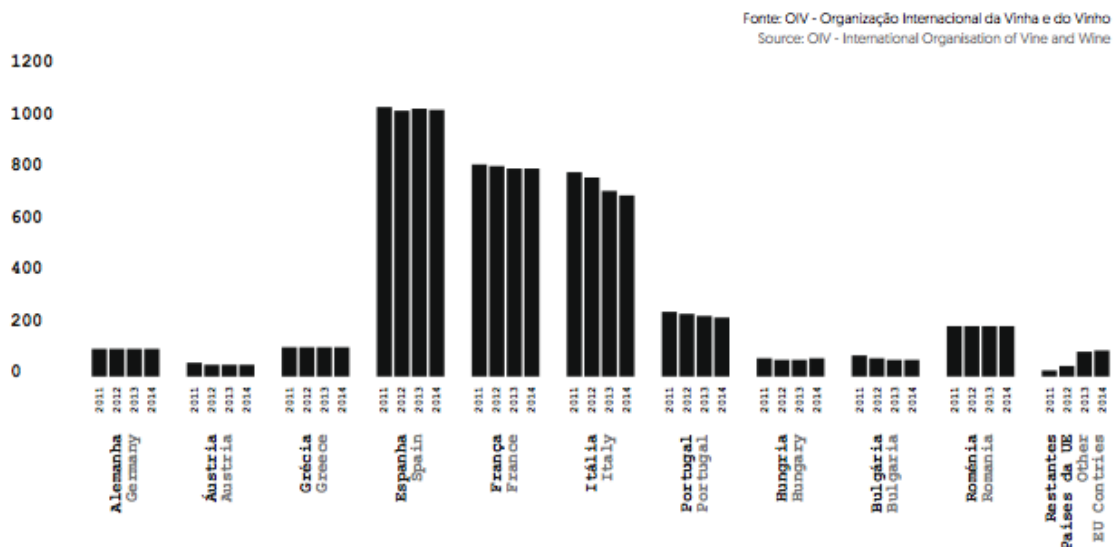


Fig. 32 - Total surfaces area of vineyards in EU 28 (thousand ha)

Source: APCOR, yearbook 2015

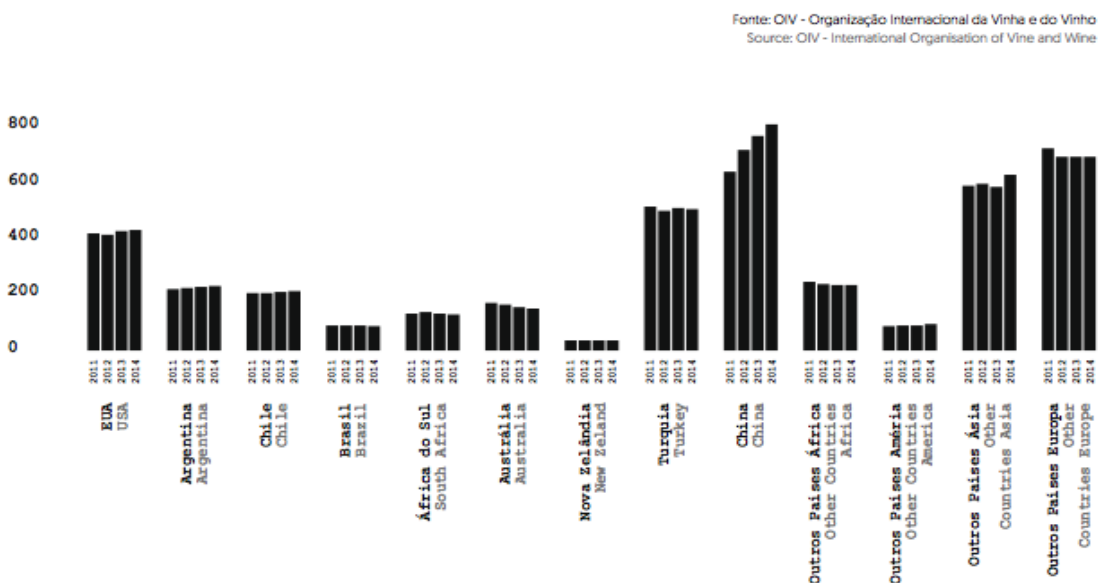


Fig. 33 - Total surfaces area of vineyards outside EU 28 (thousand ha)

Source: APCOR, yearbook 2015

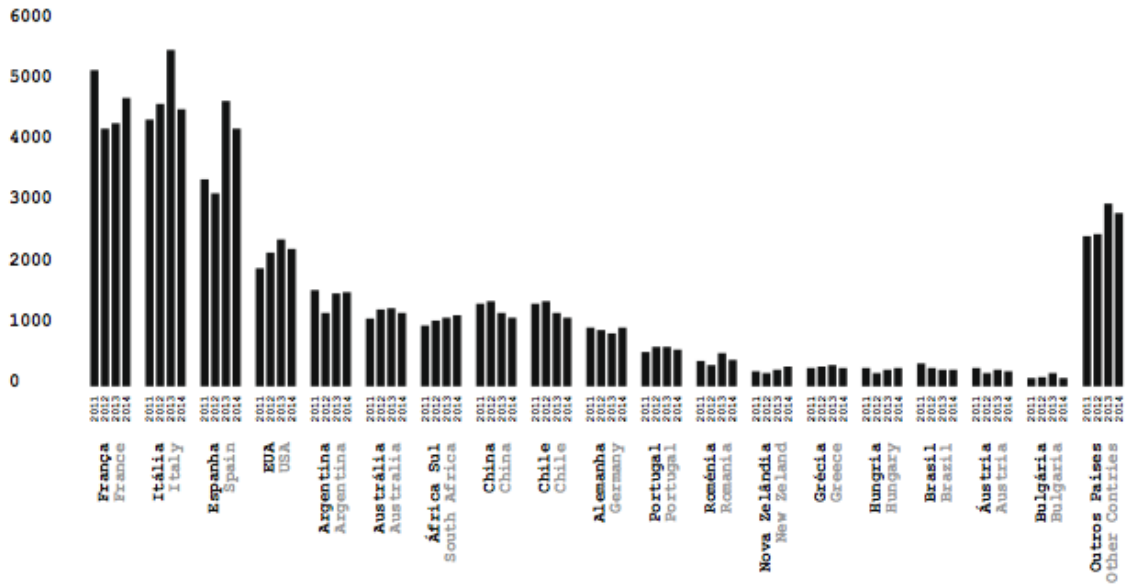


Fig. 34 - World wine production (thousand hl)

Source: APCOR, yearbook 2015

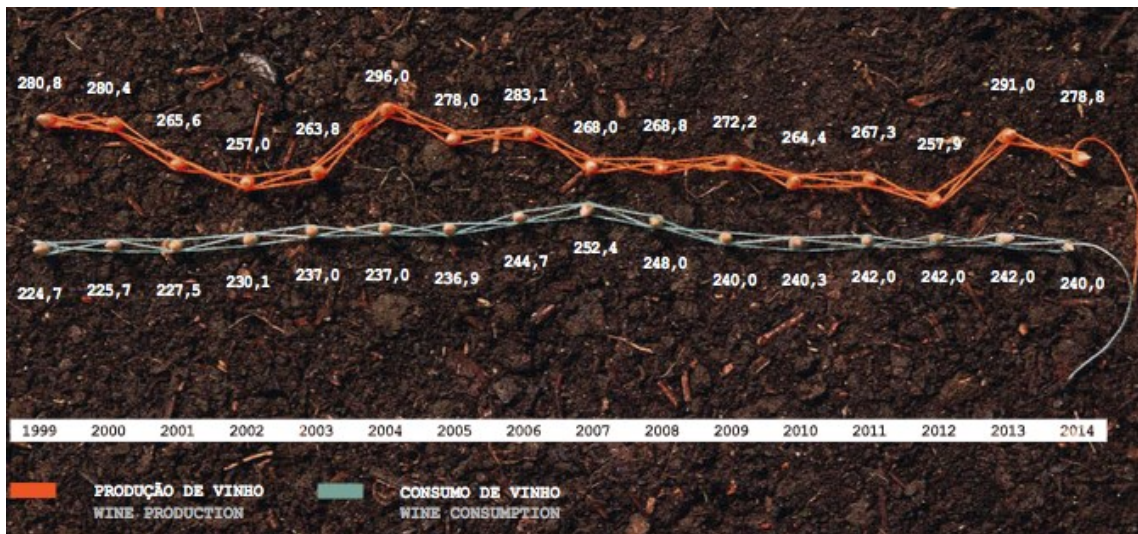


Fig. 35 - Wine production against wine consumption

Source: APCOR, yearbook 2015

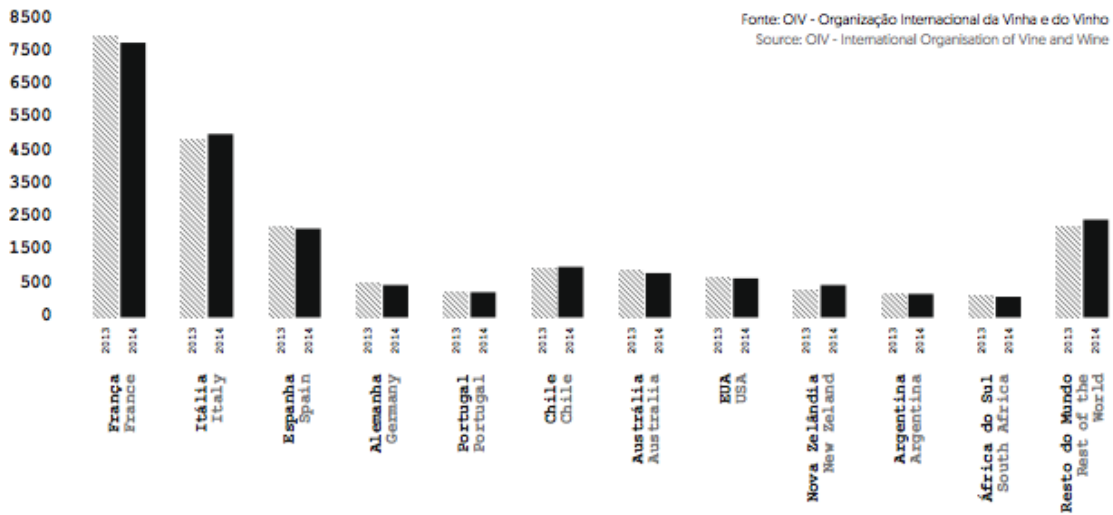


Fig. 36 - Main world wine exporters (million €)

