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Equity Valuation: The Navigator Company, S.A.

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Master in Finance

Supervisor:
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Finance
ISCTE Business School

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BUSINESS
SCHOOL

Department of Finance

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Resumo

Este relatório foi desenvolvido com o objetivo principal de estimar o justo valor das ações da The Navigator Company a 31 de dezembro de 2019 e determinar se a empresa se encontrava sub ou sobrevalorizada pelo mercado, através da comparação com o preço de fecho real da ação nessa data.

A Navigator é uma empresa portuguesa com mais de 70 anos de atividade e uma referência internacional na indústria da pasta e papel pelos seus produtos de excelência.

A avaliação foi realizada utilizando duas metodologias de entre a vasta seleção disponível: a abordagem de Fluxos de Caixa Descontados e a Avaliação dos Múltiplos. Os pressupostos efetuados são fundamentados por análises ao desempenho histórico da empresa, bem como ao contexto macroeconómico e da indústria.

Os resultados obtidos em ambas as metodologias sugerem que, em 31 de dezembro de 2019, as ações da Navigator estavam cotadas acima do seu justo valor.

Palavras-chave: Navigator; Avaliação de Empresas; Fluxos de caixa; Múltiplos

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

Abstract

This report was developed with the main objective of estimating the fair value for The Navigator Company's shares of as of 31 December 2019 and determine if the company was being under or overvalued by the market, through a comparison with the actual share close price at that time.

Navigator is a Portuguese company with over 70 years of activity and an international benchmark in the Pulp & Paper industry for its products of excellence.

The valuation was carried using two methodologies from the vast available selection: the Discounted Cash Flows approach and the Relative Valuation. The assumptions made are supported by analysis to the company's historical performance and to the macroeconomic and market environment.

The results obtained across both methodologies suggest that, as of 31 December 2019, Navigator's shares were priced above its fair value.

Keywords: Navigator; Company Valuation; Discounted Cash Flows; Multiples

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

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List of Abbreviations

- AMS** – AMS-BR Star Paper, S.A.
- BEKP** – Bleached Eucalyptus Kraft Pulp
- BHKP** – Bleached Hardwood Kraft Pulp
- CAGR** – Compounded Annual Growth Rate
- CEPI** – Confederation of European Paper Industries
- CFF** – Cash Flow from Financing Activities
- CFI** – Cash Flow from Investing
- DIO** – Days of Inventory Outstanding
- DPO** – Days Payable Outstanding
- DSO** – Days Sales Outstanding
- EV/EBITDA** – Enterprise Value to EBITDA
- EV/EG** – Enterprise Value to EBITDA growth
- EV/FCF** – Enterprise Value to Free Cash Flow
- EV/Sales** – Enterprise Value to Sales
- GDP** – Gross Domestic Product
- Inapa** – Papéis Inapa, S.A.
- M** – million
- Navigator** – The Navigator Company, S.A.
- NOCF** – Net Operating Cash Flow
- P&W** – Printing and writing
- P/BV** – Price to Book Value
- P/CE** – Price to Cash Earnings
- P/E** – Price to Earnings Ratio
- P/S** – Price to Sales
- Parpública** – Párpublica, SGPS, S.A.
- PEG** – Price Earnings Growth
- Portucel** – Portucel - Empresa de Celulose e Papel de Portugal, E.P.
- ROA** – Return on Assets
- ROE** – Return on Equity
- ROIC** – Return on Invested Capital
- Semapa** – Semapa - Sociedade de Investimento e Gestão, SGPS, S.A.
- Soporcel** – Soporcel - Sociedade Portuguesa de Papel, S.A.

tAD – through Air Drying

TWh – Terawatt/hour

U.K. – United Kingdom

U.S. – United States of America

UWF – Uncoated Wood-Free

YoY – Year-on-Year

Introduction

As a valuable tool for managers and investors, useful in the fields of corporate finance, mergers & acquisitions or portfolio management, valuation assumes a crucial role in Finance. Equity valuation, in specific, allows to estimate the fair value of a company through the assessment of its historical performance, underlying risks, sources of value creation and the market and macroeconomic outlook.

The report that follows aims to present a reliable equity valuation exercise applied to The Navigator Company. The main goal is to estimate a target value for the company's share as of 31 December 2019 and compare it with the actual share close price.

