

EQUITY RESEARCH: THE NAVIGATOR COMPANY

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Resumo

A avaliação é o elemento mais crítico de um investimento bem sucedido (CFA Institute, 2010). E, no entanto, é um desafio complexo, que leva a conclusões incertas: os pressupostos assumidos resultam em previsões, que por sua vez resultam num *Equity Value* por ação.

Não obstante, a Avaliação de Empresas é crucial para direcionar as decisões de investidores, bem como para sinalizar a saúde financeira das empresas avaliadas.

Esta *Equity Research* valoriza o preço das ações da The Navigator Company a 31 de dezembro de 2018, através das metodologias de Fluxos de Caixa Descontados e dos Múltiplos de Mercado, com o objetivo de fazer uma recomendação de investimento.

A The Navigator Company é uma empresa europeia, líder no setor de pasta de papel, que recentemente investiu na expansão da capacidade instalada do seu mais recente segmento de negócios (papel *tissue*).

Os pressupostos dos modelos de avaliação são suportados por informações históricas, macroeconómicas e/ou do setor e seguem uma abordagem conservadora.

Os resultados da avaliação através de todas as metodologias sugerem que as ações da Navigator estão a ser transacionadas abaixo do seu justo valor. Assim sendo, a recomendação de investimento seria no sentido da compra de ações da Navigator.

Palavras-chave: Avaliação, Fluxos de caixa, Enterprise Value, Equity Value

JEL Classification System: G30 (Corporate Finance and Governance: General), G32 (Corporate Finance and Governance: Value of Firms)

Abstract

Valuation is the most critical element of a successful investment (CFA Institute, 2010). And yet, it is a complex challenge, that leads to uncertain conclusions: assumptions result in forecasts, which in turn result in a theoretical Equity Value per share.

Nonetheless, the valuation of Equity Assets is crucial to guide investors' decisions, as well as to signal the financial health of the evaluated companies.

This Equity Research values the share price of The Navigator Company as of December 31st, 2018 through the Discounted Cash Flows and Relative Valuation methodologies, aiming to make an investment recommendation.

The Navigator Company is a leading European player in the Pulp & Paper sector, who recently invested in the expansion of the installed capacity in its newest business segment (tissue paper).

Assumptions of the valuation models are supported by historical, macroeconomic and/or industry information and follow a conservative approach.

Valuation results across all the methodologies suggest that Navigator' shares are priced below its fair value. Therefore, the investment recommendation is to buy Navigator shares.

Keywords: Valuation, Cash-Flow, Enterprise Value, Equity Value

JEL Classification System: G30 (Corporate Finance and Governance: General), G32 (Corporate Finance and Governance: Value of Firms)

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Glossary

€ – Euro

€M – Millions of Euro

Δ – Variation

BEKP – Bleached Eucalyptus Pulp

CAGR – Compound Annual Growth Rate

CAPEX – Capital Expenditures

CEPI – Confederation of European Paper Industries

CF – Cash Flow

CFA – Chartered Financial Analyst

D&A – Depreciations and Amortisations

DCF – Discounted Cash Flows

DIO – Days Inventory Outstanding

DPO – Days Payables Outstanding

DSO – Days Sales Outstanding

EBIT – Earnings Before Interest and Taxes

EBITDA – Earnings Before Interest, Taxes, Depreciation and Amortisation

EBT – Earnings Before Taxes

EOY – End Of the Year

EV – Enterprise Value

FCFE – Free Cash Flow to Equity

FCFF – Free Cash Flow to the Firm

GDP – Gross Domestic Product

IMF – International Monetary Fund

IPO – Initial Public Offering

Navigator – The Navigator Company, S.A.

NOPLAT – Net Operating Profit Less Amortisation and Taxes

NWC – Net Working Capital

PPPC – Pulp and Paper Products Council

ROA – Return on Assets

ROE – Return on Equity

ROIC – Return on Invested Capital

Semapa – Semapa - Sociedade de Investimento e Gestão, SGPS, S.A

USA – United States of America

UWF – Uncoated WoodFree

WACC – Weighted Average Cost of Capital

1. Executive Summary

Equity Valuation is one of the key areas of Finance. In fact, CFA Institute (2010) classifies valuation as the most critical element of a successful investment. Equity Valuation is often presented under the Equity Research format, as the one presented in this report.

An Equity Research gathers information about the historical performance of the target company (with a range of information detail that can go to a general overview to highly detailed analysis). Moreover, and more importantly, it should try to compile all the available information regarding the future strategy of the target company, in order to increase the accuracy of the financial projections at EBITDA (operational performance), CAPEX (investment), Debt evolution (financing) and NWC level.

The output of any Equity Research is an investment recommendation, which is not only to be used by investors and portfolio managers, but also useful to all of the target company's stakeholders.

The presented Equity Research aims to evaluate the fair share price of The Navigator Company as of December 31st, 2018.

Navigator (originally named Portucel Soporcel) operates in the Pulp and Paper segment, and is the result of the merger of multiple pulp and paper companies, a consequence of the nationalization of this sector by the Portuguese State in 1975. The company was privatized 1995. Its current majority owner, Semapa, holds a 67.1% equity stake in the company. In 2006, Portucel Soporcel was selected to enter in the PSI20 Index, the more important index of the Portuguese stock market.

Portucel Soporcel was renamed into The Navigator Company in 2016, in order to increase its international visibility. Nevertheless, Navigator maintains the core of its operation in its home country, Portugal, exporting a large portion of its production.

Navigator currently holds, in the European market, a share of 50% in the premium paper segment and 19% in UWF paper, being the largest European manufacturer of the latter.

The average Equity Value per share obtained through the different methodologies employed amounts to €4.03, which represents a potential upside of 11.95% when comparing with Navigator' share price as of December 31st, 2018 (€3.60).

2. Literature Review

2.1 Introduction to valuation

CFA Institute defines Valuation as the “estimation of an asset’s value based on variables perceived to be related to future investment returns, on comparison with similar assets”, whilst considering that valuation is the most critical element of a successful investment (Pinto *et al.*, 2010:1).

The key to successfully value an asset is to understand which are the sources of that assets’ value, and how to capture them in the different valuation models. Despite that, the similarity in the basic principles of valuation across different assets are remarkable (Damodaran, 2012). Over the years, multiple models have been created, restructured, perfected, and even abandoned, but the core models used in the market remain mostly unchanged, and aim to value an asset based on the cash flow it is expected to generate.

Furthermore, and according to Frikman and Tolleryd (2003:12), the need to evaluate a company arises essentially in four situations:

- Raising capital for growth;
- Creating an incentive programme to keep and attract employees;
- Executing a merger, acquisition or divestiture;
- Conducting an IPO.

The final objective of this project is to evaluate The Navigator Company following the base guideline that the primary goal of any investor should be not to pay more for an asset than it is worth (Damodaran, 2012).

Hence, this literature review aims to clarify the foundations of the valuation methodologies used, as a mean to facilitate the interpretation of the results presented forward.

2.2 Valuation methodologies

2.2.1 Discounted Cash Flows (DCF)

According to Mota *et al.* (2014), the main advantage of using discounted cash flows models is that it allows for an investor to evaluate a company from a dynamic perspective (in opposition to a static perspective). The authors defend that a company's worth is measured by its capability of creating wealth – measured through cash flows – in the future, regardless of its past or current situation.

In accordance, Damodaran (2011) defines a firm's value as the present value of its expected future cash flows, discounted at a rate that reflects the risk of the firm.

As such, DCF approach has its foundation in the Net Present Value (NPV) concept, where the NPV of a project is the difference between the value of cash inflows and the cash outflows, discounted to the present moment (Brealey *et al.*, 2011). Future cash flows are discounted to reflect the premise that cash flows are worth more today than what they are worth tomorrow, both because of the time value of money and the risk associated with the uncertainty of future cash flows.

A positive DCF indicates that a project/company generates more cash than it consumes, hence being profitable for its shareholders.

The Discounted Cash Flow methodology is considered by many as the most precise of all valuation methods, since it is the only one that gives investors a specific value (and not a value interval) of how much the company is worth. Despite its precision, accuracy is often the bigger issue, since this analysis relies on forecasts of future cash flows, which in turn depend on multiple assumptions.

In conclusion, the discounting of cash flows that takes into account the associated risk can be synthesized as (Damodaran, 2012: 14):

$$\text{Discounted cash flows} = \sum_{t=1}^{t=n} \frac{CF_t}{(1+r)^t} \quad (1)$$

Where:

n = life of the asset

CF_t = Cash flow in period t

r = Discount rate reflecting the riskiness of cash flows

The most common models to value companies based on their future cash flows are Free Cash Flow to the Firm (FCFF) and Free Cash Flow to Equity (FCFE) (Pinto *et al.*, 2010).

2.2.2 Free Cash Flow to the Firm (FCFF)

Free Cash Flow to the Firm expresses the net amount of cash that is generated for a firm after expenses, taxes, changes in net working capital and investments in fixed capital are deducted. It is essentially a measurement of a company's profitability after all expenses and investments, taking into account all the claimholders/investors, such as shareholders, bondholders and preferred shareholders (Pinto *et al.*, 2010).

In accordance, the discount rate used to discount the cash flows obtained through the FCFF method should also reflect the cost of the funds made available to the company by shareholders and debtholders. The discount rate that blends the return required by debtholders (r_d) and equity holders (r_e) is the Weighted Average Cost of Capital (WACC). For further information on the attainment of this rate, refer to chapter **2.2.2 Weighted Average Cost of Capital**.

FCFF can be obtained by (Pinto *et al.*, 2010):

$$FCFF = EBIT(1 - t) + D\&A - CAPEX \mp \Delta NWC, \text{ or} \quad (2)$$

$$FCFF = \text{Net Income} + \text{Interest Expense} * (1 - t) + D\&A - CAPEX \mp \Delta NWC, \text{ or} \quad (3)$$

$$FCFF = OCF - CAPEX \quad (4)$$

Where:

EBIT = Earnings before Interests and Taxes

t = Corporate tax rate

D&A = Depreciations and amortisations

CAPEX = Capital Expenditures, net of disposals

ΔNWC = Investment in Net Working Capital

OCF = Operational Cash Flow

CAPEX is the investment effort associated with both the expansion and renovation of the company fixed assets.

Net Working Capital is the difference between current assets (e.g. cash, inventory, and accounts receivable) and current liabilities (e.g. account payables, taxes payable, wages payable) driven by the business of the company.

The release or consumption of resources in period t represents the Investment in Working Capital, and is calculated by (Berk and DeMarzo, 2014):

$$\Delta NWC_t = NWC_t - NWC_{t-1} \quad (5)$$

Where:

NWC = Current Assets – Current Liabilities

NWC_t = Net Working Capital of Year t

NWC_{t-1} = Net Working Capital of Year $t-1$

Operational Cash Flow represents the cash generated by the business itself and contemplates the fact that D&A do not represent a cash outflow. Nevertheless, the tax effects of such D&A needs to be considered when computing cash flows (Berk and DeMarzo, 2014).

The FCFF model assumes that yearly projections will be made up to a point in time when the Company's activity tends to stabilise. Nonetheless, valuation analysts generally assume perpetual life span for the Company's activity .

The period to which yearly projections are made is called the Explicit Forecast Period. The length of the Explicit Forecast Period depends essentially on information available on the operational activity, as well as forecasts and future strategy guidelines provided by the management of the Company. As we try to project deeper into the future, the uncertainty grows. For this reason, Mota *et al.* (2012) defend that the Explicit Forecast Period should rarely and only in very specific situations be longer than 5 years.

To capture the continuity value of a Company (that is, the value of cash flows that fall after the Explicit Forecast Period), a constant perpetual growth of cash flows (g) is assumed. This continuity value is called Terminal Value and equals (Damodaran, 2015):

$$\text{Terminal Value} = \frac{FCFF_{n+1}}{WACC - g} \quad (6)$$

Where:

$FCFF_{n+1}$ = Free Cash Flow to Firm of the Year Following the Last Year of Explicit Forecast Period

WACC = Weighted Average Cost of Capital

g = Perpetual Growth Rate of Cash Flows, after the Explicit Forecast Period

The Enterprise Value (EV) is obtained by discounting both the Explicit Forecast Period cash flows and the Terminal Value at the Weighted Average Cost of Capital, as follows:

$$\text{Enterprise Value} = \sum_{t=1}^n \frac{FCFF_t}{(1 + WACC)^t} + \frac{\text{Terminal Value}}{(1 + WACC)^t} \quad (7)$$

Where:

$FCFF_t$ = Free Cash Flow to Firm of Year t

WACC = Weighted Average Cost of Capital

Terminal Value = Value of Perpetual Cash Flows, as shown on equation (6)

Since Enterprise Value represents the value of all the operating assets of the firm or, in another perspective, the value of the business carried out by the company.

Once the Enterprise Value is determined, Equity Value is calculated by adjusting the obtained value for cash flows not attributable to shareholders – essentially debt – and assets not directly associated with the Company's core business – non-operational assets (Koller *et al.*, 2010):

$$\text{Equity Value} = \text{Enterprise value} + \text{Non operational assets} - \text{Debt and equivalents} \quad (8)$$

Non-operational assets often include cash and equivalents, marketable securities, nonconsolidated subsidiaries, operating leases and pension assets.