Source: APCOR, yearbook 2015

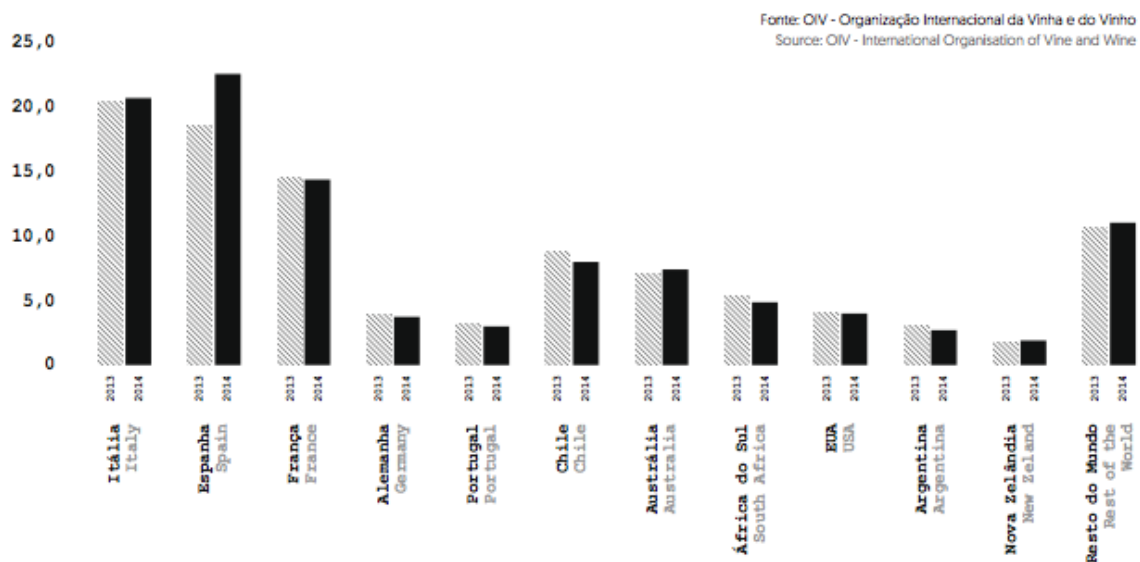


Fig. 37 - Main world wine exporters (million hl)

Source: APCOR, yearbook 2015)

France is the country that most exports in value, but Spain is the one that most exports in quantity.

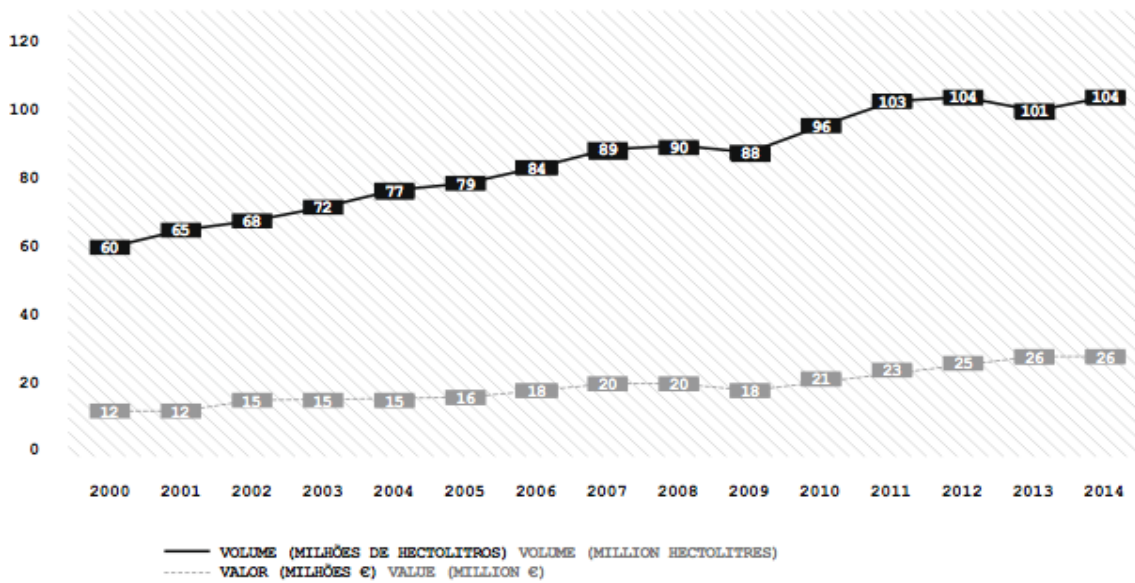
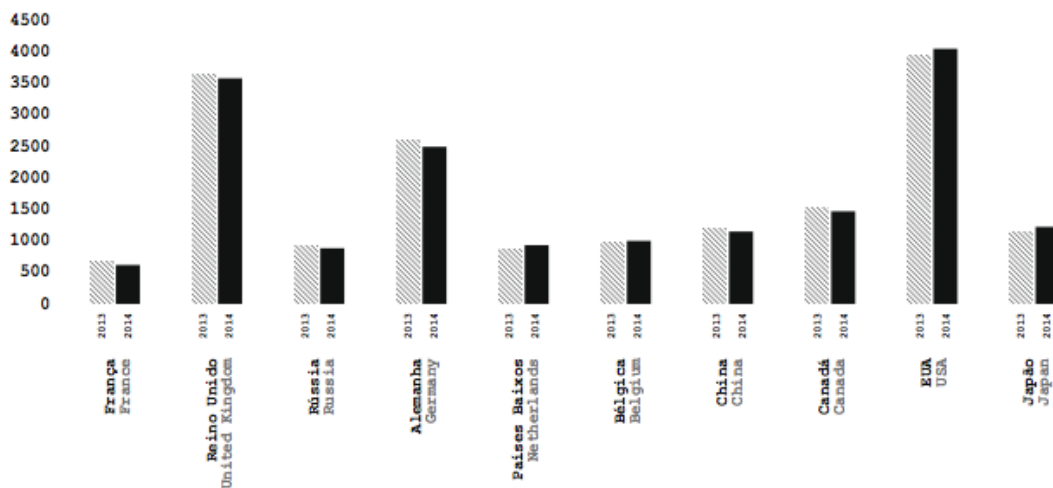


Fig. 38 - Wine consumption evolution

Source: APCOR, yearbook 2015

The wine consumption is expected to slightly increase worldwide over the years, following the recent trend, which is expected to have a positive impact in the cork industry.



Fonte: OIV - Organização Internacional da Vinha e do Vinho
Source: OIV - International Organisation of Vine and Wine

Fig. 39 - Main world wine importers (million €)

Source: APCOR, yearbook 2015

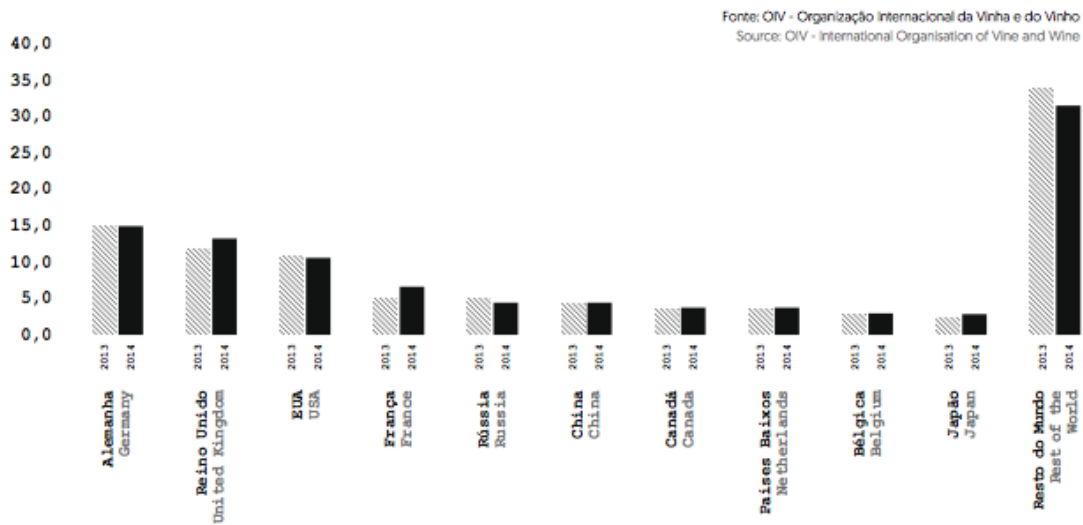
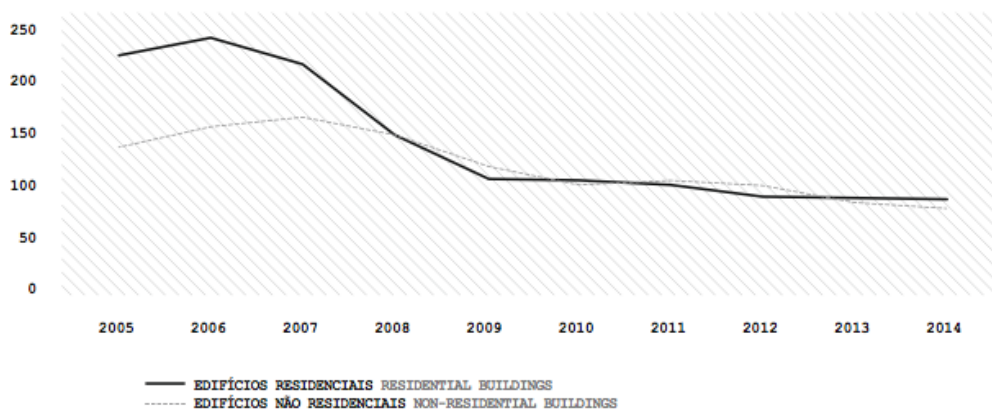