Navigator is a vertically integrated, listed Portuguese company that operates in the Pulp & Paper industry. It is the European leading company and one of the largest worldwide in the production of uncoated wood-free paper (UWF) and bleached eucalyptus kraft pulp (BEKP), while also being the leading producer of biomass energy in Portugal. Today an international benchmark in the industry for the quality inherent to its products, Navigator is the country's third largest exporter, accounting for about 3% of the total Portuguese exports, and is an important contributor for its GDP, with approximately 1%. In 2019, Navigator's net profit amounted to €168.3M, with €1,687.9M in revenues, employing 3,280 persons.

Following the introduction, this report starts with a literature review section, in which is provided an insight of the most common valuation methodologies. Then, the second section presents an analysis to the macroeconomic and industry framework, where the pulp, paper and tissue markets are approached in detail. Afterwards, the third section offers a company overview, including the company's history, shareholder's structure, its business areas and a financial analysis. Finally, we have the main section, which is focused on the actual valuation of Navigator, derived from the DCF-FCFF and relative valuation methods. This section includes the main assumptions and forecasts, a sensitivity analysis and a summary of the results obtained.

1- Literature Review

1.1- Introduction to valuation

Luehrman (1997a:132) states that “valuation is the financial analytical skill that general managers want to learn and master more than any other”. It is in the heart of finance and it can play key roles in distinct areas, assuming itself as a valuable tool for investors whether it be in corporate finance – on how to make the best possible resource allocation –, mergers & acquisitions – for example, the case where a bidding firm and a target firm conduct company valuations to agree on a price – or portfolio management – to decide on what position (buy, sell or hold) to take in a company’s stake (Damodaran, 2002).

Damodaran (2002) claims that what is crucial in investing or managing an asset, more than understanding what its value is, is to comprehend the sources which lead to that value and how to capture them in the wide range of valuation methods. In company valuation, regardless of the firm, similar logic should be applied.

The numerous valuation models used in practice vary from the simplest to the more complex. The assumptions they make often differ, but some possess common characteristics and can be classified in broader terms (Damodaran, 2002).

There are several different categorizations and a significant amount of literature on the valuation process. Damodaran (2006) presents four general approaches to valuation: the discounted cash flows method, the relative valuation method, the contingent claim valuation and the asset-based valuation.

1.2- Discounted Cash Flow Method (DCF)

The DCF method “seek to determine the company’s value by estimating the cash flows it will generate in the future and then discounting them at a discount rate matched to the cash flows’ risk” (Fernández, 2001a:8). This is a generally used method among analysts since it is the only conceptually correct valuation method (Fernández, 2001a). All the other valuation approaches have its building foundation on this method and understanding its fundamentals is vital to be able to analyse and use them appropriately (Damodaran, 2002).

Despite being the most popular method, DCF analysis is associated with the problem of accuracy as it relies largely on the correctness of the forecasted future cash flows and the multiple assumptions made.

Within the DCF approach, there are several models. According to Damodaran (2006), one can perform a valuation from two perspectives: by valuing the entire business (firm/enterprise valuation) or valuing just the equity stake in the business (equity valuation). The cash flow to discount and the discounting rate is different according to the perspective.

1.2.1- Free Cash Flow to the Firm (FCFF)

When valuing the entire business, the most common approach is to use the Free Cash Flow to the Firm (FCFF) discounted at the Weighted-Average Cost of Capital (WACC).

The FCFF expresses the amount of cash flows generated by operations net of taxes, expenses, fixed asset investments and working capital requirements. These cash flows represent the amount available to distribute among all investors, “including stockholders, bondholders and preferred stockholders” (Damodaran, 2002:15:0).

The general formula can be presented as follows:

$$\text{FCFF} = \text{EBIT}(1 - t) + \text{D\&A} - \text{CAPEX} \pm \Delta\text{WC} \quad (1)$$

where:

- EBIT = Earnings Before Interest and Taxes;
- t = corporate tax rate;
- D&A = depreciations and amortizations;
- CAPEX = Capital Expenditures, net of disposals;
- ΔWC = Changes in Working Capital.

In accordance, the discounting rate must represent the risks faced by all investors when making the funds available to the company, blending the required rates of return both by equity holders (r_E) and debt holders (r_D) (Koller, Goedhart, & Wessels, 2010). The rate that reflects these prerequisites is called Weighted-Average Cost of Capital (WACC) and can be computed using the formula below:

$$\text{WACC} = \frac{E}{D + E} * r_E + \frac{D}{D + E} * r_D * (1 - t) \quad (2)$$

where:

- r_E = required rate of return to equity;
- r_D = cost of debt;
- D = market value of debt (interest-bearing);
- E = market value of equity;
- t = corporate marginal tax rate.