Debt and equivalents should be value at their market value. This includes not only contracted loans, but also provisions, contingent liabilities and pension liabilities.

2.2.3 Weighted Average Cost of Capital (WACC)

As mentioned before, the discount factor used when computing FCFF is WACC, which represents the rates of return of both the Company's debt and equity holders, weighted by the respective participation on the capital structure (Fernandéz, 2011):

$$WACC = \frac{E}{E + D} * r_E + \frac{D}{E + D} * r_D * (1 - t) \quad (9)$$

Where:

E = Market Value of firm's Equity

D = Market Value of firm's Debt

$\frac{E}{E+D}$ and $\frac{D}{E+D}$ = Target Capital structure

r_E = Cost of equity

r_D = Cost of debt

t = Corporate tax rate

2.2.3.1 Target capital structure

The average ratio of D/E of the peer group of a company is a proxy for a target capital structure, since it is expected that, in the long term, the Company's capital structure will converge to that point.

2.2.3.2 Cost of Debt

Cost of debt represents the interest rate at which the company is capable of financing itself. This rate implicitly reflects the default risk of the Company, as well as the average market interest rates (Damodaran, 2012).

Moreover, the tax shield associated with the payment of interest is deducted to the overall cost of debt.

2.2.3.3 Cost of Equity

According to Mota *et al.* (2012), the cost of equity is the rate that reflects both the operational and financial risk of a Company – measures operational risk through the unlevered beta, and ponders it by the weight of equity in the capital structure of the Company.

According to Fabozzi *et al.* (2006), the return of an asset is a positive linear function of its index of systematic risk – hereby measured by parameter Beta:

$$r_E = r_f + \beta_L * [E(r_m) - r_f] + CRP \quad (10)$$

Where:

r_E = Cost of Equity

r_f = risk-free rate

$E(r_m)$ = Expected value of Market return

$E(r_m) - r_f$ = Market Risk Premium

β_L = Levered beta

CRP = Country Risk Premium

The risk-free rate is the interest rate at which money can be borrowed or lent without risk over that period (Berk and DeMarzo, 2014). According to Frykman and Tolleryd (2003), the best proxy for the return of a riskless asset is the return of long-term government bonds or treasury bills. Despite that, the authors suggest the use of 10 or 15 years maturity bonds, since bonds with longer maturity tend to have lower liquidity. The currency of such bonds should match the currency of the estimated cash flows.

As mentioned, Levered beta captures the operational risk of the Company, compared to the market – that is, the higher the beta, the more affected a company will be by fluctuations in the market.

According to Damodaran (2012), the ideal benchmark for the unlevered beta should be based on similar assets to the one that we aim to evaluate. Even though this methodology bases its forecasts on historical data, which might not be the perfect proxy for future performances, it is generally acknowledged as an acceptably reliable measurement of risk.

The formula to calculate Unlevered Beta is:

$$\beta_L = \beta_U + \beta_U * (1 - t) * \frac{D}{E} \quad (11)$$

Where:

β_L = Levered beta

β_U = Unlevered beta

t = Corporate tax rate

$\frac{D}{E}$ = Debt to Equity ratio

Unlevered Beta measures the risk of a Company, excluding the impacts of its capital structure, meaning it disregards the impact of loans' repayment and the respective interest.

The Market Risk Premium, defined as the difference between the market return and the risk-free rate, represents the additional remuneration over the risk-free rate demanded by the investors for investing in the overall stock market.

According to Koller *et al.* (2010), market risk premium can be estimated by one of three methodologies:

- Measuring historical returns and extrapolating them to the future;
- Finding a regression link between current market variables (p.e. dividend-to-price ratio);
- Using DCF valuation together with return on investment and growth estimates and reverse engineer the cost of capital.

Although there is not currently any model that estimates, precisely, the market risk premium, Koller *et al.* (2010) point out towards a range between 4.5 and 5.5 percent. In turn, Frykman and Tolleryd (2003) state that the risk premium for companies included in S&P 500 is approximately 5 to 6 percent, and that yearly research is carried out to adjust this estimate to each sector.

Lastly, Country Risk Premium represents the additional return claimed by investors, to compensate for risk that is specific from the country where the company is located.

2.2.4 Free Cash Flow to Equity (FCFE)

Alternatively to measuring and valuing cash flows and profitability for all the claimholders, analysts can choose to evaluate directly cash flows available to Equity holders, through the Free Cash Flow to Equity methodology.

The formula to compute FCFE is then as follows (Berk and DeMarzo, 2014):

$$\text{FCFE} = \text{FCFF} - \text{Interest payments} * (1 - t) + \text{Net Borrowing} \quad (12)$$

Where:

FCFE = Free Cash Flow to Equity

FCFF = Free Cash Flow to the Firm

t = Corporate tax rate

Net Borrowing comprises the variation of contracted debt, represented by:

$$\text{Net Borrowing} = D_t - D_{t-1} \quad (13)$$

Where:

D_t = Debt at the end of period t

D_{t-1} = Debt at the end of period t-1, equal to Debt at the beginning of period t

Decomposing the value of FCFF (formula 4), the complete formula to compute FCFE is:

$$\text{FCFE} = \text{Net income} + \text{D\&A} - \text{CAPEX} \mp \Delta\text{NWC} + \text{Net Borrowing} \quad (14)$$

Where:

D&A = Depreciations and amortisations

CAPEX = Capital Expenditures, net of disposals

ΔNWC = Investment in Net Working Capital

Since FCFE reflects cash flows available to shareholders, the rate to discount the cash flows should be the return demanded by them – that is, the Cost of Equity (refer to chapter 2.2.3.3).

2.2.5 Dividend Discount Model (DDM)

When buying a minority stake at both a publicly traded or a non-publicly traded company, the investors do not gain control powers over that company. In that scenario, the return of the investors is the sum of the dividends paid in the period during which holds those shares, and the gain or loss recorded in the moment of their disposal – which is the difference between the purchase and sell price of such shares (Damodaran, 2012).

Since the price itself is highly correlated with the dividends paid, Dividend Discount Model (DDM) states that the value of a stock is the sum of the discounted values of dividends paid in perpetuity.

Similarly to FCFF and FCFE models, the Market Value of Equity is obtained discounting the future expected cash flows – in this methodology represented by the distributed dividends.

In a scenario where there is an expectation that the investor will hold the shares indefinitely, the value of those shares for an investor is (Frykman and Tolleryd, 2003):

$$\text{Share Price} = \frac{D_1}{(1+r_E)} + \frac{D_2}{(1+r_E)^2} + \dots + \frac{D_n}{(1+r_E)^n} + \frac{TV}{(1+r_E)^n} \text{ with} \quad (15)$$

$$TV = \frac{D_{n+1}}{(r_E - g)} \quad (16)$$

Where:

TV = Terminal Value

N = Number of years in Explicit Forecast Period

D_t = Expected dividends per share, in period t

r_E = Cost of Equity

g = Perpetual growth rate

Expected dividends per share are forecasted taking into consideration historical returns and payout ratios (percentage of Net income that is distributed to shareholders via dividends).

The main limitation of this model is that, in addition to considering historical performance as a proxy of future performance, it also considers that the policy of dividend distribution will not change during the period on which the investors holds the shares.

Nonetheless, due to fact that it is one of less subjective valuation models and of its simple calculation, this model is frequently used as a complement to other valuation models.

2.2.6 Relative Valuation

In 2011, Damodaran defined Relative Valuation as the process of valuing an asset based on the market price of similar assets.

Damodaran (2006) and Koller *et al.* (2010) both listed some principles for the correct use of Relative Valuation, which overlap on many aspects, and include:

- The application of the multiple needs to be consistently defined across the compared firms;
- The multiple distribution across different sectors (in contrast to firms exclusively belonging to the target sector) impacts the interpretation of results;
- When analysing the multiples, understand its variables, and how changes on those variables impact the value and interpretation of each multiple;
- Control for differences between the chosen firms. Non-operating items should not impact multiples used in Relative Valuation;
- Find the right peer group. Any potential outliers need to be excluded from the peer group, since they will distort the multiple average resultant from that sample.

According to Berk and DeMarzo (2014), existent differences between the multiples of what appear to be identical firms are not exactly equal to each other mainly because the direct application of this methodology does not control for differences in growth expectations, the capability of turning revenue into profit (closely related with each management team) and specific (unsystematic) risk. Even a difference in accounting policies, which frequently cannot be valued since an outside investor does not have full access to each company's policies, can result in significant deviations of the multiples.

Ultimately, the peer group choice defines the Relative Valuation result. The choice of the peer group is often based on the target company's industry sector and size.

The author strongly defends that he would rather use a smaller group of peers with similar performance than a broader one, less comparable to the target company.

Next, we present some of the most generally accepted valuation multiples, while commenting on their key pros and cons.

2.2.6.1 Equity Multiples

A. Price to Earnings ratio (P/E)

This ratio measures the current share price, when compared to its earnings per share. Consequently, this ratio cannot be applied to companies with negative net income.

According to Damodaran (2012:468), the “Price-earnings ratio is the most widely used and misused off all multiples”. The author justifies this overuse with the simplicity of the application of the multiple:

$$P / E = \frac{\text{Market price per share}}{\text{Earnings per share}} \quad (17)$$

Its interpretation is that, for a given amount of P/E euros, the investor buys access to 1 euro of current earnings (for example, if an investors buys 1 share of a company at a P/E ratio of 25, he’s willing to pay €25 for €1 of current earnings).

Higher P/E ratios can be interpreted as an indicator of better growth expectations, or of lower systematic risk.

B. Price to Earnings to Growth ratio (PEG)

An enhancement of the P/E ratio, allows the analyst to control for a critical variable not considered in P/E ratio - growth expectations for each company (Damodaran, 2006).

$$PEG = \frac{PER}{G} = \frac{PER}{\text{Expected growth rate of earnings per share}} \quad (18)$$

This method requires an analysis of growth expectations company-by-company, reason why it is not a commonly used multiple.

C. Price to Book Value ratio (PBV)

Price to Book Value is sometimes called of price-equity ratio.

$$PBV = \frac{\text{Market price per share}}{\text{Book value per share}} \quad (19)$$

Book Value essentially represents how much the investors would receive if the company was liquidated in the moment of the shares' purchase. To use this variable, statutory Book value is adjusted for non-cash items (e.g., intangible assets, which probably wouldn't be converted to cash in a liquidation scenario).

A lower than average PBV ratio indicates that the company might be undervalued.

D. Price to Sales ratio

This ratio considers a company's sales as proxy of its value, ignoring the impact of all variables between revenues and profit (management team, gross margin, among others):

$$P / S = \frac{\text{Market price per share}}{\text{Sales per share}} \quad (20)$$

A company that presents a lower P/S ratio is more attractive to investors, since it is an indicator that the company might be undervalued.

E. Dividend Yield

This approach considers that the only source of return for a shareholder is the dividends paid:

$$\text{Dividend yield} = \frac{\text{Annual Dividend}}{\text{Share price}} \quad (21)$$

This can be interpreted as the number of the years that a share will take to pay itself through the dividends, assuming that the dividends distributed by the company will remain stable.

Increases in share price will have a negative impact on Dividend yield, and vice-versa. The higher the Dividend yield ratio is, the more attractive a company is to an investor who chooses to evaluate it through this method.

2.2.6.2 Enterprise Multiples

Unlike Equity Multiples, Enterprise multiples does not take into consideration the financing structure of each of the companies of the chosen peer group, relativizing the value available to all their claimholders.

A. Enterprise Value to Sales

$$\begin{aligned}
 EV / Sales &= \frac{Enterprise\ Value}{Sales} \\
 &= \frac{MV(Equity) + MV(Net\ debt) + Minority\ interests + \\
 &\quad + Pension\ provisions + Other\ claims}{Sales}
 \end{aligned}
 \tag{22}$$

Where:

MV = Market Value

This multiple is presented by Frykman and Tolleryd (2003) as frequently used multiple that directly compares a company's revenues with its value. According to Damodaran (2006), its main determinant is the growth rate applied in the valuation of Enterprises, as well as the existent difference in gross margin across the different peer group companies.

B. Enterprise Value to EBITDA

Koller *et al.* (2010) defend EV / EBITDA as the primary Relative Multiple when comparing companies from the same industry sector.

$$EV / EBITDA = \frac{Enterprise\ Value}{EBITDA}
 \tag{23}$$

The authors consider the fact that EV / EBITDA encompasses Enterprise Values, in contrast to Equity Values, as its main advantage. Additionally, by not considering the impact of Depreciations and Amortisations, EV / EBITDA disregards the impact of Capital expenditures. Without the impact of these two variables, EV / EBITDA focuses on the value of each company's performance.

A lower EV / EBITDA ratio might indicate that a company is undervalued.

C. Enterprise Value to EBIT

Very similar to the previous Multiple, but including the impact of Depreciations and Amortisations, EV / EBIT is also a frequently used Relative Multiple:

$$EV / EBIT = \frac{Enterprise\ Value}{EBIT}
 \tag{24}$$

Similarly to EV / EBITDA, a lower EV / EBIT ratio might indicate that a company is undervalued.