Fig. 40 - Main world wine importers (million hl)

Source: APCOR, yearbook 2015

2.3.4. Construction Industry

The construction industry, both Portuguese and worldwide, has been deeply affected by the 2008-2009 world crisis. Ever since, according to Eurostat, the number of licenses for construction has been decreasing.



Fonte: Eurostat. Nota: Os valores são representados em índice, tomando o ano de 2010 o valor 100.
Source: Eurostat. Note: Values are shown as index values, the year 2010 having the value of 100.

Fig. 41 - Trends in the issuing of building permits in the EU28, in square meters

Source: APCOR, yearbook 2015

If the number of licenses for construction is decreasing, it will have a negative impact in the cork industry, as sales for this industry will shrink.

2.3.5. Legislation

The cork industry does not suffer from heavy legislation in Portugal. The only item important to mention is related to environmental legislation. The Portuguese government only allows to strip the trees once every nine years so that the specie and environment are preserved. Cork oaks cannot be cut, only if dead or sick and, even then, always requires authorities' agreement. Considering the operational processes, residual waters must follow strict conditions.

3. Methodology

By taking a look at the company's balance sheet, it is observable that its capitals structure is slightly constant in time, being the discounted cash-flow method the most suitable to evaluate the company. Furthermore, Corticeira Amorim SGPS, S.A. states that the financing mix is expected to remain stable in the future so that it can keep its operational and professional activity and satisfy both stakeholders and shareholders expectations. The discounted cash-flow results will be compared to two other methods, the dividend discount model and the relative valuation in order to test the trustworthiness of the valuation results.

3.1. Discounted Cash-Flow

3.1.1. Forecast Assumptions

Because the company does not provide the financial reports for each business unit, the valuation had to be done considering the whole company, despite the fact that it should be more accurate to evaluate each business unit separately and compute the company's value as the sum of the parts. To do so, the initial step was to get all the financial data from the annual reports of Corticeira Amorim SGPS, S.A., namely income statement, balance sheet and cash-flow map. The historical data included the period between 2010 and 2015. Data before 2010 was not considered as it is believed to be too old to reflect the actual market and reality, which could

lead to less trustworthy forecasts and, consequently, enterprise value. Having the historical data, forecasts were made following assumptions that will be explained during this chapter.

3.1.1.1. Sales

Starting for the income statement, Corticeira Amorim SGPS, S.A. expects increasing sales in 2016. However, the company does not specify in its annual report which will be the increase in time. Therefore, because there is a recent trend of increasing sales, the forecasts were based on the average of the last 3 years (2013-2015). In 2015, sales raised 7,93%, being half of the increase related to currency exchange gains in Euro-Dollar, as reported by the company on the financial report of 2015. That same half was ignored and was not included on the sales estimations of the subsequent years as these Euro-Dollar ratio gains are considered an isolated event and not expected to happen again in the future. Therefore, for the sales growth average computation purpose, only 3,97% were considered concerning 2015.

	2013	2014	2015	Average
Sales Growth	1,55%	3,29%	3,97%	2,93%

Fig. 42 - Sales historical behavior, ignoring Euro-Dollar ratio gains

The sales growth rate used in the forecasted period was 2,93%, which is an acceptable value taking into account that is substantially smaller than the observed growth in 2015 as it does not include the Euro-Dollar gains, and it is not a big increase considering the company's historical data. Regarding the forecasted period, many authors argue that it should be between 5 and 15 years, as stated previously during this dissertation. The chosen period was 5 years because the company reaches a steady state after this period, with constant growth regarding sales, EBITDA and earnings. The cash-flows and dividends also turned to be slightly constant. Furthermore, 10 or 15 year forecasts are difficult to be made as many variables may change during that large period of time, which would lead to questionable forecasts with impact on the valuation process.

	Historical Data					
	2010	2011	2012	2013	2014	2015
Sales	456790	494842	534240	542500	560340	604800
Growth		8,33%	7,96%	1,55%	3,29%	7,93%

Fig. 43 - Sales historical growth

		Forecast				
		2016	2017	2018	2019	2020
Sales		622,544	640,810	659,511	678,963	698,884
	Growth	2,93%	2,93%	2,93%	2,93%	2,93%

Fig. 44 - Sales behavior in the forecasted period

3.1.1.2. Cost of Sales

The company affirms that previously made investments (mostly machinery) will lead to higher efficiency in 2016 and thereafter, which will be reflected in higher margins. Therefore, a 2,5% margin gain was implemented due to efficiency gains, totaling a 52,5% margin, as the margin in the historical data was around 50%.

		Historical Data					
		2010	2011	2012	2013	2014	2015
Costs of Sales		221,777	243,123	268,035	264,356	286,205	307,875
	Margin	51,45%	50,87%	49,83%	51,27%	48,92%	49,18%

Fig. 45 - Margin historical data

		Forecast				
		2016	2017	2018	2019	2020
Costs of Sales		295,709	304,885	313,315	322,508	331,970
	Margin	52,50%	52,50%	52,50%	52,50%	52,50%

Fig. 46 - Margin increase and cost of sales during the forecasted period

3.1.1.3. Operational items and EBITDA

The operational items were forecasted in relative terms. Because these items are deeply correlated with the volume of sales and are expected to keep the same recent behavior, the recent percentage over sales was considered in the forecasted period. At this stage, EBITDA was determined.

	Historical Data					
	2010	2011	2012	2013	2014	2015
Changes in production	1817	3288	7755	(662)	9448	18188
External Services	7820	8602	93205	97266	96229	100537
Staff expenses	90712	93751	97678	100154	103315	111881
Asset impairment adjustments	2140	1872	1008	1930	149	3291
Other income	6360	7502	6739	7765	9613	8934
Other losses	6512	7846	6343	7770	6581	8117
EBITDA	66006	72438	82465	78127	86722	100721

Fig. 47 - Operational items historical data

	Forecast				
	2016	2017	2018	2019	2020
Changes in production	18722	19271	19836	20418	21017
External Services	103887	106523	109648	112865	116177
Staff expenses	115164	118542	122020	125600	129285
Asset impairment adjustments	3888	387	3589	395	303
Other income	9196	966	9744	10030	10324
Other losses	8355	8600	8353	9112	9380
EBITDA	124361	128009	131765	135631	139610

Fig. 48 - Operational items in the forecasted period

It is observable that there is a bigger increase from 2015 to 2016 in EBITDA not only due to increasing sales but also because of the margin increase. Furthermore, 2016 is expected to be a good year for Corticeira Amorim, SGPS, S.A. as it expects to reinforce its global market share in every single business unit.

3.1.1.4. Depreciation

As it would be expected, increasing depreciations and amortizations follow the increasing value on assets, driven by both operational results and investments on both tangible and intangible assets, as well as pp&e.

	Historical Data					
	2010	2011	2012	2013	2014	2015
D&A	20367	21060	21206	21516	22336	25051
EBIT	45139	51378	61259	56611	64386	75670

Fig. 49 - Historical depreciation and amortization

		Forecast				
		2016	2017	2018	2019	2020
D&A		25786	24391	25076	25084	24350
	EBIT	98575	103618	106689	110547	114760

Fig. 50 - Forecasted depreciations and amortizations

3.1.1.5. Taxes

Regarding taxes, and according to a Deloitte report on taxes, the base tax equals 21% of EBIT. However, there is an incremental factor depending on the profit volume. In the case of Corticeira Amorim SGPS, S.A., because profits are over 35 million euros, this incremental factor equals 7%, totaling 28% of effective tax rate.

		Historical Data					
		2010	2011	2012	2013	2014	2015
Taxes		14261	13747	16203	18551	16776	17496
	Earnings	21754	26215	31733	30959	36680	55572

Fig. 51 - Historical earnings

		Forecast				
		2016	2017	2018	2019	2020
Taxes		25675	27208	28353	29270	30397
	Earnings	66022	69707	72908	75008	78263

Fig. 52 - Forecasted Earnings

It is observable that, in the forecasted period and under this scenario, profits will remain increasing in time, following the recent trend shown by the company. Appendix 2 provides the complete income statement, including historical and forecasted data.

To compute the Free Cash-flow to the Firm, two more items are needed: the capex and the working capital.