Applying the WACC may appear simple and straightforward, but many literature points some drawbacks.

Peterson & Peterson (1996) specify problems such as the difficulty of forecasting the costs of issuing debt and equity in the future, the struggle when estimating the variables involved in the computation of the cost of equity and the complications computing the market value of debt subject to variable interest rates, for swaps, debt in foreign currency, leases, equity-linked debt and callable debt.

But the general problem appointed is that this method is only suited for companies with a static and stable capital structure at a target debt-to-equity ratio. If the company under valuation changes their view on how their operations will be financed, the expected tax shields will be under or overstated, and the result yielded will not be as accurate. The WACC can accommodate a changing capital structure, but it is a complicated process and alternative methods such as the Adjusted Present Value (APV) look to be more viable (Koller *et al.*, 2010:114).

Luehrman (1997a) claims that today WACC-based models are obsolete. The method still works, but the technological improvements “along with new theoretical insights, make other methods even better”.

1.2.1.1- Equity required rate of return

One of the key inputs to the WACC and subject of extensive debate, estimating the equity required rate of return entails three components: the risk-free rate, the market risk premium and a factor for company-specific risk. Three notable risk-return models that can be used in its computation: the Capital Asset Pricing Model (CAPM) – which is the standard model and used the longest –, the Arbitrage Pricing Theory (APT) by Stephen Ross (1976) and the Fama-French three-factor model (1992).

CAPM is a single-factor model that uses the principles of the Modern Portfolio Theory. Its formula is can be presented as follows:

$$r_E = r_f + \beta_L * [E(r_M) - r_f] \quad (3)$$

where:

- r_E = required rate of return to equity;
- r_f = risk-free rate
- β_L = beta levered
- $E(r_M)$ = expected market return
- $E(r_M) - r_f$ = market risk premium

1.2.1.1.1- Risk-free rate

Koller *et al.* (2010:240) define the risk-free rate (r_f) as “the return on a portfolio/security that has no covariance with the market, that is, a CAPM beta of zero”. Hence, a risk-free investment is “one where we know the expected return with certainty” (Damodaran, 2008a:6), which is verified when two conditions are met: there can be no default risk associated with the cash flows and no reinvestment risk. This means that to derive the correct risk-free rate, only rates of securities issued by entities with no default risk can be considered and the maturity of the risk-free security used should match the investment horizon or the maturity of all cash flows being discounted.

Gilbert (1990) outline three commonly recognized measures of the risk-free rate: long-term government bonds, intermediate-term Treasury notes and short-term Treasury bills.

For the valuation of United States-based companies, the most used proxy is the 10-year zero-coupon U.S. government bond, while for European-based companies, the preferred security to proxy the risk-free rate is the 10-year German Eurobond (Koller *et al.*, 2010).

1.2.1.1.2- Beta

Beta (β) is a measure of a stock’s systematic risk (volatility) in relation to the market. So, the more sensitive a company is to changes in market conditions, the higher is the beta; and the inverse. Its selection, according to Gilbert (1990), is critical for the calculation of an accurate discount rate, but the process is still yet not guided and standardized.

Damodaran (2002) proposes three approaches to estimate the beta: regress stock returns against market index returns; estimate from the fundamental characteristics of the investment/stock; and use accounting data.

The regression approach is conventional in the field of finance, though Damodaran (1999) points out some limitations and measurement issues one can encounter in this process. Besides the issues choosing a market index, a time period and a return interval – which affect largely the beta outcome –, the author evidences that some market indexes are dominated by a stock or few stocks, particularly in emerging countries. Also, the beta estimates hold high standard errors and are based on historical data which may not reflect the current company's characteristics.

Upon the referred problems, Damodaran (1999) suggests modifying the regressed beta, use other relative risk measures or adopt the bottom-up beta approach to reflect financial fundamentals, of which the latter is considered the most promising. In this alternative approach, the beta is estimated as the “weighted average of the unlevered betas of the different businesses that the company operates in, adjusted to reflect both the current operating and financial leverage of the firm”, without running any regression (Damodaran, 1999:31).

1.2.1.1.3- Market risk premium

Peterson & Peterson (1996:81) describe the market risk premium as “the risk premium required by investors for bearing the risk of owning the market portfolio” and it reflects the difference between the expected market return, $E(r_M)$, and the risk-free rate (r_f).