2.2.7 Asset-based Valuation

Damodaran (2006) identified two core techniques to value an asset or a company through asset-based valuation techniques.

The first one, Liquidation Value, measures how much the current market would pay for a company's assets, if they were liquidated immediately. This technique is normally applied based on reported accounting figures, computing the net between the company's assets and liabilities, adjusted for non-sellable (or at least not easily sellable) items (p.e., intangible assets).

On the other hand, Replacement Cost technique simulates how much it would cost to replace/replicate all the assets in place for a company's operation. Nonetheless, this technique's output is considered a non-reliable proxy for a company's valuation, making it rarely used by specialists in the field.

2.2.8 Contingent Claim Valuation

Contingent Claim Valuation builds its understanding of a Company's value on the notion of option pricing models, presented in 1973 by Merton and Black and Scholes (Garbade, 2001).

The foundation for this argument is that some assets (R&D efforts, patents, exploitation rights, and many others) have options characteristics – and hence should not be valued through their expected future cash flows. The real value of these assets is contingent (that is, dependent) on another asset (called the underlying asset), and their future cash flows depend on the occurrence of a specific event (Damodaran, 2012).

Damodaran (2012: 24) states that Discounted Cash Flow models often “understate the value of assets that provide payoffs that are contingent on the occurrence of an event”, like the success of a research, or a decision to invest in a determined asset.

The author defends this approach to value undeveloped or untraded assets, despite its main limitations: the difficulty to defend expectations about constant variance in long-term options, and the pricing of the underlying asset.

Considering these limitations, Contingent Claim Valuation is only used to value assets or companies in very specific industry sectors (p.e. oil extractors – as a consequence of unexplored oil reserves – and health sector – due to the impact of R&D on this sector).

3. Industry Overview

3.1 Macroeconomic outlook

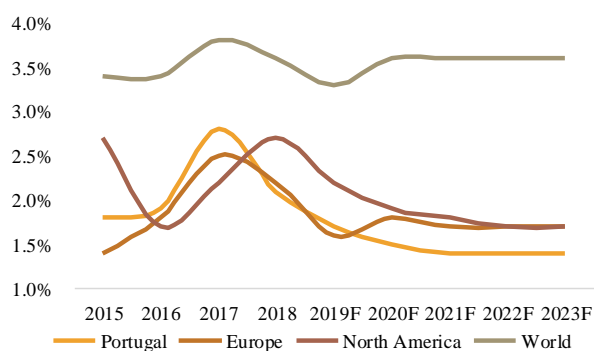
According to Navigator’s annual report, the demand for paper is historically related with macroeconomic factors such as GDP growth, employment and demographic variables (for example, age stratification or education level).

In accordance, the demand for paper derivatives decreased in highly developed countries and kept stable or increased in emerging markets.

Taking into consideration the geographic regions considered by Navigator to segregate its turnover – Portugal, Rest of Europe, North America and Other markets – GDP growth is expected to decrease in the upcoming years, with the exception of World index (used as a proxy of “Other markets”), which will present a small decrease in 2019, recovering to 2018’s values from 2020 onwards.

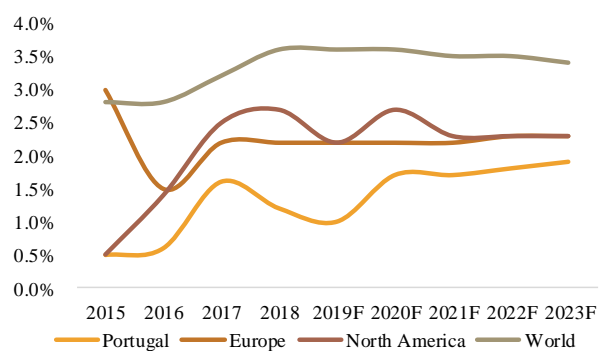
As for inflation, it has increased in all considered markets between 2015 and 2018, and it is expected to stabilise in the upcoming years, especially from 2022 onwards.

Figure 1 - GDP Growth 2015-2023F



Source: IMF's World economic outlook

Figure 2 - Inflation 2015-2023F



Source: IMF's World economic outlook

Furthermore, Navigator Company refers to the intensification of barriers to free international trade as a macroeconomic obstacle to the company’s growth, but considers that it is an obstacle that is successfully being overcome.

3.2 Business segments

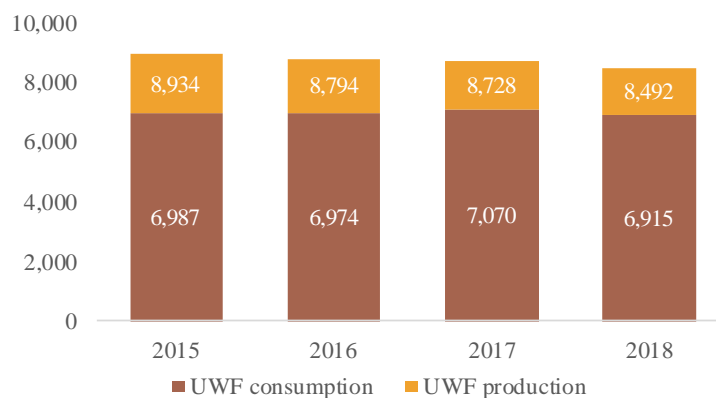
3.2.1 UWF Paper

3.2.1.1 Industry landscape

Responsible for approximately 73.8% of Navigator's revenues in 2018 (73.2% in 2017), the production and sale of uncoated woodfree (UWF) printing and writing paper is Navigator's core business since its creation.

According to CEPI – a confederation that gathers 92% of European pulp and paper industry in terms of production – European countries consistently produce more paper than they consume, exporting a significant percentage of their production.

Figure 3 - Paper consumption and production (thousand tonnes)



Source: CEPI Key Statistics - European pulp and paper industry

However, and according to PPPC, the printing and writing paper segment suffered from a decrease of 3.6% in total paper demand. Despite that, UWF paper is the least affected sector, showing a decrease of only 0.8%.

Nonetheless, the sector shows a positive evolution, driven by the increase in prices. A FOEX price index reflecting the European paper prices shows a positive evolution in the latest year. In order to reflect this price increases, paper producers – including Navigator – announced price increases for European market in January 2019 and for the USA market in March 2019.

Figure 4 - European Market Paper Price – A4 B-copy (€/ton)



Source: FOEX

2018 was marked by a divestment of an important USA competitor with the shutdown of a UWF mill, who withdrew himself from the UWF market. Since most of current UWF paper players already produce at 90%-100% operating rates, the decrease of UWF paper supply positively affects the market prices of the final product.

3.2.1.2 Navigator positioning and expectations

UWF Paper production is divided between Figueira da Foz factory (50.8% of installed capacity) and Setúbal factory (with the remaining 49.2%).

Navigator aims to produce UWF paper at its full capacity, with no significant investments in the expansion of production capacity scheduled for the upcoming years.

Nonetheless, in 2018 Navigator produced less 4% in volume when compared to 2017, due to unscheduled shutdowns. These shutdowns were driven mostly by tropical cyclones (the occurrence of Hurricane Leslie in October 2018 shutdown one of the main UWF paper factories for a week) and technical problems that caused punctual inefficiencies in the production.

According to the company's management report, these inefficiencies are solved and are not expected to significantly affect production from 2019 onwards.

Furthermore, exports accounted for 85.0% of total UWF paper in 2018 (84.4%). With a management strategy focused on increasing exports to non-European geographical areas, a positive and stable outlook is expected for this sector.

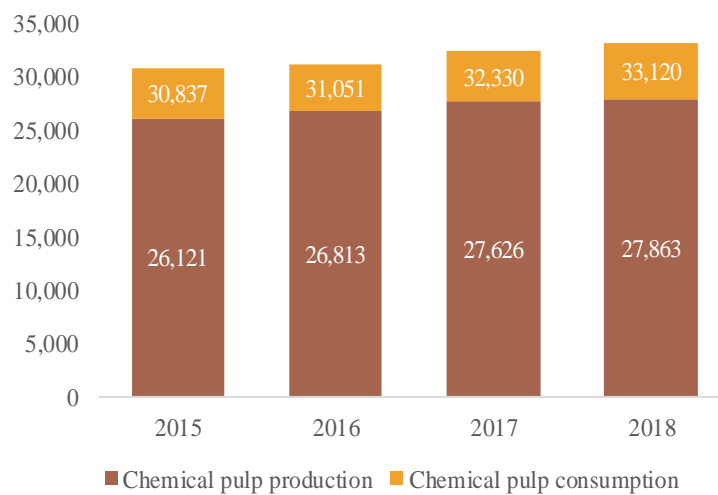
3.2.2 Pulp Market

3.2.2.1 Industry landscape

The sale of paper pulp, namely bleached eucalyptus pulp (BEKP) accounted for 9.9% of Navigator's turnover in 2018 (10.0% in 2017).

The supply and demand of chemical pulp in the European market has the opposite trend of the paper sector, that is, the European sector consumes more chemical pulp than it produces.

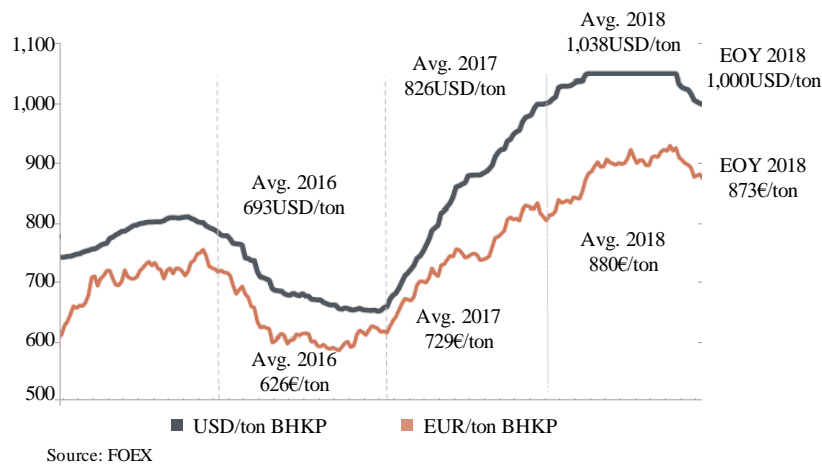
Figure 5 - Pulp consumption and production (thousand tonnes)



Source: CEPI Key Statistics - European pulp and paper industry

Being a key component in paper production, pulp prices followed the trend observed in paper indexes in the latest two years, showing a significant increase. This effect was partially offset by the devaluation of the Euro against US dollar (increase of 26% in USD in 2018, contrasting with an increase of 21% in EUR in 2017).

Figure 6 - European Market Pulp Price – PIX Europe (€/ton;USD/ton)



3.2.1.2 Navigator positioning and expectations

The pulp production is distributed between Figueira da Foz (41.9%), Setúbal (35.5%) and Aveiro (22.6%). Approximately 80% of the produced pulp is consumed by Navigator in the paper production.

Despite the positive evolution of the market, Navigator was not able to fully benefit from these market conditions, since the pulp quantity sold to the market in 2018 was down 18.5% when compared to 2017.

This was due, as mentioned in UWF Paper section, to shutdowns in the company's factories. Furthermore, the pulp line in Figueira da Foz suffered from an extended scheduled shutdown in order to allow an extensive maintenance intervention.

The overall result of the period was an increase of pulp market sales by 1%, with increasing in prices more than offsetting the decrease on volumes sold.

As in the UWF paper, exports account for a significant percentage of this segments' revenues – 84.8% in 2018 and 87.0% in 2017.

In 2019, the company expects the pulp prices to remain stable and the volume produced to recover to full capacity levels. Nonetheless, the integration of pulp produced is expected to increase due to the increase in tissue paper production capacity, negatively impacting volumes available for sale.

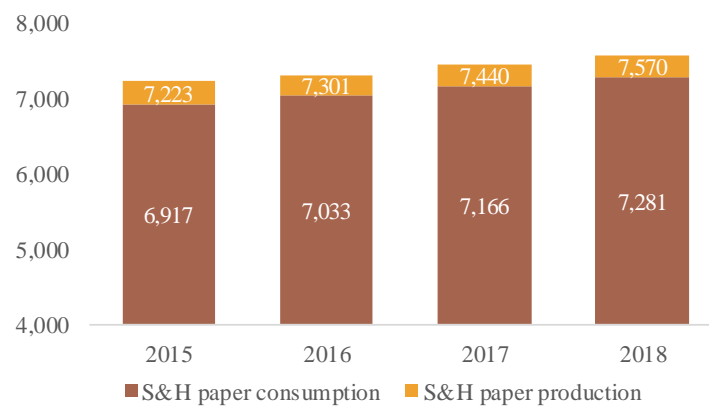
3.2.3 Tissue Paper

3.2.3.1 Industry landscape

According to Navigator's Management Report, tissue market is one of the most mature markets in Europe, with a CAGR of 1%, in line with GDP growth.

Historically, the European players of the tissue paper market produce more than the European consumption, exporting the excess production.