3.1.1.6. Capex

Regarding the Capex, the company does not provide much information regarding the investment amount nor the impact (in quantitative terms) of such investments on the operational

and efficiency part of the company. By analyzing older reports, the company keeps the same information limited. Therefore, due to the lack of further information, the company is expected to keep its level of investment indexed to revenues, based on the assumption that with higher revenues, the more the company will invest (as long as there is profit, which is the case of Corticeira Amorim, SGPS, S.A.). Having said so, the spent amount on both tangible fixed assets and intangible assets are relative to revenues, outcoming the capex for the forecasted period. Appendix 4 shows both historical and forecasted cash-flow map, which include the expenditures related to tangible fixed assets and intangible assets, the two main items of capex.

	Historical Data					
Payments Due to:	2010	2011	2012	2013	2014	2015
Tangible Fixed Assets	-16766	-26672	-20329	-25995	-21216	-31189
Intangible Assets	-901	-47	-406	-351	-563	-1617
Capex	-17667	-26719	-20735	-26346	-21779	-32806

Fig. 53 - Historical Capex

	Forecast				
Payments Due to:	2016	2017	2018	2019	2020
Tangible Fixed Assets	-27924	-28421	-30965	-30826	-31857
Intangible Assets	-1665	-1350	-1640	-1645	-1635
Capex	-29589	-29771	-32604	-32471	-33492

Fig. 54 - Forecasted Capex

The reason why the capex is higher than depreciation and amortization is because of the company's willingness to invest in efficiency and innovation, namely investing in machinery and products with new features and characteristics. Two new products that will come up in 2016 are the NDtech and the Hydrocork.

The NDtech is a quality control screening technology that controls the level of TCA (trichloroanisole) in each individualized cork-stopper. TCA is one of the most important risks regarding wine, as it is a chemical that alters both smell and taste of wine. NDtech allows to detect units with exceeding TCA levels so that they can be removed from the supply chain.

The Hydrocork is a low thickness waterproof cork flooring solution.

3.1.1.7. Working Capital

By analyzing the net working capital of Corticeira Amorim, it is observable its short-term financial health, as it manages to satisfy its short-term obligations. This fact is related to a good coordination between short-term cash-in and cash-out. This scenario is also expected in the forecasted period.

	2015	2016	2017	2018	2019	2020
Inventory	271,705	279,677	287,882	296,329	305,023	313,972
Clients	132,545	136,342	140,372	144,572	148,798	153,164
Taxes	3,139	3,392	4,159	4,502	4,752	4,664
Other Assets	28,679	29,108	29,543	29,985	30,342	30,889
Cash and Equivalents	7,665	7,684	7,909	8,422	8,802	8,272
Current Assets	443,533	456,842	469,931	483,622	497,110	511,315
Bearing Debt	41,211	42,362	43,898	44,819	45,630	46,579
Suppliers	10,015	10,342	10,682	10,922	11,089	11,319
Other Debt and Debt Holders	32,227	33,576	34,328	35,049	35,682	36,252
Taxes	6,743	8,622	8,934	9,345	9,514	10,018
Current Debt	90,196	95,009	97,828	100,104	102,015	104,341

Fig. 55 - Forecasted current items

	2015	2016	2017	2018	2019	2020
Current Assets	443,533	456,842	469,931	483,622	497,110	511,315
Current Liabilities	222,890	231,392	237,267	243,872	249,062	255,715
Working Capital	220,643	225,702	232,664	239,767	247,804	255,599
Increase in Working Capital		5,059	6,961	7,122	7,828	7,796

Fig. 56 - Working capital calculation

It is also important to mention that, taking a look at the balance sheet, the historical capital structure remained constant, which is one of the reasons why the DCF is the best approach to evaluate this company. On the same hand, the capital structure will remain stable in the future so that the company manages to deliver value to stakeholders and shareholders while doing its professional activity. Seems that the company believes that this is the financing mix that maximizes the firm's value and, therefore, there is no reason to change it as long as the micro and macroeconomic conditions keep stable. Appendix 3 shows the complete balance sheet with both historical and forecasted data. As stated in the Literature Review chapter, the working capital was computed through the difference between current assets and liabilities, including all respective and inherent items presented on the balance sheet.

	Historical Data					
	2010	2011	2012	2013	2014	2015
Debt/Assets Ratio	52,20%	53,34%	54,14%	51,90%	48,89%	46,92%
Equity/Assets Ratio	47,80%	46,66%	45,86%	48,10%	51,11%	53,08%

Fig. 57 - Company's historical financing mix

3.1.2. WACC

In order to perform a DCF valuation, the wacc is a fundamental variable to be determined. The obtained discount rate equals 3,16%, which is a relative low cost of capital, explained by the healthy financial situation of Corticeira Amorim.

D/V ratio	46,92%
After-tax Kd	0,92%
E/V ratio	53,08%
Ke	5,13%
<hr/>	
WACC	3,16%

Fig. 58 - Wacc calculation

3.1.2.1. Cost of Equity

Risk-Free Rate	0,3%
Market Risk Premium	3,99%
Beta	0,72
D/E ratio	97,32%
tax rate	28%
Equity Beta	1,22
<hr/>	
Equity Cost of Capital	5,13%

Fig. 59 - Cost of equity calculation

3.1.2.1.1. Risk-Free Rate

The proxy used for the risk-free asset was the 10-year German Bond. Because the company is Portuguese and very international, it seems suitable for the case of Corticeira Amorim. The risk-free rate is 0,3%, according to the market information (data from mid-November, 2016).

3.1.2.1.2. Market Risk Premium

To compute the market risk premium, data was obtained regarding the PSI 20 Index and the German 10 Year bonds, from 1992 to 2016, yearly data. This data is useful to know in what measure the average returns of the PSI 20 Index are higher than the risk-free asset yield, which is the market risk premium.

PSI 20 Average Return	6,18%
10 Year German Bond Average Yield	2,19%
Market Risk Premium	3,99%

Fig. 60 - Market risk premium calculation

3.1.2.1.3. Beta

To measure the degree of correlation of the company's stock with the market, information regarding Corticeira Amorim's stock price, the PSI 20 Index price and the German 10 year bonds were collected, monthly data as stated by Damodaran, from 2006 to 2016. The first step was to compute the excess return (in excess to the risk-free rate) for both Corticeira Amorim and PSI 20 Index, in each period. The second step was, using the Excel function "linest", find the correlation between the excess returns. To get the final beta, the leverage factor was applied. The D/E ratio reflects the average of the last 3 years.

Beta	0,72
D/E ratio	97,32%
tax rate	28%
Equity Beta	1,22

Fig. 61 - Beta

3.1.2.2. Cost of Debt

To compute the cost of debt, the spread must be added to the risk-free rate. To know the spread, the *rating* must be known, according to the interest coverage ratio.

EBIT	75670
Interests paid	7212
Interest Coverage Ratio	10,49

Fig. 62 - Interest coverage ratio

For companies with market cap < \$ 5 billion

If interest coverage ratio is

greater than	≤ to	Rating is	Spread is
12.5	100000	Aaa/AAA	0,75%
9.5	12.499999	Aa2/AA	1,00%
7.5	9.499999	A1/A+	1,10%
6	7.499999	A2/A	1,25%
4.5	5.999999	A3/A-	1,75%
4	4.499999	Baa2/BBB	2,25%
3.5	3.999999	Ba1/BB+	3,25%
3	3.499999	Ba2/BB	4,25%
2.5	2.999999	B1/B+	5,50%
2	2.499999	B2/B	6,50%
1.5	1.999999	B3/B-	7,50%
1.25	1.499999	Caa/CCC	9,00%
0.8	1.249999	Ca2/CC	12,00%
0.5	0.799999	C2/C	16,00%
-100000	0.499999	D2/D	20,00%

Fig. 63 - Rating and spread according to the interest coverage ratio

Source: Damodaran Website

As Corticeira Amorim has a market cap lower than 5 billion, according to Damodaran, its associated *rating* is Aa2/AA, which corresponds to a spread equal to 1,00%. Important to mention that in 2015 the rating increased as Corticeira Amorim managed to decrease its debt level, as well as lower interest rates and better operational performance.

Risk-Free Rate	0,3%
Spread	1,00%
Pre-tax Cost of Debt	1,28%
Tax Rate	28%
After tax cost of Debt	0,92%

Fig. 64 - Cost of debt calculation

3.1.2.3. Weights of both Debt and Equity

Because the capital structure has been constant in time, with small debt decreases, it is not expected to change as the company finds it to be the most suitable considering its operational activity. Therefore, the current capital structure was used, as it reflects the recent behavior and pattern.

	Historical Data					
	2010	2011	2012	2013	2014	2015
D/V Ratio	52,20%	53,34%	54,14%	51,90%	48,89%	46,92%
E/V Ratio	47,80%	46,66%	45,86%	48,10%	51,11%	53,08%

Fig. 65 - Historical capital structure

	Forecast				
	2016	2017	2018	2019	2020
D/V Ratio	46,95%	47,04%	47,14%	47,26%	47,36%
E/V Ratio	53,05%	52,96%	52,86%	52,74%	52,64%

Fig. 66 - Forecasted capital structure

3.1.3. Free Cash-Flows to the Firm

At this stage, the needed items were estimated to perform the DCF valuation. The first part consists on determining the free cash-flow to the firm for each forecasted period. The second part consists on, using wacc, discounting that same FCFF to the present. The third part consists on summing up all the present values of the FCFF.

It is important to reinforce that the value of the capex is higher than the value of depreciations due to the company's willingness to invest in efficiency and innovation.