The market risk premium is one of the most discussed issues in the finance field. In fact, there is no general consensus regarding its estimation in practice, with a number of possible approaches, each yielding different values.

For Damodaran (2008b), they can be divided into three categories. The first, and more standard approach, is to measure and extrapolate using historical returns. The returns earned on stocks are assessed over a long period of time and compared with the returns of some risk-free security, being the difference the market risk premium. The second approach, which rivals the most with the previous one, comprises the use of implied premiums based on future cash flows or observed bond default spreads. Finally, since the market risk premium corresponds to the excess return investors demand for investing in risky assets, the third and last approach, is to use surveys on a subset of managers and investors regarding what expected returns they require for the future.

As to estimating the risk premium using historical premium returns, Damodaran (2002) defends that for markets outside the U.S. this approach should suffer a modification. Since the historical data can be insufficient/volatile and the political and economic risks are usually higher, an additional risk premium that reflects the overall country risk should be added to the base premium of a mature equity market – the result being the looked-for market risk premium. Among the possible alternatives that can be used to proxy the country risk premium, the default spread on the country's bond is generally the preferred one.

Given the disagreement in the estimation of this CAPM component, Stewart (1991) prescribes using a risk premium of 6%, while Koller *et al.* (2010) believe that 4.5% to 5.5% is an appropriate range.

1.2.1.2- Cost of Debt

Another key input for the WACC estimation is the cost of debt (r_D), that, as its designation states, measures the cost for a company of borrowing funds to finance its operations.

According to Koller *et al.* (2010:261), “to estimate the cost of debt for investment-grade companies, one should use the yield to maturity of the company's long-term, option-free bonds”.

For companies with below investment-grade debt, the authors recommend using the APV instead of the WACC to value the company. The reason is that the yield to maturity is, in fact, a promised rate of return rather than an expected rate of return, and it does not reflect the company's probability of default.

Likewise, Damodaran (2002) postulates the yield to maturity of a long-term bond can be used as a proxy, but only when they are liquid. For companies that have not so liquid outstanding bonds, the author proposes estimating the cost of debt by adding the risk-free rate to the default spread of the company:

$$r_D = r_f + \text{Default Spread} \quad (4)$$

Of these, in the case of debt-rated companies, the cost of debt can be estimated using the default spread associated with their rating. In the case of non-rated companies, the default spreads can be estimated using the recent borrowing history or using projected synthetic ratings.

Furthermore, if it is an emerging market company, Damodaran (2002:8:44) advises adding the country default spread to the equation, since it is often assumed that “companies in a country cannot borrow at a rate lower than the country can borrow at”.

1.2.2- Free Cash Flow to Equity (FCFE)

When valuing the equity stake in a company, the standard approach is to use the Free Cash Flow to Equity (FCFE) discounted at the equity required rate of return (r_E).

The FCFE expresses the amount available to distribute among common shareholders, that is, how much a company can afford to pay out in dividends, after expenses, interests, debt payments, fixed asset investments and working capital requirements.

The general formula is as follows:

$$FCFE = NI + D\&A - CAPEX - \Delta WC + \text{New Debt Issued} - \text{Debt Repayments} \quad (5)$$

where:

- NI = Net Income;
- D&A = depreciations and amortizations;
- CAPEX = Capital Expenditures, net of disposals;
- ΔWC = Changes in Working Capital.

This method embeds the company capital structure in the cash flows, so forecasting is a difficult task. Its use is appropriated when valuing companies whose operational, financial and investing cash flows are hard to distinguish, such as financial institutions (Koller *et al.*, 2010).

1.2.3- Enterprise and Equity Value

While the DCF-FCFE method allows to estimate directly the equity value of a company, the DCF-FCFF method requires an additional step.

In the FCFF valuation approach, the present value of the free cash flows discounted at the weighted average cost of capital corresponds to the Enterprise Value:

$$\text{Enterprise Value} = \sum_{t=1}^n \frac{FCFF_t}{(1 + WACC)^t} + \frac{TV_n}{(1 + WACC)^n} \quad (6)$$

where:

- $FCFF_t$ = free cash flow to the firm in the time period, period = 1 to n ;

- WACC = weighted average cost of capital;
- TV_n = terminal value at the end of the time period.