Figure 7 - Sanitary and Household paper consumption and production (thousand tonnes)



Source: CEPI Key Statistics - European pulp and paper industry

3.2.3.2 Navigator positioning and expectations

Tissue paper is the newest of Navigator's business segments, with the first factory being acquired in February 2015. A second tissue factory was opened in 2018 and it is expected to achieve full operating rates in 2019.

In 2018, the volume of tissue paper sales increased in 14% when compared to 2017. The company's expectations targets this sector as the one with the best growth perspectives, due to the maximization of volume produced and practiced prices, supported by a price increase in the beginning of 2019.

3.2.4 Biomass energy sector

3.2.4.1 Industry landscape

In recent years, there has been a growing corporate concern about the overall impact of companies in climate change and therefore an associated objective of decreasing greenhouse

gas emissions, as well as reducing the consumption of energy originated from fossil sources. In line with these objectives, the investment on renewable energy has grown exponentially, increasing the R&D invested in the optimization of power production methods and extending the possibility of green energy production.

According to DGEG (2019), renewable energy represents 55.3% of total energy produced in Portugal, while biomass accounts for 10.5% of that production, equivalent to 5.8% of total national production.

For pulp & paper industry, the production of biomass comes as both vertical integration - they produce the energy they consume, from scraps of the raw material they use in their core business - but also an opportunity to reduce their CO₂ emissions and consequent ecological footprint, while assuming the goal of becoming an environmental sustainable corporation.

3.2.4.2 Navigator positioning and expectations

Navigator invested in biomass power generating units to increase its vertical integration as a way to invest in its corporate responsibility program. In 2018, Navigator produced 52% of the national biomass energy, equivalent to nearly 4% of national power production.

In 2017 and 2018, the sale of energy accounted to 10.2% of Navigators' sales, accompanying the growth of pulp and paper segments. This is explained by the fact that the generated biomass used in power production is mainly a result of the scraps of wood and paper generated by the pulp and paper production lines.

The production and sale of energy from renewable energy sources is expected to stay in line with the pulp & paper production segments in the upcoming years.

4. The Navigator Company

4.1 Company History

The origin of The Navigator Company dates back to 1953, when Mr. Manuel Mendonça opened a raw pine pulp producing factory, through a company called Companhia Portuguesa de Celulose. A few years later, in 1957, the company was the world pioneer in the production of paper pulp from eucalyptus using the kraft process – resulting in UWF paper.

Due to the growth in demand, the company opened its second pulp mill in the early 1960's.

In 1975, due to a wave of nationalizations enforced by the Portuguese State following the military revolution of 1974 the cellulose sector was nationalised and a group of pulp and paper mills, as well as some packaging factories, were merged into a single company – Portucel (Law-Decree nr. 221-B, 1975).

In the early 2000's, the Portuguese State continued the consolidation process of the cellulose sector through the acquisition of Inapa Papéis (2000) and Soporcel (2001), changing the name of the company to Portucel Soporcel.

In 2004, after nearly 30 years of being State-owned, the privatisation of Portucel Soporcel started with the sale of 30% to Semapa – owner of the SECIL brand and one of the key players in the Portuguese cement sector. In 2006, CMVM forced Semapa to launch a public takeover bid to the remaining free shares of Portucel Soporcel achieving a 67.1% ownership. By the end of 2006 Portucel Soporcel was one of the members of the PSI20 Index.

Under private leadership, Portucel Soporcel continued to expand its operation, opening new factories and mills, becoming the leader in the manufacturing of uncoated woodfree printing and writing paper in 2009, and expanding its operations to Mozambique in 2015.

This expansion included a large investment in the production of energy through biomass power stations and steam energy harnessing in the years 2009 and 2010, turning Portucel Soporcel in the national leader on the production of forestry biomass energy. This was the starting point of the company's sustainable policy.

In 2016, a rebranding of Portucel Soporcel with the main objective of a continued internationalization of the company, resulted in the change of its the name to The Navigator Company.

4.2 Company Overview

Navigator has the core of its operations in its home country, Portugal. It is the country's third largest exporter, amounting to nearly 1% of Portuguese GDP, 2.4% of Portuguese exports and employing over 3,000 people in Portugal.

Internationally, it is an increasingly diversified player in the pulp & paper sector, focused on differentiating itself in technological research, innovation and sustainability.

Considering the European market, Navigator currently holds a market share of 50% in the premium paper segment and 19% in UWF paper, being the largest European manufacturer of the latter. It is also the fifth European top producer of bleached eucalyptus pulp (BEKP), integrating 80% of this intermediate product into its own paper production.

Navigator's business model is composed by five vertically integrated business areas: agro-forestry, energy, and pulp, paper and tissue production and sale.

Agro-forestry currently manages 110,425 hectares of forest area, mostly occupied by genetically improved eucalyptus. In total, an average of 12 million plants are distributed throughout the multiple Navigator "nurseries".

In order to optimize the output of these nurseries, Navigator runs a research and development unit called Forest and Paper Research Institute. Located in Aveiro, it focuses on the genetic enhancement of plant species, mainly Eucalyptus Globulus, increasing the output crops' quality and resistance to weather conditions.

4.3 Navigator' shareholders and share evolution

As at December 31st, 2018, Navigator majority owner was Semapa Group with 69.4%, while 30.6% of the company's capital was on free float.

Its shares are listed in Euronext Lisbon and it is a constituent of the main Portuguese stock market index – PSI20 – since 2006.

Figure 8 - Indexed performance of Navigator vs. PSI20 (2016-2018)



As we can see, although Navigator follows the general trend of PSI20 Index, its share price is significantly more volatile than the national stock market index.

Furthermore, Navigator paid dividends every year for the last 7 years, with 2017 and 2018 representing the years with the lowest dividend yield. Nonetheless, the dividend paid in 2018 shows a recovery signal, when compared to 2017.

Figure 9 - Dividend payments (2012-2018)

€M	2012	2013	2014	2015	2016	2017	2018
Total amount paid	201	201	441	170	250	200	200
Gross Dividend per share (€)	0.2800	0.2800	0.6143	0.2371	0.3531	0.2789	0.2794
Dividend Yield	12.3%	12.3%	14.0%	11.6%	10.7%	6.6%	7.0%

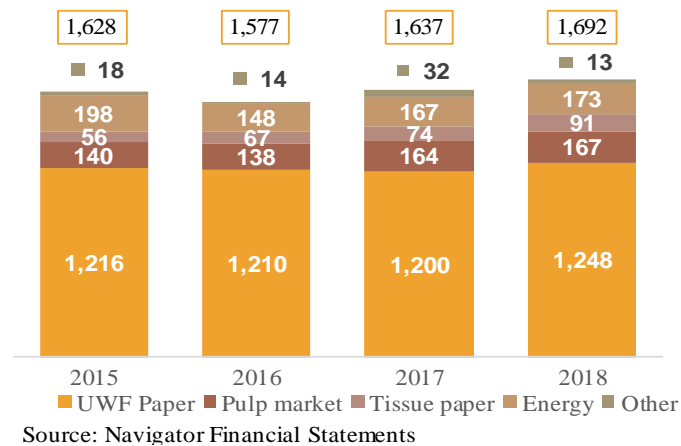
Source: The Navigator Company website

4.4 Financial Performance

4.4.1 Revenues and Margins

Total revenues present a CAGR₁₅₋₁₈ of 1.3%, driven by the growth of UWF paper sales (CAGR₁₅₋₁₈ of 0.9%), pulp sales (CAGR₁₅₋₁₈ of 6.1%) and tissue paper sales, which, despite the lower contribution, show the higher growth (CAGR₁₅₋₁₈ of 17.6%).

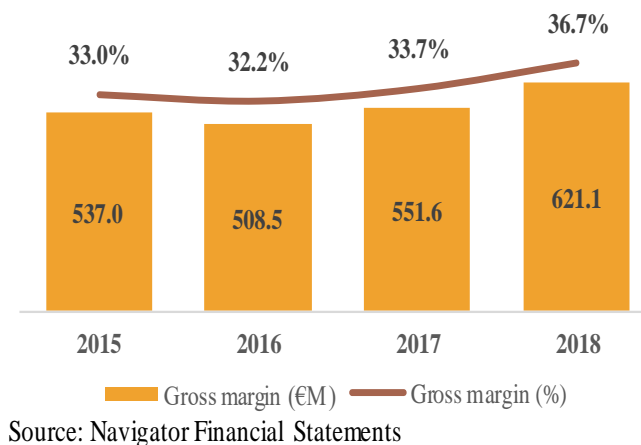
Figure 10 - Revenue decomposition per sector (€M)(2015-2018)



Since the company produces most of the raw materials it consumes through its nurseries, the company considers its Cost of Sales to be the cost of the remaining raw materials it consumes (wood, biomass, pulp, natural gas and other warehouse material) and the contracting of services related with production (which mostly comprehend transportation costs, energy consumed in the production lines, and factories maintenance).

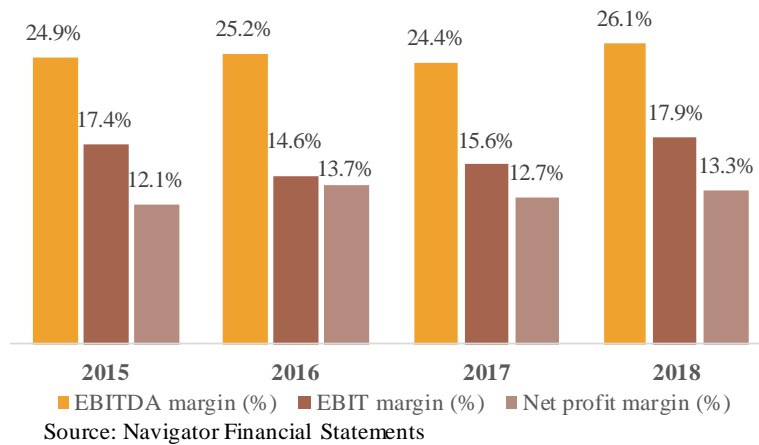
Considering the above mentioned costs as the company's Cost of Sales, Navigator's gross margin shows a positive evolution in the last four years, with a CAGR₁₅₋₁₈ of 5.0%.

Figure 11 - Revenues and Gross Margin evolution (2015-2018)



Management has a strong focus on cost optimisation and reduction programmes, which, in 2018, resulted in savings of approximately €21M. This is a key driver in the maximization of the company's Gross margin.

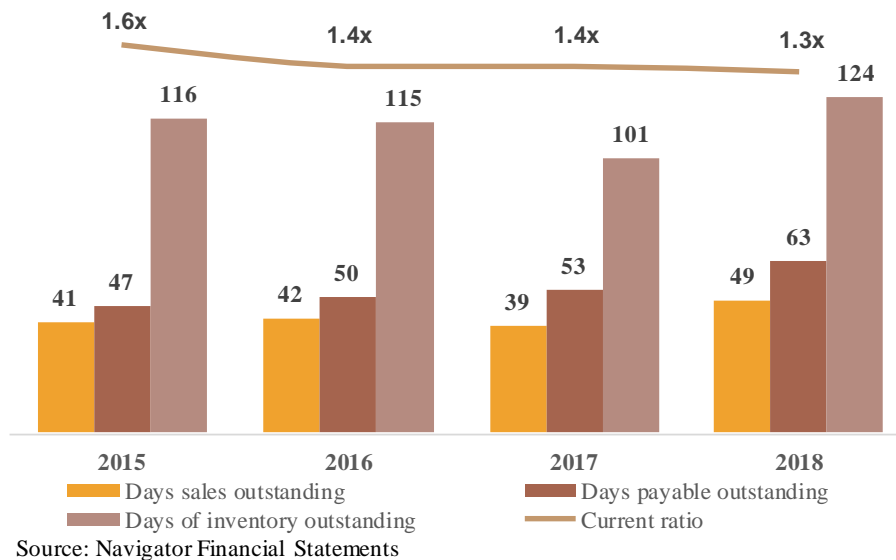
Figure 12 - Other profitability ratios (% of Turnover)(2015-2018)



Below the Gross margin, Navigator has been able to present, after a decrease in performance from 2015 to 2016, a stable recovery in 2017 and 2018, increasing both the EBITDA and EBIT margins.

4.4.2 Liquidity and Working capital ratios

Figure 13 - DSO, DPO, DIO and Current ratio evolution (2015-2018)



When it comes to the management of working capital ratios, DSO and DPO were relatively stable from 2015 to 2017, increasing in 2018. This means that the company receives later from its clients, but pays later to its suppliers as well.