	Forecast				
	2016	2017	2018	2019	2020
EBIT	98.575	103.618	106.689	110.547	114.760
Taxes	28,00%	28,00%	28,00%	28,00%	28,00%
	70.974	74.605	76.816	79.594	82.627
D&A	25.786	24.391	25.076	25.084	24.850
Capex	(29.589)	(29.771)	(32.604)	(32.471)	(33.492)
Increase in NWC	5.059	6.961	7.312	7.828	7.796
Free Cash-Flow to the Firm	10.540	13.482	11.824	14.210	16.489
WACC	3,16%				
PV of the Cash Flows	10.217	12.669	10.771	12.548	14.115
Sum of the PVs of the Cash Flows	60.320				

Fig. 67 - Present value of the cash flows

To get the final value of the firm's operating assets, the terminal value is missing.

3.1.4. Terminal Value

FCFF	16.489
WACC	3,16%
g	1,87%
Terminal Value	1.276.315

Fig. 68 - Terminal Value calculation

For the terminal value calculations, a 1,87% growth was considered, which is very similar to the 1,8% inflation expected in 2020, in Portugal.

The growth was computed according to the volume of sales for each country, using a weighted average growth. The percentage of sales for each country and the growth for each country was given by the company's financial report.

	% of sales in 2015	g
European Union	54,40%	1,50%
USA	21,70%	2,50%
Rest of America	7,60%	2,30%
Australasia	5,80%	2,40%
Portugal	5,00%	1,70%
Rest of Europe	4,00%	2,20%
Africa	1,60%	1,30%
Pondered Grow		1,87%

Fig. 69 - Pondered growth

The obtained value is plausible as it stays between the expected Portuguese economy growth (1,7%) and the expected global economy's growth (3,4%) in 2016.

3.1.5. Enterprise Value and Equity Valuation

Summing up the Terminal Value and the sum of the present values of the cash-flows, the value of operating assets of the firm was reached.

Terminal Value	1.276.315
Sum of the PVs of the Cash-Flows	60.320
Value of Operating Assets of the Firm	1.336.635

Fig. 70 - Value of the operating assets of the firm

The company’s equity is calculated by subtracting the non-equity claims. Dividing the company’s equity by the total number of shares, the outcome is the price per share.

Value of Operating Assets of the Firm	1.336.635	Fig. 71 - Price per share calculation
Net Debt	83.892	
Company's Equity	1.252.743	
#shares outstanding	133.000	
Price per share	9,419	

3.1.6. Suggestion

According to this dissertation and following the implied assumptions, Corticeira Amorim’s stock price has potential to increase in time, being presently undervalued. Therefore, the suggestion for investors is to buy.

Current Price	Fair Value	Decision	Fig. 72 - Current vs fair price and suggestion
8,191	9,419	Buy	

3.1.7. Sensitivity Analysis

To perform an equity valuation, many assumptions have to be made trying to replicate the reality of the company, concerning both internal and external factors and variables. However, those assumptions may not be a good proxy to reality. Therefore, a sensitivity analysis turns to be useful so that investors can understand the impact of changes in different variables on the stock price of the company.

Bull Case	Price per Share (€)	Dissertation	Bear Case	Price per Share (€)
5% Sales increase	11,652	9,419	2% Sales decrease	3,952
5% Margin Increase	10,980		2% Margin Decrease	3,175
5% Capex Decrease	10,448		5% Capex Increase	8,39

Fig. 73 - Sensitivity Analysis regarding sales, margin and capex

Two extreme scenarios were considered: a bull scenario (optimistic) and bear scenario (pessimist). Both allow to have a clearer idea of the impact in each variable on the stock price.

		Growth						
		%	0,37%	0,87%	1,37%	1,87%	2,37%	2,87%
Wacc	2,16%	6,763	9,447	15,530	42,048			
	2,66%	5,243	6,756	9,440	15,450	42,580		
	3,16%	4,269	5,241	6,756	9,419	15,552	42,840	
	3,66%	3,584	4,259	5,230	6,728	9,426	15,854	
	4,16%	3,080	3,578	4,253	5,214	6,735	9,584	
	4,66%	2,693	3,074	3,571	4,240	5,217	6,795	

Fig. 74 - Sensitivity analysis regarding wacc and growth

The values in light blue are values used under the dissertation scenario and assumptions. The light grey values are considered the outliers. All the other numbers are possible scenarios for the stock price taking into account the changes in variables.

3.2. Dividend Discount Model

Regarding the dividend payment to shareholders, those are expected to keep growing in the forecasted period, following the observed trend of increasing earnings. Both payback and plowback ratios were assumed to remain unchanged until 2020.

	2015	2016	2017	2018	2019	2020
Dividends	0,431	0,491	0,519	0,543	0,558	0,582
Ke	5,13%					
PV of Dividends		0,467	0,469	0,467	0,457	0,453
Sum of PVs of Dividends	2,314					

Fig. 75 - Present value of future dividends

Dividend	0,582
Ke	5,13%
g	2,00%
Perpetuity	18,562
PV of Perpetuity	14,451
Share Price	16,765

Fig. 76 - Dividend perpetuity and share price

The dividend growth assumed in these calculations was equal to 2%, which is the expected behavior of the paid dividends.

The share price obtained for Corticeira Amorim using the DDM (16,765€) is substantially higher than the outcome of the DCF valuation (9,419€). These two approaches follow different methodology and different assumptions. However, the given value from the DDM reinforces the statement that Corticeira Amorim's stock price is undervalued and has potential to increase its price in the future. Therefore, it goes straight to the given buying suggestion.

3.3. Relative Valuation

Many authors argue that DCF is the best valuation method. However, the result should be checked with other valuation approaches because it may include miscalculated reinvestments needs, cost of capital, growth rates or other assumptions. Therefore, the relative valuation chapter is entirely dedicated to test the consistency of the DCF estimations. The main goal is to, by using two different multiples, reach a price range and verify if the DCF valuation result is between those limits.

Taking into consideration that Corticeira Amorim is the absolute leader in the cork-industry, there are not comparable companies operating in the same industry. Therefore, the peer group had to be found taking into consideration different industries and variables as sales, profit, growth and capital structure. For a proper peer group, the comparables used to perform the relative valuation were given by *Reuters*.

Peer Group
Corticeira Amorim SGPS SA
ENCE Energia y Celulosa SA
Altri SGPS SA
Vidrala SA
Ibersol SGPS SA
Sonae Capital SGPS SA
Navigator Company SA
Semapa Sociedade de Investimento e Gestao SGPS SA

Fig. 77 - Peer group used in the relative valuation

The outcome of the multiples was a price range between 7,091 and 9,470. The share price given by the DCF valuation is 9,419, which belongs to the given range. Having said so, the relative valuation successfully checked the DCF approach results.

	Price / Earnings		EV / EBITDA
Price per share (€)	7,091	9,419	9,470
	Lower Bound	Dissertation	Upper Bound

Fig. 78 - Relative valuation vs DCF results

3.3.1. EV/EBITDA

Peer Group	EV / EBITDA
Corticeira Amorim SGPS SA	8,53
ENCE Energia y Celulosa SA	5,49
Altri SGPS SA	6,99
Vidrala SA	9,19
Ibersol SGPS SA	N/A
Sonae Capital SGPS SA	18,53
Navigator Company SA	7,10
Semapa Sociedade de Investimento e Gestao SGPS SA	6,82
Average	9,02
EV	1.259.468
Price €	9,470

Fig. 79 - EV/EBITDA results

3.3.2. Price/Earnings Ratio

Peer Group	Price / Earnings
Corticeira Amorim SGPS SA	13,35
ENCE Energia y Celulosa SA	14,74
Altri SGPS SA	10,07
Vidrala SA	16,88
Ibersol SGPS SA	N/A
Sonae Capital SGPS SA	N/A
Navigator Company SA	10,55
Semapa Sociedade de Investimento e Gestao SGPS SA	8,70
Average	12,19
Price €	7,091

Fig. 80 - Price/Earnings Ratio results

4. Dissertation vs BPI Equity Research

The main purpose of this chapter of the dissertation is the comparison of the results of the dissertation and the results of an investment bank. BPI, a Portuguese bank, provides information regarding Corticeira Amorim through its “*Equity Research*”. It is of extreme importance to compare the final results and the inherent assumptions attached to each investment recommendation.

4.1. Operational Components

Starting for the operational components, BPI states that the new products (NDtech and Hydrocork) will have positive impact on the sales volume. Furthermore, the US wine market is increasing year after year. Because Corticeira Amorim exports a substantial percentage of sales of the cork stoppers business unit to the US, this will also have a significant impact. On the same hand, NDtech is believed to allow charging higher prices as it is the only company to produce such innovation so far. However, other companies may start producing equivalent or even better alternatives in the short-run, which would make this advantage short in time. All these items together result on a 7% average annual growth on sales on the forecasted period, which is significantly higher than the sales growth used in the dissertation (2,93%). Regarding sales, BPI was way more optimistic.

Regarding the cost of goods sold, BPI states that there will be fixed costs savings due to efficiency gains, as well as higher margins. BPI considers a 4,3% margin increase, compared to a 2,5% margin increase of the dissertation.

To sum up, the constant rising of premium wine consumption, the positive externalities of NDtech, the Hydrocork and the efficiency gains would result on EBITDA average annual growth of 14%, from 2016 to 2019. This dissertation presents an EBITDA growth of 23,47% in 2016, reflecting both new products and efficiency gains, which forecasts a good year for Corticeira Amorim. From 2017 to 2020, the dissertation presents a 3% annual increase. Regarding EBITDA, the forecasts are quite similar in 2016, but BPI is more optimistic regarding 2017 to 2020.