DCF valuations focus only on the value of the assets that generate or are required to generate operating cash flows to the company (Pinto, Henry, Robinson & Stowe, 2010). Thus, other non-operating components that can still add value to the company need to be considered to arrive at its final common equity value (Koller *et al.*, 2010):

$$\text{Equity Value} = \text{Enterprise Value} + \text{Non-operating Assets} - \text{Non-equity Claims} \quad (7)$$

The non-operating assets should be estimated separately and at market prices. It includes, most generally, excess cash, marketable securities, non-controlling equity stakes and subsidiaries; and also, tax loss carry-forwards, loans to other companies, excess real estate and unutilized assets, and discontinued operations. All tax effects from capital gains/losses of non-operating assets for sale should be estimated correspondingly.

Non-equity claims refer to components such as financial debt, operating leases, provisions, contingent liabilities, preferred stock, employee options, unfunded retirement liabilities and minority interests.

In the FCFE approach:

$$\text{Equity Value} = \sum_{t=1}^n \frac{\text{FCFE}_t}{(1 + r_E)^t} + \frac{\text{TV}_n}{(1 + r_E)^n} \quad (8)$$

where:

- FCFE_t = free cash flow to equity in the time period, period = 1 to n ;
- r_E = equity required rate of return;
- TV_n = terminal value at the end of the time period.

To obtain the total common equity value, the value of non-operating assets and non-equity claims should be considered, similarly to the FCFE approach.

The final stage of the valuation process is to estimate the equity value per share, which can be conditioned by the presence of employee options and convertible debt and stock options. In this circumstance, Damodaran (2002) suggests valuing the options using an option pricing model

and then subtract the value to the value of equity. To arrive at the value per share, the result obtained should be divided by the number of primary shares outstanding.

The two DCF valuation approaches, as stated by Pinto *et al.* (2010), should theoretically yield the same results if the assumptions made in both models are coherent. Despite this, the same authors refer the FCFF should be preferred over the FCFE when valuing levered companies with negative FCFE and companies with changing capital structures.

1.2.3.1- Terminal Value

As described previously, a company's value can be separated in two components: first, the present value of future cash flows during an explicit forecast period – that usually ranges from 5 to 7 years (Gilbert, 1990) – and, second, the present value of future cash flows beyond the explicit forecast period – denominated terminal value (Lee, 2003). This last component is, according to the literature, the most crucial part of the DCF valuation, accounting normally for over half of the estimated company value.

Using the referred valuation method, it is generally assumed a perpetual life span for the company's operations. Hence, after a certain point in time, the company's cash flows are expected to grow perpetually at a constant stable growth rate and the terminal value, that reflects their value at the time, is computed accordingly (Damodaran, 2002):

$$TV_n = \frac{CF_{n+1}}{(r - g)} \quad (9)$$

where:

- TV_n = terminal value at the end of the explicit forecast period;
- CF_{n+1} = cash flow at the end of the first year of the perpetuity;
- r = discount rate;
- g = growth rate.

In the opinion of Damodaran (2002), the estimated growth rate should be less or equal than the economy growth rate in which the company operates. Koller *et al.* (2010:216) agree and state “the best estimate is probably the expected long-term rate of consumption growth for the industry's products, plus inflation”.

Regarding the estimation of the cash flow at the end of the first year of the perpetuity (CF_{n+1}), one must account for the particularities between the firm and the equity approach. So, when using the FCFF method (Damodaran, 2002):

$$CF_{n+1} = NOPLAT_{n+1} * (1 - \text{Reinvestment rate}) \quad (10)$$

where:

- $NOPLAT_{n+1}$ = net operating profit less adjusted taxes in the first year after the explicit forecast period;
- Reinvestment rate = g / return on capital.

Using the FCFE method, the general formula can be as follows (Damodaran, 2002):

$$CF_{n+1} = NI_{n+1} * (1 - \text{Reinvestment rate}) \quad (11)$$

where:

- NI_{n+1} = net income in the first year after the explicit forecast period;
- Reinvestment rate = g / return on equity.

1.2.4- Adjusted Present Value (APV)

In cases where it is not foreseeable that a company will manage its financial policies towards a specific and stable capital structure, the APV model, first presented by Myers (1974), appears as a viable alternative.

Luehrman (1997b), in a more extreme point of view, states the WACC method is obsolete and that the APV will replace it as the favourite DCF valuation methodology among analysts. It requires fewer assumptions, it is less complex, flexible and provides more added value information by unbundling all components of value and analysing each one separately.