As per DIO, it shows a higher volatility, justified by the fact that the company produces most of the raw materials it consumes in its activity. The company turns to the purchase of materials

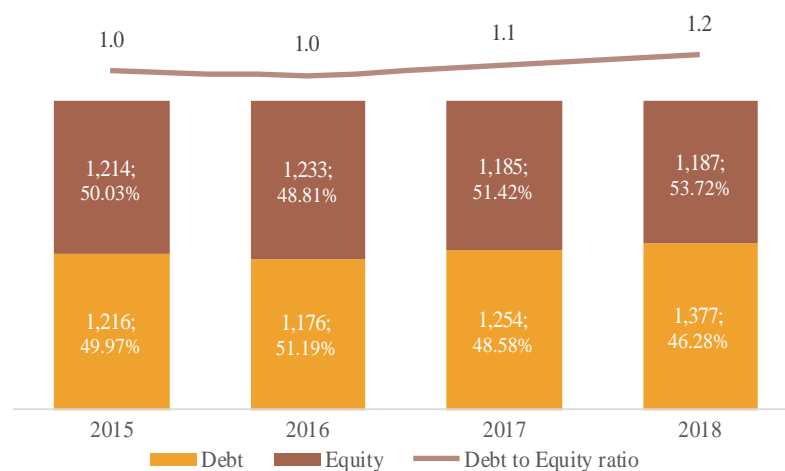
to cover raw material shortages, as well as to purchase chemicals and other raw materials necessary for production.

Looking at the Current ratio (that represents the coverage of current liabilities by current assets), it is higher than one in all the periods under analysis, which means that the company retains permanent working capital funds. Nonetheless, this ratio presents a decreasing trend, reaching 1.3x in 2018, meaning that the company is freeing funds through the reduction of the Working Capital.

4.4.3 Financing structure evolution

With a debt financing structure mainly based on the issuance of bonds and commercial paper, the leverage level of Navigator has remained relatively stable, with a Debt-to-Equity ratio rounding 1.0 to 1.2.

Figure 14 - Leverage ratios (€M; %)(2015-2018)

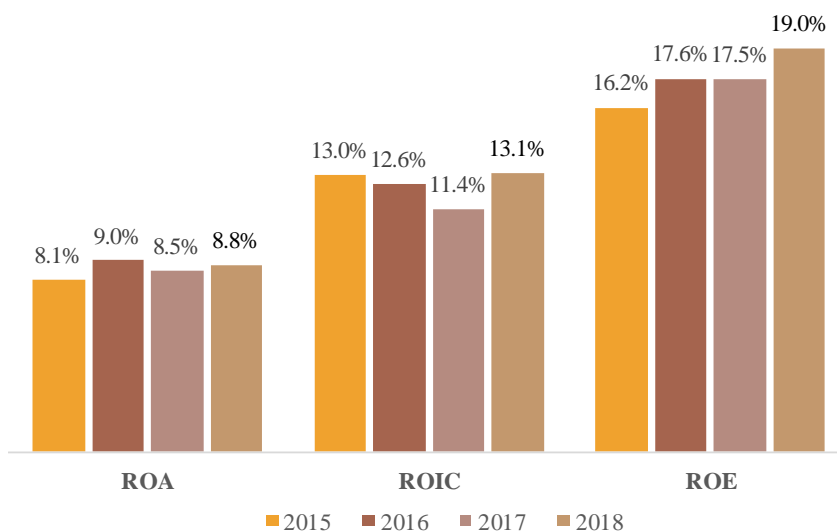


Source: Navigator Financial Statements

Despite the high level of debt, in 2016 the company restructured its debt through the negotiation of new credit lines and renegotiating the conditions of existing debt, allowing for a significant decrease in financial expenses. In 2018, Navigator presented an EBITDA/Financial results ratio of 13.5x.

4.4.4 Operating returns

Figure 15 - Return ratios (2015-2018)



Source: Navigator Financial Statements

The consecutive growth of Net income between 2015 and 2018 (CAGR₁₅₋₁₈ equal to 4.6%) and a stabilization of the book value of Equity (CAGR₁₅₋₁₈ of -0.8%) sustain the positive evolution of Return on Equity (ROE).

On the other hand, the increase in the value of assets in the same period justifies the progressive reduction of the Return on Assets between 2016 and 2018.

Overall, and analysing the Return on Invested Capital (ROIC), Navigator presents a decrease in return between 2015 and 2017, but was able to recover to 2015's values in 2018, through an increase in Gross margin of €70M (representing a growth rate of 11%).

5. Valuation

After an extensive Literature Review, an analysis of Navigator's performance in the latest years and an overview of the business segments where it operates, we conclude that Discounted Cash Flow models – Free Cash Flow to the Firm and Free Cash Flow to Equity - , as well as Relative Valuation, represent the more appropriate models to evaluate The Navigator Company.

5.1 Assumptions of Navigator's Forecasts

5.1.1 Income Statement forecasts

5.1.1.1 Turnover

As mentioned in the Financial Performance analysis of Navigator, the company reports its sales segregated in five segments: UWF market, Pulp market, Tissue paper, Energy, and Other.

UWF market and Pulp Market

Both the UWF and the Pulp factories work at an operating rate of nearly 100%, with the exception of unscheduled and unforeseeable circumstances, as is the case of the tropical cyclone that affected Navigator's factories in 2018, and some technical shutdowns for exceptional maintenance purposes.

Despite the unusually extended shutdown time observed in 2018 caused by these reasons, both sectors presented a significant growth on revenues in 2018 (4.0% in the UWF market and 1.7% in the Pulp market), made possible by the increase in the price-mix of products sold.

Furthermore, the company predicts that the time related with maintenance stops is going to be reduced in 2019 to average historical levels, and there are not significant investments planned for the near future to increase the installed capacity.

The combination of these facts leads to the expectation that the growth of the turnover generated by these segments will tend to follow inflation, meaning that market prices will stabilize, as well as the quantity produced.

Therefore, it is expected that these sectors grow at the average growth rate of the latest periods in 2019, reaching inflation growth in 2021 after an intermediate growth in 2020.

Biomass Energy

Energy production is a result of the harnessing the full potential of the production chain, using biomass to produce energy and consuming that same energy in the production lines, selling the surplus to the national gridline.

For that reason, it is expected to grow in accordance with the same assumptions as UWF and Pulp market.

Tissue Paper

Tissue Paper is the newest business segment, which Navigator started exploring in 2015. In the fourth quarter of 2018 a second tissue factory was inaugurated, increasing the installed capacity in over 80%, and it is expected to operate at a nearly 100% operating rate in 2019.

For this reason, turnover is expected to increase exponentially in the short term, stabilizing after three years of full operation of the new factory.

Although Navigator's Management expects to reach full operating rates in 2019, the estimated increase in turnover in this sector was 50%. This is a conservative approach that takes into account an adaptation period, allowing the company to convert the increased production capacity into selling capacity.

In 2020, tissue proceed are expected to achieve their full potential, increasing at inflation from that period onwards. This is supported by the fact that tissue market is one of the most mature industry markets, with small possibilities of organic growth.

Information segmentation

Nevertheless, Turnover is the only Income Statement item for which the company provides detailed information by segment.

For the remaining items, and since the multiple business segments that Navigator operates in represent, in essence, a vertically integrated Pulp & Paper business, it was considered that Navigator operates exclusively in that one segment – Pulp & Paper.

5.1.1.2 Gross Margin

Operating in the Pulp & Paper market, Navigator has a wide range of nurseries, from which it extracts most of the raw materials it consumes.

Notwithstanding, the company spends significant amounts in the transportation of raw materials from its nurseries to its factories, as well as other support services related to the optimization of nurseries outputs. For that reason, it was considered that these costs represent Navigator's Cost of sales, and that its Gross Margin is obtained by the deduction of such costs from total Turnover.

In statutory accounts, these costs are registered under Costs of Inventories Sold and Consumed, and Cost of Services and Materials Consumed.

For the Explicit Forecast Period, it was considered that Navigator maintains a Gross Margin equal to the average gross margin of the latest historic four years, in order to best reflect the operational performance of the Company. As such, Navigator's Gross margin is expected to remain stable at 33.9%.

5.1.1.3 Other operational income and costs

Apart from the Turnover and Cost of Sales considered in the Gross Margin forecast, the company incurs in other operational costs and revenues, like Payroll costs, Provisions, Changes in Fair Value of Biological Assets and Other Operating Income and Expenses.

Payroll costs

Navigator's payroll costs are divided in four different categories: Statutory bodies, Other remuneration (referring to the personnel remuneration), Contributions to social security and Other payroll cost.

The remuneration of statutory bodies amounted to 4.71% of total payroll costs. Although this cost shows a decreasing trend in the historic period, it was considered that, during the Explicit Forecast Period, this cost will increase at the Portuguese forecasted inflation (since all the statutory bodies are headquartered in Portugal).

Regarding the personnel remuneration, it was considered that its evolution is linked to revenues, representing 6.3% of annual turnover. Furthermore, Contributions to social security

and Other payroll costs are estimated to evolve proportionally to the sum of Statutory costs and Other remuneration (personnel remuneration).

Other operating income and Other expenses and losses

Other operating income and Other expenses and losses are expected to follow a stable trend and maintain their respective average historical weight on sales.

Provisions

Provisions registered in historical periods refer mostly to tax and legal claims. Due to the non-operational nature of such costs, no costs were included in the forecasted EBITDA.

Changes in the fair value of biological assets

Historically, this item has a minor impact on the company's EBITDA. Nonetheless, it was considered that Changes in the fair value of biological assets would amount to 0.1% of total turnover, equivalent to its historical average.

Gains on the sale of non-current assets

Additionally, Navigator registered Gains on the sale of non-current assets of €18M in 2018 and €2M in 2017. Due to its non-operational and non-recurrent nature, it was considered that these profits would cease to exist from 2019 onwards.

5.1.1.4 Depreciation, amortisation and impairment losses

Depreciation and amortisation are expected to maintain the historical weight on total tangible fixed assets and intangible assets.

Impairment losses on fixed assets are non-recurrent, and, consequently, the forecasted value is zero.

5.1.1.5 Financial results

As mentioned in the Financial Performance segment of this project, Navigator undertook a debt restructuring process in 2016, resulting in a significant decrease in financial expenses.

For that reason, Financial results were forecasted based on the average interest rate on interest-bearing liabilities verified between 2017 and 2018 – 1.7%.

5.1.1.6 Tax rate

The corporate income tax rate applied in the forecasted results is the average of the previous four periods, which amounted to 17.1%.

The discrepancy between this tax rate and the Portuguese Nominal Rate (22.38%, considering 21% of CIT and 1.38% of municipal surcharge) is mostly due to adjustments referring to tax benefits and previous periods losses not fiscally accepted.

5.1.2 Working capital forecasts

Navigator's working capital is composed by operational current assets (Trade receivables, Inventories, Other receivables and State and other public entities - assets), net of operational current liabilities (Trade payables, Other payables and State and other public entities - liabilities).

Trade receivables, Other receivables, Other payables and State and other public entities (assets and liabilities) were estimated based on their historical weight on sales. The coefficient that weights the volume of Trade receivables on Turnover is Days Sales Outstanding (DSO), and measures the average number of days of sales outstanding before being paid by the clients.

Trade payables forecasted was based on the historical Days Payable Outstanding (DPO), a coefficient that measures the number of days of purchases (of both raw materials and services and supplies) outstanding before being paid to the suppliers.

As per the Inventory forecast, it was assumed the historical Days of Inventory Outstanding (DIO), which measures the average time in days that Navigator takes to fully rotate its inventory. For this coefficient, it was considered the weight of Inventories in Cost of inventories sold and consumed (included in Navigator's Cost of sales).

5.1.3 CAPEX forecasts

In recent years, the investment in CAPEX refers mostly with maintenance CAPEX, with the exception of some punctual growth CAPEX (e.g. the new tissue paper factory, finished in 2018).

Since no growth investments are budgeted by the company, in any of its business sectors, Navigator's CAPEX investment in Explicit Forecast Period will exclusively refer to maintenance CAPEX.

As such, CAPEX investment will follow the historic Capex to sales ratio, presenting CAPEX investment amounts lower than 2018 figures (coherent with the fact that 2018 was affected by the CAPEX spent in the construction of the new tissue paper factory).

The evolution of Biological Assets assumed a similar pattern of tangible fixed assets (evolving as a percentage of Turnover).

5.1.4 Debt related cash flows

Through the restructuring of its debt in 2016, Navigator managed to have a simplified debt structure, currently recurring exclusively to bond loans and a loan with European Investment Bank.

Although some of the bond lines mature in 2021 and 2023, it was assumed that Navigator will rollover its debt, either recurring to new credit lines or to its existing (but not used) credit lines which, as of December 31st, 2018, presented €195M of headroom.

Thus, Navigator's debt is expected to remain stable at current levels, evolving from the amount registered in 2018 and growing at the Portuguese inflation rate.

Interest and fees were estimated based on the implicit average interest rate on Interest-bearing liabilities for the two last years, the period after the restructuring of Navigator's debt. The tax shield associated with interest expenses was considered in debt related cash flows.

5.2 Estimating the Cost of Capital

In order to calculate Enterprise and Equity Value through the Free Cash Flow to Firm methodology, the forecasted cash flows are discounted at the Weighted Average Cost of Capital, as presented in chapter 2.2. The core inputs are Capital Structure, Cost of Equity and Cost of Debt.

As per the Free Cash Flow to Equity, the forecasted cash flows are discounted at the Cost of Equity.

5.2.1 Capital Structure

The peer group for Navigator was selected in order to represent a set of publicly traded companies that operate in the same business sector as Navigator – Pulp & Paper, and in the same geographical area, in this case Europe.