It is also important to mention that BPI valuation uses a 4-year forecast while this dissertation uses 5 years.

Regarding depreciations and amortizations, both valuations come up with slightly similar values. Therefore, because BPI provides a significantly higher EBITDA during the forecasted period, the EBIT will also be significantly higher compared to the dissertation scenario. It is possible to conclude that, taking into account the operational items, BPI’s equity research is way more optimistic than this dissertation. Appendix 6 shows the BPI’s Equity Research balance sheet, with both historical and forecasted data.

	2016		2017		2018		2019		2020
	Dissertation	BPI	Dissertation	BPI	Dissertation	BPI	Dissertation	BPI	Dissertation
Sales	623	655	641	711	660	759	679	804	699
EBITDA	124	124	128	140	132	155	136	169	140
D&A	26	26	24	27	25	27	25	28	25
EBIT	99	99	104	112	107	128	111	141	115
Earnings	66	70	70	83	73	93	75	101	78

Fig. 81 - Operational items comparison

Source: BPI’s Equity Research

4.2. Capex

Regarding capex, both valuations provide similar scenarios, with similar values. This fact reflects consensus considering the amount that Corticeira Amorim will invest in the upcoming years. In both valuations, capex is higher than depreciations and amortizations, reinforcing the statement that the company will keep investing in the future, namely in new products, efficiency and innovation. Appendix 5 and 7 illustrate the BPI’s valuation profits & losses and cash flow map, respectively.

	2016		2017		2018		2019		2020
	Dissertation	BPI	Dissertation	BPI	Dissertation	BPI	Dissertation	BPI	Dissertation
Capex	30	32	30	34	33	28	32	29	33

Fig. 82 – Capex comparison

Source: BPI’s Equity Research

4.3. Working Capital

Regarding the working capital, there are significant differences in both valuations. This dissertation assumes that Corticeira Amorim will keep its short-term health over the forecasted period, with soft fluctuations on both short-term assets and debt items. On the other hand, BPI forecasts bigger changes in the short-term items and, therefore, outcomes more volatile and bigger changes in the net working capital.

	2016		2017		2018		2019		2020
	Dissertation	BPI	Dissertation	BPI	Dissertation	BPI	Dissertation	BPI	Dissertation
Inventory	280	289	288	305	296	280	305	319	314
Clients	136	178	140	193	145	206	149	218	153
Other assets	29	9	30	10	30	10	30	11	31
Cash and Equivalents	8	12	8	15	8	66	8	69	9
Current Assets	457	488	470	523	483	562	497	617	511
Current Debt	95	217	98	232	100	240	102	252	104

Fig. 83 - Current items comparison

Source: BPI's Equity Research

	2016		2017		2018		2019		2020
	Dissertation	BPI	Dissertation	BPI	Dissertation	BPI	Dissertation	BPI	Dissertation
Changes in Net Working Capital	5	19	7	15	7	(24)	8	39	8

Fig. 84 - Changes in net working capital comparison

Source: BPI's Equity Research

4.4. Cash-flow

Considering the differences regarding the operational components, the capex and the working capital of both valuations, it was expectable much higher cash-flows on the BPI's valuation. This statement was verified.

	2016		2017		2018		2019		2020
	Dissertation	BPI	Dissertation	BPI	Dissertation	BPI	Dissertation	BPI	Dissertation
Cash-Flows	11	51	13	62	12	118	14	62	16

Fig. 85 - Cash flow comparison

Source: BPI's Equity Research

4.5. Wacc

In this chapter, there are also many differences between both valuations regarding the inherent assumptions.

	BPI	Dissertation
Risk-Free Rate	3,25%	0,3%
Country Risk Premium	1,85%	-
Beta Equity	0,80	1,22
Market Risk Premium	6%	3,99%
Ke	9,9%	5,13%
Kd	5,9%	0,92%
D/EV	25%	46,92%
Tax Rate	27,5%	28%
Wacc	8,5%	3,16%
g	2%	1,87%

Fig. 86 - Wacc and related items comparison

Source: BPI's Equity Research

The country risk premium was not included in the dissertation. Because Corticeira Amorim is the world leader in the cork industry and because it is one of the most international Portuguese companies due to its high export levels, it was assumed that Corticeira Amorim is not so exposed to the country risk. The cost of capital is very distinct in both valuations, namely due to different assumptions regarding the risk-free rate, the market risk premium and both cost of debt and equity.

Regarding the financial context of the company, the BPI's equity research was more pessimistic compared to this dissertation, as it states that investors demand a higher cost of capital due to the global context of the company.

4.6. Results

Taking into account the provided information, it is observable that both valuations use different assumptions and, therefore, the outcome of the valuation will be different.

	BPI	Dissertation
Enterprise Value	1.569	1.337
Equity Value	1.477	1.253
Share Price	10,00 €	9,419 €

Fig. 87 - Results comparison

Source: BPI's Equity Research

However, despite of different results, both reinforce the statement that the share price has potential to increase and, therefore, it suggests a good investment opportunity to get profits in the future.

5. Conclusion

The main objective of this dissertation is to make a valuation regarding the world's leader operating in the cork industry and one of the most international Portuguese companies, Corticeira Amorim. To do so, as presented in the Literature Review chapter, it is important to determine which are the most suitable valuation approaches to use taking into account the company's characteristics, as the outcome of the valuation process will be different depending on the chosen methodology. Due to the company's constant capital structure, the chosen method was the Discounted Cash-Flow approach.

The outcome of the DCF valuation was a share price of 9,419€. By analyzing the given value, it is plausible to affirm that it is a good investment opportunity, as the target price is higher than the current market price (8,191€) and the global business' future perspectives are favorable. The relative valuation approach tested the consistency of the results obtained in the DCF method, as the value belongs to the computed interval.

The Dividend Discount Model outcome was much higher (16,765€). Despite the fact that there is a big difference between the values, the DDM reinforces the statement that the share price has potential to increase its value in time, which translates into a good investment opportunity. Having said so, the suggestion to investors is to buy.

However, Corticeira Amorim also faces some challenges for the future. Reinforce the market share of each business unit is one of the company's goals. Constant innovation and improvement is also a target. Another challenge is linked to the Euro-Dollar and other exchange

rates, as it is difficult to predict and has impact on the company's performance as most of its sales are not dominated in euros.

By comparing both valuations, BPI's valuation turns to be more optimistic regarding the operational component and more pessimist on the financial context. Despite the fact that assumptions are different, in the end, both valuations suggest investors to buy.

6. Appendixes

6.1. Appendix 1: Adjusted Present Value vs Discounted Cash-Flow

6.1.1. Adjusted Present Value (APV)

The Adjusted Present Value (APV) is one of the alternatives to the wacc-based Discounted Cash-flow (DCF) valuation approach. It is most commonly used when evaluating a company whose capital structure is not stable and suffers several changes in time. Many authors argue that APV is the best method to use when a fluctuation capital structure scenario is observed, or expected, unlike the DCF model that requires a constant financing mix.

Another difference between these two methods is the methodology. APV computes the value of the firm in three steps. The first step is to determine the company's value as if there were no debt (100% equity). By doing this, the operating and the financing components are separated and treated individually. The second step is to compute the present value of the interest tax shields. Debt has advantages and those advantages increase the company's value. Therefore, these gains must be considered when determining the company's value. The third and final step is to compute the present value of the bankruptcy costs, which includes the inherent costs of financial distress due to the debt level and the bankruptcy probability.

The value of the firm is, then, given by summing up the value of the unlevered company, the present value of the interest tax shields and the present value of the bankruptcy costs.

$$\text{Value of the Firm} = \text{Value Unlevered} + \text{PV Interest Tax Shields} + \text{PV Bankruptcy Costs}$$

6.1.2. APV vs DCF approach

There is a lot of discussion among specialists about which of the two is the best approach. Both methodologies have pros and cons.

The DCF approach is the most commonly used among companies, namely because it is intuitive and simple, but it also faces critics. The financial effects of debt are incorporated in the tax-adjusted discount rate, which makes it simpler. However, it has disadvantages, as it is only suitable for companies with constant capital structure. It assumes both constant wacc and capital structures as companies are expected to optimize their capital structures in order to maximize the debt benefits and, consequently, the company's value. To optimize the capital structure, companies have to analyze both benefits and disadvantages of debt. Debt brings benefits until a certain point where debt costs become higher than the benefits. That is why the trade-off between benefits and losses have to be carefully pondered.

DCF is not suitable for companies with volatility on its capital structures as it would imply to compute the cost of capital for each year, according to the capital structure of the referred year. For that reason, in these cases, the APV is the best methodology. Because the APV determines the value of the company in three stages, separating operational and debt components, it is easier to determine where does the value come from. For higher fluctuations on the capital structure, the most suitable APV is comparing to DCF.

To sum up, the capital structure of the company is the decisive factor regarding which of the two methods should be used. Therefore, and because Corticeira Amorim reveals a solid capital structure over time and it is not expected to change it, the DCF approach is definitely the best approach to use.