This approach starts by valuing the company operations without debt, discounting the free cash flows to the firm at the unlevered cost of equity. Then, the side effects of the company's financing decisions are considered, both benefits – primarily, interest tax shields – and costs – such as bankruptcy and issue costs (Damodaran, 2002):

$$\begin{aligned} \text{APV} = & \text{Unlevered Enterprise Value} + \text{PV of Borrowing Benefits} \\ & - \text{PV of Borrowing Costs} \end{aligned} \quad (12)$$

The unlevered cost of equity can be estimated using the CAPM model (Parrino, 2005):

$$r_U = r_f + \beta_U * [E(r_M) - r_f] \quad (13)$$

where:

- r_U = unlevered cost of equity;
- r_f = risk-free rate;
- β_U = beta unlevered;
- $[E(r_M) - r_f]$ = market risk premium.

The main borrowing benefit, as previously stated, concern to the tax shields that arise from outstanding debt interest payments. Its value is a function of the marginal corporate tax rate and it is discounted at the cost of debt (Damodaran, 2002). A general formula can be:

$$\text{PV of Tax Shields} = \sum_{t=1}^n \frac{t_c * D * r_D}{(1 + r_D)^t} \quad (14)$$

where:

- t_c = marginal corporate tax rate;
- D = debt;
- r_D = cost of debt.

Regarding the borrowing costs, the most significant are the expected bankruptcy costs. In fact, when a company levers up, the costs of financing increase and the probability of incurring in financial distress grows. Thus, direct and indirect bankruptcy costs arise as the likelihood of a company defaulting on its financial obligations is greater. Generally, it includes legal and administrative fees, losses from the sale of distressed assets, losses of human capital, loss of market share and losses of customer and supplier trust. According to Damodaran (2002):

$$\text{PV of Expected Bankruptcy Costs} = \pi_a * \text{PV of Bankruptcy Costs} \quad (15)$$

where:

- π_a = probability of bankruptcy.

The estimation of this component is subjective and not straightforward. To estimate the probability of bankruptcy, the same author proposes using the default rates associated to bond ratings or using statistical techniques.

The bankruptcy costs can be projected from researches and studies on the matter. Regarding direct costs of bankruptcy, they are usually small relative to the company value. Studies by Warner (1977), Altman (1984), Weiss (1990) and Betker (1997) all estimate direct costs in a range of about 3,1-4,3%. Branch (2002) estimates a range of 4,45-6,35%. The indirect costs of bankruptcy are more substantial and also more ambiguous to estimate. Overall, Branch (2002) defends that dealing with distress costs consumes between 12% to 20% of the prebankruptcy company value. At bankruptcy, for realistic levels of leverage, total costs range from 12% to 28% (Korteweg, 2007).

1.2.5- Economic Value Added (EVA)

EVA is a profitability model which indicates whether a company is creating or destroying value in each period, using the difference between the net operating profit less adjusted taxes (NOPLAT) and the cost of the invested capital:

$$\text{EVA} = \text{NOPLAT} - (\text{Invested Capital} * \text{WACC}) \quad (16)$$

A positive EVA shows the company is generating excess returns relative to the cost of invested capital, thus its resources are being efficiently allocated. A negative EVA shows the opposite.

Closely related with this concept of EVA, the Market Value Added (MVA) indicates if the company has the capacity of increasing the shareholder value over time, rather than in each period. It corresponds to the present value of a series of EVA values, usually discounted at the WACC:

$$\text{MVA} = \sum_{t=1}^n \frac{\text{EVA}_t}{(1 + \text{WACC})^t} \quad (17)$$

Employing this approach, the Enterprise Value (EV) is obtained by adding the invested capital to the estimated MVA:

$$\text{EV} = \text{MVA} + \text{Invested Capital} \quad (18)$$

To finally obtain the common equity value of the company, the market value of non-operating assets should be added and deducted the value of non-equity claims.

$$\text{Equity Value} = \text{EV} + \text{Non-operating assets} - \text{Non-equity claims} \quad (19)$$

1.2.6- Dividend Discount Model (DDM)

The DDM, the simplest and oldest DCF method in practice (Pinto *et al.*, 2010), assumes that the value of a company's stock corresponds to the present value of the perpetual stream of future dividends discounted at the required return rate by investors. In contrast with the FCFF and FCFE approaches, which use the cash flows available to distribute among stockholders, the DDM values the cash flows that stockholders expect to receive.