The average ratio of the D/E of the chosen peer group as at December 31st, 2018 amounted to 0.44 and was used as a proxy for Navigator's target capital structure.

5.2.2 Cost of Equity

5.2.2.1 Risk-free rate

When it comes to European countries, the return rate of the 10-year German bonds is the most commonly used proxy for the risk-free rate.

That is justified by the fact that Germany has one of the strongest economies in the Euro zone, and, consequently, one of the best credit ratings (in 2018, Moody's rated German bonds with Aaa rating, and Fitch with AAA, both with stable outlook).

For this reason, an average of the returns presented by the 10-year German bonds in the last five years (0.55%) was used as a proxy for the risk-free rate applicable to Navigator.

No currency adjustment is necessary, since both German bonds and the valuation of Navigator Company are presented in Euro.

5.2.2.2 Levered beta

Companies that operate in the same industry present similar operating risk, and consequently similar Operating (Unlevered) Betas.

The risk of the peer group was calculated comparing the returns of the companies included in the peer group with MSCI World Index, over the two latest years. This index represents the returns of highly developed economies, and is frequently used as a benchmark for the returns of European companies.

Choosing a peer group comprising companies that operate in the Pulp & Paper market, the average of their Unlevered Beta was 0.87 (Bloomberg, 2019).

In order to achieve a proxy of risk that measures both operating and financial risk, the Unlevered Beta of the peer group was levered taking into consideration the target capital structure for Navigator (as mentioned, target D/E amounts to 0.44).

$$\beta_L = \beta_U + \beta_U * (1 - t) * \frac{D}{E} \quad (25)$$

$$\beta_L = 0.87 + 0.87 * (1 - 22.4\%) * 0.44 = 1.16$$

In conclusion, the Levered Beta applied in the valuation of Navigator was 1.16, which means that Navigator is riskier than the market.

5.2.2.3 Market Risk Premium

The Market Risk Premium represents the additional remuneration over the risk-free rate demanded by the investors for investing in the overall stock market.

According to Damodaran (2019), the Market Risk Premium for Portugal in the end of 2018 amounted to 5.96%, coherently with Frykman and Tolleryd (2003), who defend that the market risk premium is between 5 and 6 percent.

5.2.2.4 Country Risk Premium

Since Navigator's headquarters are located in Portugal, along with 100% of its installed capacity and 100% of its biological assets, it is considered that the changes in the Portuguese economy strongly influence Navigator's return.

The additional remuneration demanded by investors in order to offset country risk is the Market Risk Premium, and is measured comparing the risk-free rate (measured by the return of 10-year German bonds over the last five years) with the return of 10-year Portuguese Bonds.

To preserve the coherence of the data, the return of 10-year bonds Portuguese was calculated considering the returns offered over the last years, and amounted to 2.84%.

Subsequently, the Country Risk Premium is computed by subtracting that interest rate to the average return of 10-year German bonds:

$$CRP = r_{10\text{-year Portuguese bonds}} - r_f = 2.84\% - 0.55\% = 2.29\% \quad (26)$$

Computing the overall Cost of Equity, we get:

$$r_E = r_f + \beta_L * [E(r_m) - r_f] + CRP \quad (27)$$

$$r_E = 0.55\% + 1.16 * 5.96\% + 2.29\% = 9.7\%$$

5.2.3 Cost of Debt

Given that Navigator renegotiated nearly 100% of its debt in 2016, it was assumed that the cost of the loans contracted then is the rate that most accurately represents the cost of future loans.

That rate is 1.7% after the deduction of the respective tax shield, equivalent to a borrowing rate of 2.2%.

The tax rate considered for the tax shield on interest payments is 22.4%, which represents the Portuguese Corporate Income Tax rate (21%), topped with Municipal surcharge of 1.4% (the average rate considering the rates applied by the different municipalities where Navigator holds operations, in 2018).

5.2.4 Weighted Average Cost of Capital

With all the variables already estimated, we are able to compute the weighted Average Cost of Capital:

$$WACC = \frac{E}{E + D} * r_E + \frac{D}{E + D} * r_D * (1 - t) \quad (28)$$

$$WACC = 69.6\% * 9.7\% + 30.4\% * 1.7\% * (1 - 22.4\%) = 7.3\%$$

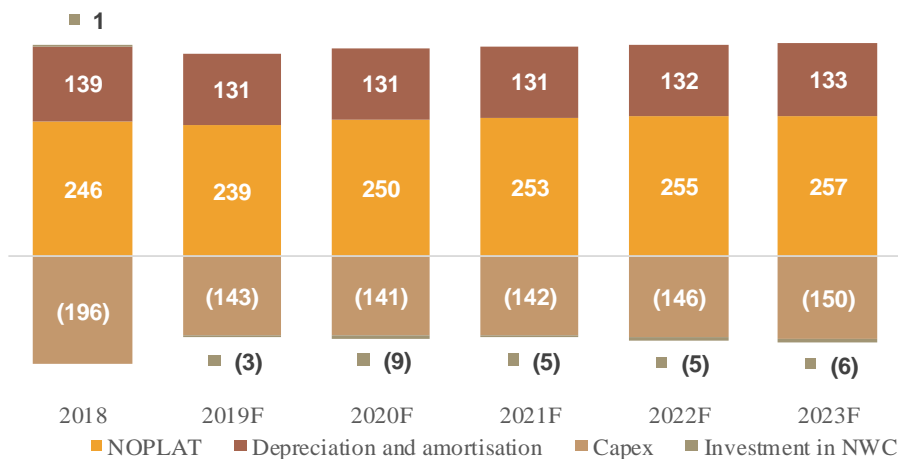
Despite the low Cost of Debt, Weighted Average Cost of Capital is positively affected by the higher percentage of Equity in the capital structure, which is, in turn, more expensive than debt.

5.3 Discounted Cash Flows Models

5.3.1 Free Cash Flow to the Firm

Cash flows generated through the forecasts as per the assumptions detailed in chapters “5.1.1 Income statement forecasts”, “5.1.2 Working capital forecasts” and “5.1.3 CAPEX forecasts” were forecasted through a five years Explicit Forecast Period:

Figure 16 - Free Cash Flow to Firm evolution (€M; 2018-2023F)



The significant decrease in Investment in CAPEX observed in 2019 is justified by the growth CAPEX registered in 2018, related with the construction of a second tissue paper factory. From 2019 onwards, the performed CAPEX refers exclusively to maintenance CAPEX.

Furthermore, 2018's NOPLAT is positively affected by non-recurrent items (e.g. gains on the sale of non-current assets). For that reason, the increase in normalised NOPLAT from 2018 to 2019 is not as visible (although present) as the increase from 2019 to 2020. This increase is explained by the full entry into operation of the new tissue paper factory. After 2021, NOPLAT stabilises.

Additionally, the perpetual growth rate of forecasted cash flows is 1.24%, equivalent to fifty percent of the forecasted consumer prices growth of the different markets where Navigator operates, with a weight factor equivalent to the weight of each market on total turnover.

Discounting the forecasted Free Cash flow to Firm at the Weighted Average Cost of Capital of 7.3%, an Enterprise Value of €3,948.8M was reached.

In order to compute the Equity Value, non-operational assets and liabilities (including debt and debt-like items) need to be deducted from this result.

The identified non-operational items are:

- Net Financial Debt: Interest-bearing liabilities (€763.8M) and Repayable subsidies registered under Other non-current liabilities (€40.3M), net of Cash and cash equivalents (€80.9M);
- Non-operational assets: €63.2M referring a receivable regarding the sale of non-current tangible fixed assets, booked under Financial assets;
- Non-operational liabilities: Provisions for fiscal and legal claims (€43.1M) and balances with Fixed assets suppliers (€6.2M).

Taking into consideration these adjustments to the Enterprise Value, an Equity value of €3,239.4M is obtained, resulting in a Price per share value of €4.51 (Navigator's equity is composed by 717.5M shares).

Comparing this amount with the market share price as of December 31st, 2018 – €3.60, and upside of 25.41% was obtained.

5.3.2 Free Cash Flow to Equity

The Equity Value through Free Cash Flow to Equity methodology is computed by adding the cash effect of debt to the cash flows ascertained by the Free Cash Flow to the Firm methodology and discounting the obtained cash flows at the Cost of Equity.

Nonetheless, non-operational and non-debt items still need to be excluded in order to obtain a reliable Equity Value. The excluded non-operational assets were the same as in Free Cash Flow to Firm methodology:

- Non-operational assets: €63.2M referring a receivable regarding the sale of non-current tangible fixed assets, booked under Financial assets;
- Non-operational liabilities: Provisions for fiscal and legal claims (€43.1M) and balances with Fixed assets suppliers (€6.2M).

Taking into consideration these adjustments, Equity value amounts to 2,818.2M, resulting in a Price per share of €3.93, equivalent to an upside of 9.11% when compared to the market share price as of December 31st, 2018.

5.3.3 Model limitations

The main limitation in the construction of this model was the limited access to information: these forecasts were constructed based on public information only, and without any access to Navigator's Management, that could have clarified some questions related to the assumptions made in the cash flows forecasts. .

5.4 Relative Valuation

The application of the Relative Valuation aims to value an asset based on the market price of similar assets.

The chosen peer group includes exclusively European companies from the Pulp & Paper sector, present in the production and commercialization of paper, and is the same peer group used in the computation of Navigator's target capital structure and as proxy for the unlevered beta of the Pulp & Paper market.

The identified outliers were excluded from the initial sample to avoid the distortion of the chosen multiples. The factors that justify the deviation of the companies considered as outliers can be justified by differences in growth expectations, management strategy or even accounting policies.

In conclusion, the chosen peer group for the application of Relative Valuation was the following:

Figure 17 - Relative Valuation

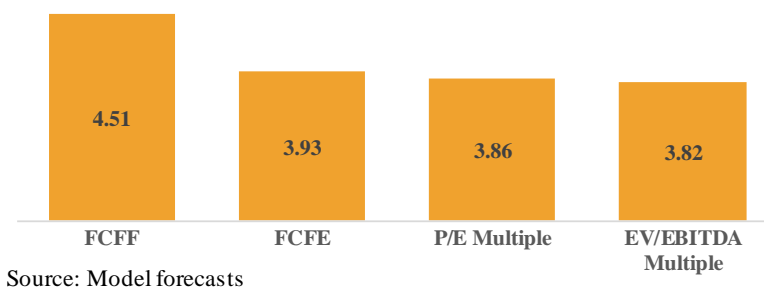
Company	Market Capitalisation	Share price 31.12.2018	P/E ratio	EV/EBITDA
Ence Energia y Celulosa SA	885.1	5.5	11.9x	7.0x
Metsa Board Oyj	1,891.5	6.1	13.0x	7.5x
Stora Enso Oyj	8,702.7	11.1	12.0x	9.1x
UPM-Kymmene Oyj	13,252.7	26.1	12.3x	7.6x
Average			12.3x	7.8x
Median			12.2x	7.6x
Enterprise Value (by average of multiple)				3,449
Equity Value (by average of multiple)			2,769	2,740
Share price			3.86	3.82
Upside/(Downside)			7.21%	6.08%

Source: Bloomberg

Although the application of two of the most commonly used valuation multiples resulted in very similar outputs (share price of €3.86 per P/E ratio and €3.82 in EV/EBITDA ratio), both values are significantly below the value obtained through the FCFF model.

5.5 Valuation Results Overview

Figure 18 - Share price estimates by methodology (€)



Despite the fact that FCFF presents an implicit share price significantly higher than the remaining methodologies, all of the computed methodologies result in a share price above the market share price as at December 31st, 2018 (€3.60).

The discrepancy between the different models can be partially justified by the fact that Navigator has a higher debt level than its peers (weight of debt in total capital structure of 53.7%, compared to average of 30.4% on the peer group), which has a lower cost than Equity.

Although Cash Flows to Firm are relatively similar to Cash flows to Equity (since the rollover of the maturing debt was assumed), the discount rate used in the FCFE model is much higher. This results in lower discounted cash flows and Terminal Value, more than offsetting the adjustment of removing the net financial debt from the Enterprise Value from the FCFE model, in order to obtain the Equity Value.

Overall, taking into consideration that Navigator' share price as of December 31st 2018 was €3.60, the presented valuation methodologies indicate that Navigator was undervalued, meaning that:

- Market growth perspectives are not the same as growth perspectives presented in the DCF models (possibly related with the recent expansion in the tissue paper segment);
or
- Navigator has a higher level of risk than the one considered in the DCF models (mainly impacting the cost of equity).

The FCFE model suggests a potential return of 25.41%, which leads to a buy recommendation on Navigator shares. All the remaining methodologies support this recommendation, although with smaller upside potentials.

The average Equity Value per share amounts to €4.03 (potential upside of 11.95%), whereas the median Equity Value per share amounts to €3.89 (potential upside of 8.16%).

Moreover, it was taken into consideration that Navigator' shares present a positive return for all scenarios where WACC does not exceed 8.5% (a 1% range from the estimated WACC rate, 7.5%).