6.2. Appendix 2: Income Statement of Corticeira Amorim

	Historical Data					Forecast					
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sales	456790	494842	534240	542500	560340	604800	622544	640810	659511	678630	698844
Costs of Sales	221777	243123	268035	264356	286205	307375	295709	304885	313815	322808	331970
Margin	51.45%	50.87%	49.83%	51.27%	48.92%	49.18%	52.50%	52.50%	52.50%	52.50%	52.50%
Changes in production	1817	3288	7755	(662)	948	1888	18722	19271	19836	2018	21017
External Services	78820	86602	93205	97266	9629	10037	103887	10623	109548	112859	11677
Staff Expenses	90712	93751	97678	10054	10335	111881	11564	118842	122020	12500	12985
Asset Impairment/Adjustments	2440	1872	1008	130	149	321	388	387	359	365	383
Other Income	6860	7502	6739	7765	9613	8934	9296	9266	9744	10030	1024
Other Losses	6512	7846	6343	7770	6581	8117	8355	8600	8853	9112	9380
EBITDA	66006	7238	82365	7827	86722	100721	124661	128009	131765	135631	139510
D&A	20867	21060	21206	21516	22336	25051	25786	2491	25076	25084	24850
EBIT	45139	51878	61259	56511	64386	75670	98875	103618	106689	110547	114760
Non-current losses	5110	5792	678	0	634	2904	3086	4115	3868	3523	369
Financial losses	5171	6828	7360	8888	6036	2847	524	4936	4569	5143	4882
Financial income	1007	131	1207	1095	180	58	444	227	243	305	259
Related income (losses)	350	91	(192)	692	1280	3091	1888	2020	2266	1991	2092
EBT	36215	4062	4736	49510	5356	73068	91897	9615	101261	10477	10860
Taxes	14861	13747	16203	18511	16766	17866	25675	2708	2853	2970	3037
Earnings	2134	26815	31133	30959	3680	5522	6622	6907	7208	7508	7863
Other interests	1218	141	678	620	924	558	663	700	732	753	785
% Earnings	5.60%	4.32%	2.14%	2.00%	2.52%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Earnings to Shareholders	20536	2524	31155	30339	35766	5514	6559	6900	7216	7454	7787
Dividend per share	0.162	0.200	0.246	0.242	0.285	0.431	0.491	0.519	0.543	0.558	0.582
#Number of Shares Outstanding						133000					

6.3. Appendix 3: Balance Sheet of Corticeira Amorim

Corticeira Amorim Balance Sheet (thousand €)	Historical Data						Forecast				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Assets											
Tangible fixed assets	168,302	172,372	182,173	184,611	182,931	190,521	193,199	196,881	199,211	201,971	205,018
Growth	2.34%	5.69%	1.37%	1.3%	-0.96%	4.08%	1.50%	1.50%	1.50%	1.50%	1.50%
PP&E	7,733	7,762	6,769	5,249	5,092	5,088	5,252	5,371	5,171	5,981	5,801
Growth	-2.03%	-19.80%	-13.61%	-1.12%	-3.51%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Goodwill	15,099	11,849	5,865	5,252	2,011	0	9,661	9,641	8,681	6,801	5,701
Associate investments	5,822	5,671	8,818	8,229	10,841	13,304	13,303	13,705	13,101	14,111	14,321
Intangible assets	6,121	4,271	5,511	6,931	11,091	20,891	21,131	27,441	2,811	3,025	3,171
Growth	-30.23%	29.98%	24.86%	57.43%	128.14%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Other financial assets	1,950	3,571	3,351	2,371	3,311	4,171	4,231	4,031	4,671	4,331	4,991
Differed taxes	7,742	6,051	6,746	6,341	6,708	8,351	10,891	10,647	10,661	10,961	11,321
Non-current assets	206,971	207,869	213,168	212,744	213,255	223,891	238,691	242,881	245,271	246,319	249,005
Inventory	184,798	224,022	231,111	244,063	247,331	271,051	279,671	287,881	296,291	305,023	313,721
Clients	11,011	11,675	12,411	12,106	12,266	13,245	13,614	14,013	14,157	14,879	15,316
Taxes	1,659	2,362	4,852	8,026	2,233	3,191	3,931	4,159	4,350	4,875	4,641
Other assets	9,771	10,162	3,114	3,181	2,567	2,879	2,910	2,943	2,985	3,034	3,089
Cash and equivalents	33,131	21,811	3,915	7,781	6,037	7,651	7,841	7,909	8,142	8,801	8,621
Current assets	354,741	397,851	430,001	414,664	404,821	443,331	456,841	469,311	483,621	497,101	511,111
Total assets	561,711	605,054	643,169	627,408	617,076	667,221	695,111	712,191	728,891	743,076	760,120
Equity											
Social capital	133,001	133,001	133,001	133,001	133,001	133,001	133,001	133,001	133,001	133,001	133,001
Own shares	(62,47)	(62,47)	(71,69)	(71,97)	(71,97)	0	0	0	0	0	0
Reserves and other	1,091	11,782	12,106	13,258	14,051	15,275	15,726	16,189	16,659	17,185	17,651
Results from the period	205,311	25,074	3,105	30,391	35,056	55,041	65,591	69,071	72,761	74,254	77,371
Interests	12,111	12,331	14,655	13,009	13,931	13,368	13,368	13,368	13,368	13,368	13,368
Total equity	268,241	282,293	295,247	301,738	315,669	354,136	368,931	377,241	385,421	392,108	400,263
Debt											
Bearing debt	14,231	62,641	52,631	33,121	2,625	41,111	42,361	43,891	44,191	45,301	4,671
Other debt	1,161	10,251	13,228	10,481	1,153	10,111	10,341	10,681	10,821	11,081	11,191
Provisions	14,571	1,670	2,103	2,508	2,751	3,271	3,371	3,431	3,504	3,562	3,621
Differed taxes	5,982	6,101	6,901	7,821	6,971	6,743	8,161	8,941	9,341	9,511	10,111
Non-current debt	35,931	95,921	93,111	76,381	7,267	9,026	9,509	9,782	10,041	10,211	10,341
Bearing debt	12,111	7,641	10,831	7,811	6,789	5,014	5,245	5,315	5,436	5,533	5,671
Suppliers	9,781	10,599	9,924	12,503	11,503	12,111	12,497	12,899	13,211	13,604	14,003
Other debt	2,611	30,565	40,011	42,821	44,071	49,518	51,511	52,746	53,851	54,881	55,681
Taxes	11,051	13,824	7,481	2,951	2,201	2,561	2,561	2,971	2,831	2,912	3,034
Current debt	2,571	22,699	25,511	24,932	22,911	22,191	23,111	23,721	24,387	24,931	25,511
Total debt	2,931	32,211	34,511	32,557	30,111	31,386	32,651	33,509	34,391	35,111	36,005
Total equity & debt	561,711	605,054	643,169	627,408	617,076	667,221	695,111	712,191	728,891	743,076	760,120

6.4. Appendix 4: Cash-Flow Map of Corticeira Amorim

	Corticeira Amorim Cash-Flow Map (thousands)										
	Historical Data					Forecast					
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Operational Activities											
Receiving clients	4652852	5366642	5886932	5952902	6157632	6422522	6612242	6807572	7008662	7211572	7428852
Payment to suppliers	(323634)	(450253)	(464501)	(457211)	(510079)	(514686)	(528558)	(551211)	(563233)	(580274)	(598169)
Staff expenses	(89705)	(912203)	(98249)	(9206)	(102064)	(110261)	(104244)	(106223)	(107276)	(106221)	(106760)
Receiving/Payment of taxes	512462	(5222)	252432	382722	6222	172052	272222	222222	302572	352152	372172
Other receiving/Payment related to operational activity	(3034)	(6222)	(12201)	(22228)	(92279)	(15211)	(152272)	(13254)	(152046)	(14258)	(14219)
Fluxo Operacional	102192	382952	372052	502162	722552	5229522	582022	612052	572582	592342	592422
Fluxo Investimento	5829312	222252	522472	622612	632962	5425462	7022572	7022742	732002	7922912	822932
Investment Activities											
Receiving from:											
Tangible fixed assets	12022	32242	6122	4022	6722	422	5212	5622	5222	5322	5322
Intangible assets	22	22	22	22	22	22	22	22	22	22	22
Financial investments	22	422	62	22	122	522	222	222	222	222	222
Other assets	4812	4522	1572	12252	1822	2272	2272	2272	2272	2272	2272
Interest related to income	9222	122892	122322	9722	722	642	3712	1712	2222	2422	2272
Investment subsidies	542	6922	522622	122352	322272	222952	222192	222822	222512	222572	222692
Dividends	2222	2522	2522	2522	2922	2272	2222	2222	2222	2222	2222
Payments due to:											
Tangible fixed assets	(162766)	(26272)	(22229)	(25295)	(21216)	(312289)	(27224)	(22221)	(30265)	(32226)	(31257)
Financial investments	(449)	(2225)	(14253)	(1271)	(2254)	(92)	(1222)	(12229)	(892)	(12262)	(12119)
Intangible assets	(92)	(47)	(42)	(351)	(562)	(12217)	(12265)	(12250)	(12245)	(12235)	(12235)
Investment subsidies	(275)	(14)	22	22	(12229)	(22229)	(12279)	(12239)	(12282)	(12267)	(12263)
Fluxo Financiamento	(152744)	(22225)	(27268)	(22266)	(22224)	(312220)	(272222)	(22263)	(312224)	(312229)	(322299)
Financing Activities											
Receiving from:											
Loans	22	32242	172142	22	22	22	22	22	22	22	22
Own shares sold	22	22	22	22	22	22	22	22	22	22	22
Other	6312	7822	4722	122692	122842	122252	122932	1222012	122732	122552	122762
Payments due to:											
Loans	(122597)	22	22	(42242)	(122517)	(22575)	(22575)	(22575)	(22575)	(22575)	(22575)
Interest related to costs	(32251)	(62273)	(62217)	(62220)	(322692)	(222894)	(422228)	(322577)	(32266)	(32291)	(32251)
Dividends	(7224)	(122227)	(222297)	(222296)	(242225)	(522229)	(312277)	(322572)	(322285)	(322544)	(322622)
Own share purchase	(32246)	22	(6226)	(264)	22	22	22	22	22	22	22
Other	(422)	(12239)	(12278)	(562)	(422)	(422)	(422)	(422)	(422)	(422)	(422)
Fluxo de Financiamento	(26249)	(162220)	(112288)	(622299)	(422220)	(212255)	(372296)	(422271)	(422283)	(422283)	(412279)
Cash and equivalents variation	1627322	(122220)	132222	(222544)	3222	122712	522392	122222	(92)	(111)	(92)
Exchange effect (currency)	6542	(122)	22	(492)	(62295)	(52299)	(42259)	522	(622)	(92)	(92)
Cash and equivalents in beginning period	122522	122942	622312	122242	(62295)	(52299)	(42259)	522	(622)	(92)	(92)
Cash and equivalents in end period	122942	622312	122242	(62296)	(52220)	(42259)	522	(622)	(92)	(92)	(92)