The general form of the DDM, first presented by Williams (1938), can be expressed as:

$$V_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1 + r_E)^t} \quad (20)$$

where:

- V_0 = current stock value;
- D_t = expected dividend during each holding period;
- r_E = equity required rate of return.

The formula above, however, involves estimating individual expected dividends for an indefinite period of time, which comes as a forecasting challenge. Thus, "future dividends can be forecasted by assigning the stream of future dividends to one of several stylized growth patterns" (Pinto *et al.*, 2010:96). One of them is to assume a stable constant growth rate sustained in perpetuity, as proposed in the Gordon growth model, developed by Gordon and Shapiro (1956) and Gordon (1962):

$$V_0 = \frac{D_1}{r_E - g} \quad (21)$$

where:

- V_0 = current stock value;
- D_1 = expected dividend payable at the next period;
- r_E = equity required rate of return;
- g = dividend growth rate.

This model is only suited for companies “growing at a rate comparable to or lower than the nominal growth in the economy and which have well established dividend payout policies that they intend to continue in the future” (Damodaran, 2002:13:4).

Other alternative growth patterns comprehend the use of two or three distinct stages of growth. In a two-stage growth model, the initial phase is represented by a high growth rate which is followed by a state where the growth rate is stable and constant. In a three-stage growth model, as suggested by Molodvsky, May & Chottiner (1965), there is a first period of high growth, followed by a declining growth period and then a final long-term stable growth phase. According to Damodaran (2002), this is a more flexible model useful to value any company, since it solves many of the constraints present in other versions of the DDM.

Whatever the model adopted, to find the equity value of the company it is just necessary to multiply the estimated share value by the total number of outstanding shares.

1.3- Relative Valuation

Lie and Lie (2002:1) state that valuing a company using the relative or multiples valuation method, “entails calculating particular multiples for a set of benchmark companies and then finding the implied value of the company of interest based on the benchmark multiples”.

To carry out a consistent and useful valuation, Koller *et al.* (2010) suggest three requirements must be filled:

1. Select the right multiples: EV/EBITDA and PER are the most used among analysts, even though the former is preferred; PER is distorted by capital structure and non-operating gains and losses.

Still, a number of other multiples can be used. Fernández (2001b) categorizes them into three main groups, presented in the table below:

Equity Value Multiples	PER (Price to Earnings Ratio) P/S (Price to Sales) P/BV (Price to Book Value)
Enterprise Value Multiples	EV/EBITDA (Enterprise Value to EBITDA) EV/Sales (Enterprise Value to Sales) EV/FCF (Enterprise Value to Free Cash Flow)
Growth-referenced Multiples	PEG (Price/Earnings to Growth) EV/EG (Enterprise Value to EBITDA Growth)

Table 1. Multiples categorization. *Adapted.*

2. Estimate the multiples in a consistent manner: the numerator and the denominator must be defined consistently;
3. Select the right peer group: a set of companies from the same industry which can be comparable to the company being valued. A good comparable, according to the same authors, should have similar long-term growth outlooks and ROIC. For Damodaran (2002), similar cash flows, growth prospects and risk comprise the more important features.

After estimating the multiples for each company in the peer group, some of the encountered differences/outliers may require adjustments in order to achieve more harmonized values. Then, the average of the adjusted individual multiples is computed and applied in the valuation. Multiplying the resulting average multiple by its denominator yields the company equity value, if using equity value multiples, or the enterprise value, if using enterprise value multiples. In case of the latter, to arrive at the company equity value, the value of non-operating assets should be added and subtracted the value of non-equity claims.

This widely used method has on its favour the need to make fewer assumptions and its simplicity. On the other side, this valuation method present itself some critical points such as the difficulties of selecting the right multiples and the peer group.

Fernández (2001b:1) defends that “valuations performed using multiples may be highly debatable” due to its broad dispersion, but they can be useful in a second stage of the valuation as a complement to another method. Liu, Nissim & Thomas (2002) also mention that multiples can be used to complement comprehensive valuations, typically to calibrate them and to obtain terminal values. Other positive aspects mentioned by Koller *et al.* (2010:313) is that it also helps to “explain mismatches between a company’s performance and those of its competitors”, and understand which companies are strategically positioned to create more value.

1.4- Contingent Claim Valuation

One revolutionary development in valuation, according to Damodaran (2002:2:14), was the acceptance that “the value of an asset may not be greater than the present value of its expected cash flows if they are contingent on the occurrence or not of an event” – option pricing models. Luehrman (1997a) defends that the most practical way to use this method in a company is to employ it following a DCF analysis, in the sense that they complement each other and the outputs from the DCF analysis serve as inputs for the option-pricing valuation.