5.6 Sensitivity Analysis

The key drivers for the projections presented are the used discount rate and the perpetual growth rate. For that reason, sensibility analysis to measure the impact of variations on these variables was performed:

Figure 19 - Sensibility analysis (Perpetual growth rate)

Perpetual growth rate	Share price by FCFF
0.8%	4.06
0.9%	4.14
1.1%	4.23
1.2%	4.33
1.4%	4.43
1.5%	4.53
1.7%	4.64

Source: Model forecasts

Figure 20 - Sensibility analysis (WACC)

WACC	Share price by FCFF
9.0%	3.29
8.5%	3.60
8.0%	3.93
7.5%	4.33
7.0%	4.79
6.5%	5.35
6.0%	6.02

Source: Model forecasts

This analysis shows that Perpetual growth rate could decrease up to 0.8% *ceteris paribus*, and the implicit share price implicit on the forecasted FCFF would still represent an upside of 12.7%.

When analysing the impact of fluctuations on the WACC rate, the FCFF models reaches its breakeven point at WACC = 8.5%.

Analysing the two variables together, the fluctuations are as follows:

Figure 21 - Sensibility analysis (Perpetual growth rate and WACC)

		Perpetuity growth rate						
		0.8%	0.9%	1.1%	1.2%	1.4%	1.5%	1.7%
WACC	4.51							
	9.0%	3.12	3.17	3.23	3.29	3.35	3.41	3.47
	8.5%	3.39	3.45	3.52	3.59	3.66	3.73	3.80
	8.0%	3.70	3.77	3.85	3.93	4.01	4.10	4.19
	7.5%	4.06	4.14	4.23	4.33	4.43	4.53	4.64
	7.0%	4.47	4.57	4.68	4.79	4.91	5.04	5.17
	6.5%	4.96	5.08	5.21	5.35	5.50	5.65	5.82
	6.0%	5.53	5.69	5.85	6.02	6.21	6.40	6.61

Source: Model forecasts

In a scenario where the Weighted Average Cost of Capital is as high as 9.0%, the return of investing in Navigator shares is negative for all the Perpetuity growth rate scenarios considered. On the other hand, if the Weighted Average Cost of Capital is 8.0% or less, the return of investing in Navigator shares is positive for all the Perpetuity growth rate scenarios considered.

6. Conclusion

The current project aimed to evaluate the fair value of The Navigator Company shares as of December 31st, 2018.

Different valuation methodologies were applied, namely Discounted Cash Flows (through Free Cash Flow to the Firm and Free Cash Flow to Equity) and Relative Valuation (through Price-earnings ratio and EV/EBITDA multiple).

The different valuation methodologies led to different results, from which the valuation obtained through the FCFE model is highlighted: a valuation of €4.51 per share was obtained, significantly higher than the remaining methodologies. However, in order to validate the conclusion suggested by this result, sensitivity analysis was performed. It suggests that, in a scenario where WACC is no higher than 8.0%, the return of investing in Navigator shares is positive for all the Perpetuity growth rate scenarios considered, building confidence on the investment recommendation produced by this methodology.

Overall, the average Equity valuation per share obtained amounted to €4.03, whereas the median Equity Value per share amounted to €3.89, which compares to a market share price as of December 31st, 2018 of €3.60.

Despite the discrepancies between the valuation results obtained through the different methodologies, all results point to a positive return, superior to 6.08%. Hence, the recommendation is to invest (buy) in Navigator shares.

Nevertheless, when deciding whether to invest in Navigator, one must take into account that, although all assumptions are supported by historical, macroeconomic or industry information and a moderately conservative approach was followed, this Equity Research was built based on public information.

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8. Appendices

8.1 Peer group: Target Capital Structure and Unlevered Beta

Company	D/E ratio	Unlevered Beta
Ence Energia y Celulosa SA	0.76	0.79
Metsa Board Oyj	0.25	1.00
Stora Enso Oyj	0.64	0.84
UPM-Kymmene Oyj	0.10	0.99
BillerudKorsnas AB	0.70	0.90
Holmen AB	0.10	0.69
Altri SGPS SA	0.67	0.82
Rottneros AB	0.28	0.90
Average	0.44	0.87
Median	0.46	0.87

Source: Bloomberg

8.2 Detail on turnover forecasts (€M)

Turnover (€M)	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
UWF market	1,216.0	1,210.3	1,199.6	1,247.7	1,258.7	1,279.4	1,310.3	1,342.9	1,376.2
<i>Growth rate</i>		(0.5%)	(0.9%)	4.0%	0.9%	1.6%	2.4%	2.5%	2.5%
Pulp market	140.0	137.6	164.3	167.0	177.8	185.7	190.2	194.9	199.7
<i>Growth rate</i>		(1.7%)	19.4%	1.7%	6.4%	4.4%	2.4%	2.5%	2.5%
Tissue paper	56.0	67.4	74.4	91.1	136.7	181.1	185.5	190.1	194.8
<i>Growth rate</i>		20.4%	10.3%	22.5%	50.0%	32.5%	2.4%	2.5%	2.5%
Energy	197.7	147.8	166.7	172.5	167.3	166.9	170.9	175.1	179.5
<i>Growth rate</i>		(25.3%)	12.8%	3.5%	(3.0%)	(0.3%)	2.4%	2.5%	2.5%
Other	18.3	14.2	31.9	13.3	15.2	16.5	16.9	17.4	17.8
<i>Growth rate</i>		(22.2%)	124.2%	(58.3%)	14.6%	8.5%	2.4%	2.5%	2.5%
Turnover	1,628	1,577	1,637	1,692	1,756	1,830	1,874	1,920	1,968
<i>Growth rate</i>		(3.1%)	3.8%	3.3%	3.8%	4.2%	2.4%	2.5%	2.5%

Source: Statutory information and Model forecasts

8.3 Historical and provisional Profit and Loss statement (€M)

Income Statement (€M)	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
Turnover	1,628.0	1,577.4	1,636.8	1,691.6	1,755.8	1,829.6	1,873.8	1,920.3	1,967.9
<i>Growth rate</i>	<i>n.a.</i>	<i>(3.1%)</i>	<i>3.8%</i>	<i>3.3%</i>	<i>3.8%</i>	<i>4.2%</i>	<i>2.4%</i>	<i>2.5%</i>	<i>2.5%</i>
Cost of sales	(1,091.0)	(1,068.9)	(1,085.2)	(1,070.5)	(1,160.4)	(1,209.2)	(1,238.4)	(1,269.1)	(1,300.6)
Gross margin	537.0	508.5	551.6	621.1	595.4	620.4	635.4	651.2	667.3
<i>Gross margin (%)</i>	<i>33.0%</i>	<i>32.2%</i>	<i>33.7%</i>	<i>36.7%</i>	<i>33.9%</i>	<i>33.9%</i>	<i>33.9%</i>	<i>33.9%</i>	<i>33.9%</i>
Payroll costs	(154.8)	(144.5)	(156.0)	(161.6)	(184.8)	(195.9)	(207.7)	(220.2)	(233.5)
<i>% Turnover</i>	<i>9.5%</i>	<i>9.2%</i>	<i>9.5%</i>	<i>9.6%</i>	<i>10.5%</i>	<i>10.7%</i>	<i>11.1%</i>	<i>11.5%</i>	<i>11.9%</i>
Provisions	14.6	(0.4)	(4.1)	(13.5)	-	-	-	-	-
Changes in the fair value of biological assets	3.0	8.6	3.8	(9.8)	1.6	1.7	1.8	1.8	1.8
Gains on the sale of non-current assets	1.3	0.7	1.7	18.4	-	-	-	-	-
Other operating income	24.9	40.9	28.3	28.5	31.9	33.1	34.5	35.3	36.2
<i>% Turnover</i>	<i>1.5%</i>	<i>2.6%</i>	<i>1.7%</i>	<i>1.7%</i>	<i>1.8%</i>	<i>1.8%</i>	<i>1.8%</i>	<i>1.8%</i>	<i>1.8%</i>
Other expenses and losses	(21.5)	(16.6)	(25.5)	(41.4)	(27.0)	(28.0)	(29.2)	(29.9)	(30.7)
<i>% Turnover</i>	<i>1.3%</i>	<i>1.1%</i>	<i>1.6%</i>	<i>2.4%</i>	<i>1.5%</i>	<i>1.5%</i>	<i>1.6%</i>	<i>1.6%</i>	<i>1.6%</i>
EBITDA	404.6	397.0	399.8	441.7	417.1	431.3	434.8	438.2	441.2
<i>EBITDA Margin (%)</i>	<i>24.9%</i>	<i>25.2%</i>	<i>24.4%</i>	<i>26.1%</i>	<i>23.8%</i>	<i>23.6%</i>	<i>23.2%</i>	<i>22.8%</i>	<i>22.4%</i>
Depreciation, amortisation and impairment losses	(121.7)	(166.7)	(144.7)	(138.5)	(130.7)	(130.7)	(131.2)	(132.1)	(133.2)
EBIT	282.9	230.4	255.0	303.2	286.4	300.6	303.5	306.1	308.0
<i>EBIT Margin (%)</i>	<i>17.4%</i>	<i>14.6%</i>	<i>15.6%</i>	<i>17.9%</i>	<i>16.3%</i>	<i>16.4%</i>	<i>16.2%</i>	<i>15.9%</i>	<i>15.7%</i>
Financial results	(50.3)	(20.8)	(7.7)	(22.5)	(12.8)	(12.9)	(13.2)	(13.4)	(13.6)
EBT	232.6	209.6	247.4	280.7	273.6	287.7	290.4	292.7	294.4
<i>% Turnover</i>	<i>14.3%</i>	<i>13.3%</i>	<i>15.1%</i>	<i>16.6%</i>	<i>15.6%</i>	<i>15.7%</i>	<i>15.5%</i>	<i>15.2%</i>	<i>15.0%</i>
Income tax	(35.8)	7.3	(39.6)	(55.5)	(46.7)	(49.1)	(49.5)	(50.0)	(50.2)
<i>Tax rate</i>	<i>15.4%</i>	<i>(3.5%)</i>	<i>16.0%</i>	<i>19.8%</i>	<i>17.1%</i>	<i>17.1%</i>	<i>17.1%</i>	<i>17.1%</i>	<i>17.1%</i>
Net profit for the year	196.8	216.8	207.8	225.1	226.9	238.6	240.8	242.8	244.1
<i>% Turnover</i>	<i>12.1%</i>	<i>13.7%</i>	<i>12.7%</i>	<i>13.3%</i>	<i>12.9%</i>	<i>13.0%</i>	<i>12.9%</i>	<i>12.6%</i>	<i>12.4%</i>
Navigator Company's Shareholders	196.4	217.5	207.8	225.1	226.8	238.5	240.7	242.7	244.1
Non-controlling interests	0.4	(0.7)	(0.0)	0.0	0.1	0.1	0.1	0.1	0.1

Source: Statutory information and Model forecasts

8.4 Historical and provisional Net Working Capital (€M)

Working capital (€M)	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
Trade receivables	182.1	181.9	175.7	226.0	205.5	214.1	219.3	224.7	230.3
<i>Days sales outstanding</i>	41	42	39	49	43	43	43	43	43
Inventories	212.6	208.9	187.8	222.4	223.8	233.2	238.9	244.8	250.9
<i>Days of inventory outstanding</i>	116	115	101	124	114	114	114	114	114
Other receivables	33.2	34.0	62.0	81.7	56.3	58.6	60.0	61.5	63.1
<i>% Turnover</i>	2.0%	2.2%	3.8%	4.8%	3.2%	3.2%	3.2%	3.2%	3.2%
State and other public entities	57.6	69.6	75.1	79.8	75.7	78.9	80.8	82.8	84.9
<i>% Turnover</i>	3.5%	4.4%	4.6%	4.7%	4.3%	4.3%	4.3%	4.3%	4.3%
Current assets	485.6	494.4	500.6	609.9	561.3	584.9	599.0	613.9	629.1
Trade payables	140.3	147.0	157.3	185.4	169.5	176.6	180.9	185.4	190.0
<i>Days payable outstanding</i>	47	50	53	63	53	53	53	53	53
Other payables	81.8	94.9	97.1	132.2	108.8	113.4	116.1	119.0	122.0
<i>% Turnover</i>	5.0%	6.0%	5.9%	7.8%	6.2%	6.2%	6.2%	6.2%	6.2%
State and other public entities	77.3	81.1	43.6	90.8	78.7	82.0	83.9	86.0	88.2
<i>% Turnover</i>	4.8%	5.1%	2.7%	5.4%	4.5%	4.5%	4.5%	4.5%	4.5%
Current liabilities	299.5	323.0	298.0	408.4	357.0	372.0	381.0	390.4	400.1
Net Working Capital	186.1	171.4	202.6	201.5	204.3	212.9	218.1	223.5	229.0
<i>% Turnover</i>	11.4%	10.9%	12.4%	11.9%	11.6%	11.6%	11.6%	11.6%	11.6%
<i>Days of sales</i>	42	40	45	43	42	42	42	42	42
Investment in NWC		(14.7)	31.2	(1.1)	2.8	8.6	5.1	5.4	5.5
<i>% Turnover</i>		(0.9%)	1.9%	(0.1%)	0.2%	0.5%	0.3%	0.3%	0.3%