6.5. Appendix 5: BPI's Valuation Profit & Losses - Corticeira Amorim

P&L (€ mn)	CAGR 15-19F													
	2013	2014	2015	2016F	2017F	2018F	2019F	2013	2014	2015	2016F	2017F	2018F	2019F
Revenues	543	560	605	655	711	759	804							7%
EBITDA	78	87	101	124	140	155	169							14%
EBITDA adj.	78	87	101	124	140	155	169							14%
EBITDA adj. mg.	14.4%	15.5%	16.7%	19.0%	19.7%	20.4%	21.0%							
Depreciation & others	22	22	25	26	27	27	28							2%
EBIT	57	64	76	99	112	128	141							17%
EBIT adj.	57	64	76	99	112	128	141							17%
Net financial results	-7	-5	0	0	0	0	0							n.s.
Income tax	19	17	17	23	28	33	39							22%
Others	0	-6	-3	-4	0	0	0							n.s.
Minority Interests	1	1	1	1	1	1	2							28%
Net Profit reported	30	36	55	70	83	93	101							16%
Net Profit adj.	30	40	57	70	83	93	101							15%

6.6. Appendix 6: BPI's Valuation Balance Sheet - Corticeira Amorim

Balance Sheet (€ mn)	CAGR								
	2013	2014	2015	2016F	2017F	2018F	2019F	2019F	15-19F
Net Intangibles	6	4	2	3	4	4	5	5	19%
Net Fixed Assets	185	183	190	196	203	202	203	203	2%
Net Financials	16	20	22	22	22	22	22	22	-1%
Inventories	244	248	272	289	305	280	319	319	4%
ST Receivables	163	151	164	178	193	206	218	218	7%
Other Assets	6	7	8	9	10	10	11	11	7%
Cash & Equivalents	8	6	7	12	15	66	69	69	75%
Total Assets	627	617	667	710	751	792	847	847	6%
Equity & Minorities	302	316	354	391	432	474	518	518	10%
MLT Liabilities	69	66	83	102	87	77	77	77	-2%
o.w. Debt	34	26	41	60	45	35	35	35	-4%
ST Liabilities	256	236	230	217	232	240	252	252	2%
o.w. Debt	79	67	50	20	20	15	15	15	-26%
o.w. Payables	138	129	137	150	162	171	180	180	7%
Equity+Min. + Liabilities	627	617	667	710	751	792	847	847	6%

6.7. Appendix 7: BPI's Valuation Cash-Flow Map - Corticeira Amorim

Cash flow (€ mn)	2013	2014	2015	2016 ^F	2017 ^F	2018 ^F	2019 ^F
+ EBITDA	78	87	101	124	140	155	169
- Chg in Net W.C.	-19	10	28	19	15	-24	39
- Income Taxes	28	5	18	23	29	34	39
= Operating Cash Flow	70	72	54	83	96	145	91
- Growth Capex	6	0	8	9	9	0	0
- Replacement Capex	21	21	23	23	25	28	29
- Net Fin. Inv.	-2	4	3	0	0	0	0
= Cash Flow after Inv.	45	47	21	51	62	118	62
- Net Fin. Exp.	7	5	0	0	0	0	0
- Dividends Paid	21	25	51	35	44	52	59
+/- Equity	0	0	0	0	0	0	0
Other	0	0	34	0	0	0	0
=Change in Net Debt	-17	-17	-4	-16	-18	-66	-3
Net Debt (+)/Net Cash (-)	104	88	84	68	50	-16	-19

7. References

7.1. Websites

Corticeira Amorim Website, Retrieved from <http://www.amorim.com/>

Damodaran Academic Website – Damodaran Online, Retrieved from <http://pages.stern.nyu.edu/~adamodar/>

Financial Times Website, Retrieved from <https://www.ft.com/>

FED Website, Retrieved from <https://www.federalreserve.gov/>

7.2. Books

Damodaran, A. (2002), “Investment Valuation: Tools and Techniques for Determining the Value of Any Asset”, 2nd Edition – University Edition, New York: John Wiley & Sons, Inc.

Damodaran, A. (2012), “Investment Valuation: Tools and Techniques for Determining the Value of Any Asset, 3rd Edition – University Edition, New York: John Wiley & Sons, Inc.

Koller, T., Goedhart, M., and Wessels, D. (2005), “Valuation: Measuring and Managing the value of Companies”, 4th Edition – University Edition, New Jersey: McKinsey and Company.

DeMarzo, P., Berk, J. (2013), “Corporate Finance”, 3rd edition – Pearson.

7.3. Articles

Damodaran, A. (1999), “Estimating Risk Parameters”, Stern School of Business.

Damodaran, A. (2006), “Valuation Approaches and Metrics: A Survey of the Theory and Evidence”, Stern School of Business.

Damodaran, A. (2008), “Equity Risk Premiums (ERP): Determinants, Estimation and Implications”, Stern School of Business.

Luehrman, T. (1997), “Using APV: a better tool for valuing operations”, Harvard Business Review, 75 (3): 145-172.

Luehrman, T. (1997), “What’s it Worth? A General Manager’s Guide to Valuation”, Harvard Business Review, 75 (3): 132-142.

Janiszewski, S. (2011), “How to perform discounted cash flow valuation?”, Foundations of Management, Warsaw University of Technology, 3(1).

- Koller, T.M. and James, M., (2000), “Valuation in emerging markets”, *The McKinsey Quarterly*.
- Kaplan, P.D. and Peterson, J.D., (1998), “Full-Information Industry Betas”, *Financial Management*.
- Kaplan, S.N. and R.S. Ruback, (1995), “The Valuation of Cash Flow Forecasts”, *Journal of Finance*, 50:1059-1093.
- Ohlson J. (1995), “Earnings, Book values and Dividends in Security Valuation”, *Contemporary Accounting Research*, 11:661-687.
- Ohlson, J.A. and Zhang, X. (1999), “On the Theory of Forecast Horizon in Equity Valuation”, *Journal of Accounting Research*, 37 (2).
- Mullins, David W. (1982), “Does the capital asset pricing model work?”, *Harvard Business Review*.
- Kraus, A. and Litzenberger, R.H., (1973), “A State-Preference Model of Optimal Financial Leverage”, *Journal of Finance*, 911-922.
- Miles, J.A. and Ezzell, J.R. (1980), “The Weighted Average Cost of Capital, Perfect Capital Markets, and Project Life: A Clarification”, *The Journal of Financial and Quantitative Analysis*, 15 (3).
- Miller, M.H., (1977), “Debt and Taxes”, *Journal of Finance*.
- Morgan Stanley Dean Witters, (1999), “How We Value Stocks”.
- Goedhart, M.H., Koller, T. and Wessels, D., (2005), “The right role for multiples in valuation”, *The McKinsey Quarterly*.
- Fama, E. and K. French, (1988), Dividend Yields and Expected Stock Returns, *Journal of Financial Economics* 22, 3-25.
- Fama, E.F. and French, K.R. (1996), “The CAPM is Wanted, Dead or Alive”, *The Journal of Finance*.
- Fernandez, P. (2001), “Valuation using multiples. How do analysts reach their conclusions?”, *IESE Business School*.
- Fernandez, P. (2002), “Three Residual Income Valuation Models and Discounted Cash Flow Valuation”, Working Paper, *IESE Business School*.
- Fernandez, P. (2004), “The value of tax shields is not equal to the present value of the tax shields”, *Journal of Financial Economics*, 73: 145-165.
- Fernandez, P. (2009), “Market Risk Premium used in 2008 by Professors: a survey with 1,400 answers”, *IESE Business School*.

Liu J., Nissim D. and Thomas J.K. (2000), “Equity valuation using multiples”, *Journal of Accounting Research*, 40 (1): 135-172.

Hartman, J.C., (2000), “On the Equivalence of Net Present Value and Economic Value Added as Measures of a Project’s Economic Worth”, *The Engineering Economist*, 45.

Steiger, F., (2008), “The Validity of Company Valuation using discounted Cash Flow Methods”, *European Business School*.

7.4. Other sources

APCOR yearbook 2015

2010-2015 Corticeira Amorim Annual Reports and Accounts

Thomson Reuters

BPI Equity Research 2016 Report of Corticeira Amorim SGPS SA