Source: Statutory information and Model forecasts

8.5 Historical and provisional Balance sheet (€M)

Balance Sheet (€M)	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
Goodwill	377.3	377.3	377.3	377.3	377.3	377.3	377.3	377.3	377.3
Intangible assets	4.9	4.3	3.9	2.9	2.9	2.9	2.9	2.9	2.9
Property, plant and equipment	1,320.8	1,295.0	1,171.1	1,239.0	1,238.7	1,243.8	1,251.8	1,262.3	1,275.3
Investment properties	0.4	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Biological assets	117.0	125.6	129.4	119.6	132.2	137.8	141.1	144.6	148.2
Other financial assets	0.2	0.3	0.4	63.2	63.2	63.2	63.2	63.2	63.2
Deferred tax assets	50.9	44.2	44.7	71.0	71.0	71.0	71.0	71.0	71.0
Non-current assets held for sale	-	0.1	86.2	-	-	-	-	-	-
Non-current assets	1,871.7	1,847.2	1,813.2	1,873.1	1,885.4	1,896.1	1,907.4	1,921.4	1,938.0
Inventories	212.6	208.9	187.8	222.4	223.8	233.2	238.9	244.8	250.9
Trade receivables	182.1	181.9	175.7	226.0	205.5	214.1	219.3	224.7	230.3
State and other public entities - assets	57.6	69.6	75.1	79.8	75.7	78.9	80.8	82.8	84.9
Other receivables	33.2	34.0	62.0	81.7	56.3	58.6	60.0	61.5	63.1
Cash and cash equivalents	72.7	67.5	125.3	80.9	94.0	126.3	164.0	201.6	239.0
Current assets	558.2	561.9	625.9	690.7	655.3	711.2	763.0	815.5	868.1
Total Assets	2,429.9	2,409.1	2,439.1	2,563.9	2,540.7	2,607.3	2,670.4	2,736.9	2,806.1
Share capital	767.5	717.5	500.0	500.0	500.0	500.0	500.0	500.0	500.0
Treasury shares	(97.0)	(1.0)	(1.0)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)
Fair value reserves	(1.9)	(7.6)	(3.0)	(5.6)	(5.6)	(5.6)	(5.6)	(5.6)	(5.6)
Legal reserve	91.8	99.7	109.8	100.0	100.0	100.0	100.0	100.0	100.0
Free reserves	-	-	217.5	197.3	197.3	197.3	197.3	197.3	197.3
Currency translation reserves	5.7	(0.8)	(14.0)	(20.6)	(20.6)	(20.6)	(20.6)	(20.6)	(20.6)
Early earnings	(30.0)	-	-	-	-	-	-	-	-
Retained earnings	273.1	205.6	167.4	192.5	217.6	244.5	283.0	323.7	366.4
Net profit for the period	196.4	217.5	207.8	225.1	226.8	238.5	240.7	242.7	244.1
Non-controlling interests	8.6	2.3	0.4	0.2	0.2	0.2	0.2	0.2	0.2
Total Equity	1,214.3	1,233.3	1,184.9	1,186.6	1,213.4	1,251.9	1,292.7	1,335.4	1,379.4
Provisions	59.2	31.0	19.5	43.1	43.1	43.1	43.1	43.1	43.1
Non-current interest-bearing liabilities	686.6	638.6	667.9	652.0	715.8	727.9	740.3	753.5	767.9
Pension liabilities	-	6.5	5.1	7.3	7.3	7.3	7.3	7.3	7.3
Deferred tax liabilities	88.3	59.9	83.0	66.1	66.1	66.1	66.1	66.1	66.1
Other non-current liabilities	38.5	33.3	25.5	82.3	82.3	82.3	82.3	82.3	82.3
Non-current liabilities	872.6	769.2	801.0	850.9	914.6	926.8	939.1	952.4	966.8
Trade payables	140.3	147.0	157.3	185.4	169.5	176.6	180.9	185.4	190.0
Fixed asset suppliers	2.9	13.9	5.1	6.2	-	-	-	-	-
State and other public entities - liabilities	77.3	81.1	43.6	90.8	78.7	82.0	83.9	86.0	88.2
Current interest-bearing liabilities	40.6	69.7	150.2	111.8	55.7	56.6	57.7	58.8	59.8
Other current payables	81.8	94.9	97.1	132.2	108.8	113.4	116.1	119.0	122.0
Current liabilities	343.0	406.6	453.3	526.4	412.7	428.6	438.6	449.2	459.9
Total Liabilities	1,215.6	1,175.8	1,254.3	1,377.2	1,327.3	1,355.4	1,377.7	1,401.5	1,426.7
Total Equity and Liabilities	2,429.9	2,409.1	2,439.1	2,563.9	2,540.7	2,607.3	2,670.4	2,736.9	2,806.1

Source: Statutory information and Model forecasts

8.6 Historical and provisional Cash Flow statement (Indirect Method) (€M)

Cash flow statement (€M)	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
EBITDA	404.6	397.0	399.8	441.7	417.1	431.3	434.8	438.2	441.2
Depreciation, amortisation and impairment losses	(121.7)	(166.7)	(144.7)	(138.5)	(130.7)	(130.7)	(131.2)	(132.1)	(133.2)
EBIT	282.9	230.4	255.0	303.2	286.4	300.6	303.5	306.1	308.0
Adjusted taxes	(39.3)	5.8	(40.3)	(57.6)	(47.8)	(50.3)	(50.7)	(51.2)	(51.5)
NOPLAT	243.5	236.2	214.8	245.6	238.6	250.4	252.8	254.9	256.5
Depreciation and amortisation	121.7	166.7	144.7	138.5	130.7	130.7	131.2	132.1	133.2
Operational cash flow	365.2	402.8	359.5	384.1	369.3	381.0	384.0	387.0	389.7
Capex		(148.8)	(24.2)	(195.6)	(143.0)	(141.4)	(142.5)	(146.1)	(149.7)
Investment in NWC		14.7	(31.2)	1.1	(2.8)	(8.6)	(5.1)	(5.4)	(5.5)
Free Cash Flow to the Firm	268.7	304.0	189.6	223.4	231.0	236.4	235.5	234.4	234.4
Financial result		(20.8)	(7.7)	(22.5)	(12.8)	(12.9)	(13.2)	(13.4)	(13.6)
Tax shield		1.5	0.7	2.0	1.2	1.2	1.2	1.2	1.2
Interest-bearing liabilities		(18.9)	109.8	(54.2)	7.6	13.1	13.3	14.4	15.4
Free Cash Flow to Equity	230.5	406.8	114.9	219.4	232.4	237.8	237.7	237.5	237.5
Financial investments		(0.0)	(0.2)	(62.7)	-	-	-	-	-
Fixed assets suppliers		11.0	(8.8)	1.1	(6.2)	-	-	-	-
Other assets and liabilities		(48.7)	(83.9)	125.7	-	-	-	-	-
Treasury Cash Flow	192.7	314.0	178.9	213.2	232.4	237.8	237.7	237.5	237.5
Decreases in capital		(50.0)	(217.5)	-	-	-	-	-	-
Non-controlling interests		7.0	1.9	0.2	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Other equity changes (including Divided distribution)		(154.8)	(40.5)	(223.6)	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)
Equity Cash Flow	(197.8)	(256.2)	(223.4)	(200.1)	(200.1)	(200.1)	(200.1)	(200.1)	(200.1)
Cash (n-1)		72.7	67.5	125.3	80.9	94.0	126.3	164.0	201.6
Cash	72.7	67.5	125.3	80.9	94.0	126.3	164.0	201.6	239.0

Source: Statutory information and Model forecasts

8.7 Perpetual growth rate estimation

Perpetual growth rate	Percentage of turnover	Inflation rate 2023F
Portugal	18.7%	1.9%
Europe	50.4%	2.3%
North America	7.9%	2.3%
World	23.1%	3.4%
Weighted inflation		2.5%
Estimated perpetual growth rate (50% of inflation)		1.2%

Source: Statutory information and IMF

8.8 Forecasted discounted cash flows - Free Cash Flow to the Firm (€M)

FCFF Valuation (€M)	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F	Terminal Value
Turnover	1,628.0	1,577.4	1,636.8	1,691.6	1,755.8	1,829.6	1,873.8	1,920.3	1,967.9	1,992.3
<i>Growth rate</i>	<i>n.a.</i>	<i>(3.1%)</i>	<i>3.8%</i>	<i>3.3%</i>	<i>3.8%</i>	<i>4.2%</i>	<i>2.4%</i>	<i>2.5%</i>	<i>2.5%</i>	<i>1.2%</i>
EBITDA	404.6	397.0	399.8	441.7	417.1	431.3	434.8	438.2	441.2	446.6
<i>EBITDA Margin (%)</i>	<i>24.9%</i>	<i>25.2%</i>	<i>24.4%</i>	<i>26.1%</i>	<i>23.8%</i>	<i>23.6%</i>	<i>23.2%</i>	<i>22.8%</i>	<i>22.4%</i>	<i>22.4%</i>
Depreciation and amortisation	(121.7)	(166.7)	(144.7)	(138.5)	(130.7)	(130.7)	(131.2)	(132.1)	(133.2)	(134.8)
EBIT	282.9	230.4	255.0	303.2	286.4	300.6	303.5	306.1	308.0	311.8
Adjusted taxes					(47.8)	(50.3)	(50.7)	(51.2)	(51.5)	(49.6)
NOPLAT					238.6	250.4	252.8	254.9	256.5	262.2
Depreciation and amortisation					130.7	130.7	131.2	132.1	133.2	134.8
Operational cash flow					369.3	381.0	384.0	387.0	389.7	397.1
Capex					(143.0)	(141.4)	(142.5)	(146.1)	(149.7)	(134.8)
Investment in NWC					(2.8)	(8.6)	(5.1)	(5.4)	(5.5)	(2.8)
Free Cash Flow to the Firm					223.4	231.0	236.4	235.5	234.4	259.4
Non-discounted Terminal Value										4,276.7
<i>Discount factor</i>				<i>1.00</i>	<i>0.93</i>	<i>0.87</i>	<i>0.81</i>	<i>0.75</i>	<i>0.70</i>	<i>0.70</i>
Discounted Free Cash Flow to the Firm					208.2	200.6	191.3	177.6	164.8	3,006.2

Source: Statutory information and Model forecasts

8.9 Forecasted discounted cash flows - Free Cash Flow to Equity (€M)

FCFE Valuation (€M)	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F	Terminal Value
Turnover	1,628.0	1,577.4	1,636.8	1,691.6	1,755.8	1,829.6	1,873.8	1,920.3	1,967.9	1,992.3
<i>Growth rate</i>	<i>n.a.</i>	<i>(3.1%)</i>	<i>3.8%</i>	<i>3.3%</i>	<i>3.8%</i>	<i>4.2%</i>	<i>2.4%</i>	<i>2.5%</i>	<i>2.5%</i>	<i>1.2%</i>
EBITDA	404.6	397.0	399.8	441.7	417.1	431.3	434.8	438.2	441.2	446.6
<i>EBITDA Margin (%)</i>	<i>24.9%</i>	<i>25.2%</i>	<i>24.4%</i>	<i>26.1%</i>	<i>23.8%</i>	<i>23.6%</i>	<i>23.2%</i>	<i>22.8%</i>	<i>22.4%</i>	<i>22.4%</i>
Depreciation and amortisation	(121.7)	(166.7)	(144.7)	(138.5)	(130.7)	(130.7)	(131.2)	(132.1)	(133.2)	(134.8)
EBIT	282.9	230.4	255.0	303.2	286.4	300.6	303.5	306.1	308.0	311.8
Adjusted taxes					(47.8)	(50.3)	(50.7)	(51.2)	(51.5)	(49.6)
NOPLAT					238.6	250.4	252.8	254.9	256.5	262.2
Depreciation and amortisation					130.7	130.7	131.2	132.1	133.2	134.8
Operational cash flow					369.3	381.0	384.0	387.0	389.7	397.1
Capex					(143.0)	(141.4)	(142.5)	(146.1)	(149.7)	(134.8)
Investment in NWC					(2.8)	(8.6)	(5.1)	(5.4)	(5.5)	(2.8)
Free Cash Flow to the Firm					223.4	231.0	236.4	235.5	234.4	259.4
Financial result					(12.8)	(12.9)	(13.2)	(13.4)	(13.6)	(14.0)
Tax shield					1.2	1.2	1.2	1.2	1.2	(1.3)
Interest-bearing liabilities					7.6	13.1	13.3	14.4	15.4	15.7
Free Cash Flow to Equity					219.4	232.4	237.8	237.7	237.5	259.9
Non-discounted Terminal Value										3,054.7
<i>Discount factor</i>				<i>1.00</i>	<i>0.91</i>	<i>0.83</i>	<i>0.76</i>	<i>0.69</i>	<i>0.63</i>	<i>0.63</i>
Discounted Free Cash Flow to Equity					199.9	192.9	179.9	163.8	149.2	1,918.6

Source: Statutory information and Model forecasts