However, these models were initially made to value traded options and its application to the corporate world is limited (Koller *et al.*, 2010).

1.5- Asset-based Valuation

In the asset-based valuation, the value of a company is obtained by valuing all its owned individual assets (Damodaran, 2002). Fernández (2001a) argues that this perspective values the company from a static viewpoint and that it does not account for growth and other factors capable of influencing the value.

Three variants are presented by Damodaran (2002): the liquidation value, which is obtained via the sum of all the estimated sale proceeds from the owned assets; the replacement cost, in which are estimated the costs of replacing the existing assets; and the accounting book value.

2- Market Overview

2.1- Macroeconomic Outlook

According to Navigator¹, macroeconomic factors have historically affected the demand for UWF paper. In the case of tissue paper, its demand is not very sensitive to economic cycles, despite its obvious tendency to grow faster in a high economic growth environment – this is more evident in developing countries, as economic growth allows greater product penetration in populations with lower income. As for pulp, the demand is not much correlated with macroeconomic factors since it is not a final product but rather a consumable used in the paper production process, being only sold to international paper producers – its demand is, thus, more related with the production capacity of the buyers and the general paper demand. In this segment, China is one of the most important drivers of demand, representing one third of world’s total demand.

Looking at the GDP growth (figure 1), we see the global economy in a synchronized slowdown in 2019, reaching the lowest levels since the 2008-09 financial crisis.

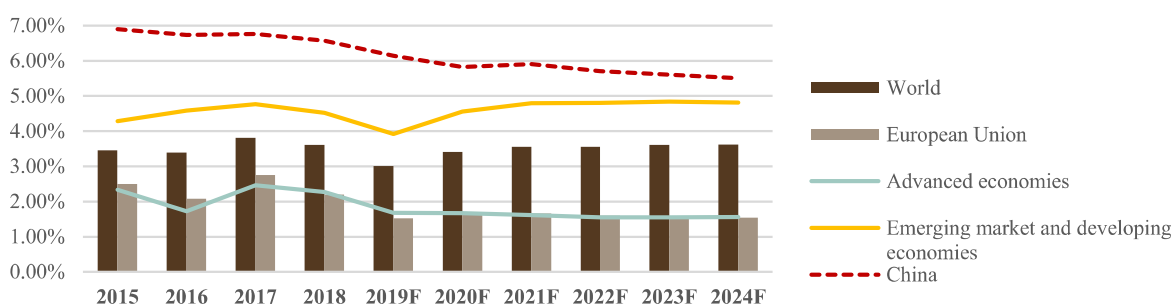


Figure 1. Real GDP growth. IMF World Economic Outlook, October 2019.

The sharp and general slowdown in manufacturing and global trade, driven by higher tariffs, prolonged uncertainty regarding trade policy (U.S.-China trade and geopolitical tensions, Brexit), help explain the growth dip. Despite this, the services sector continued to hold up, stimulating the labour market and wages growth in advanced economies. Also, a shift towards an accommodative monetary policy in the U.S. and other advanced and emerging economies act as a counterbalancing force. Surprisingly, the stock market boomed in 2019, with the Euro Stoxx 50 returning 24.7% and the Dow Jones returning 22.3%.

¹ Source: The Navigator Company. 2020. *Annual Report 2019*.

Besides the tension with the U.S., China's slowdown is also consequence of regulatory efforts needed to control its debt levels, which together provoked a toll on aggregate demand. For the coming years, growth is anticipated to continue to slow gradually as a reflection of the growth decline in the working-age population and the gradual convergence in *per capita* incomes.

In advanced economies, the growth in the medium-term is projected to remain suppressed, reflecting a moderate pace of productivity growth and slow labour force growth, result of an aging population.

For emerging and developing economies, the projection is a growth pickup in 2020 and beyond, motivated by recoveries or shallower recessions in stressed emerging markets and by recoveries in countries where growth has slowed considerably in 2019.

2.2- Industry Outlook

2.2.1- Pulp Market

In terms of global growth prospects, the BHKP production is the most well positioned segment in the paper and forest-products industry. In fact, the overall demand for market BHKP is projected to grow at a CAGR of over 2% in all world regions, except in the Western Europe region (0-2%) and Japan (<0%)².

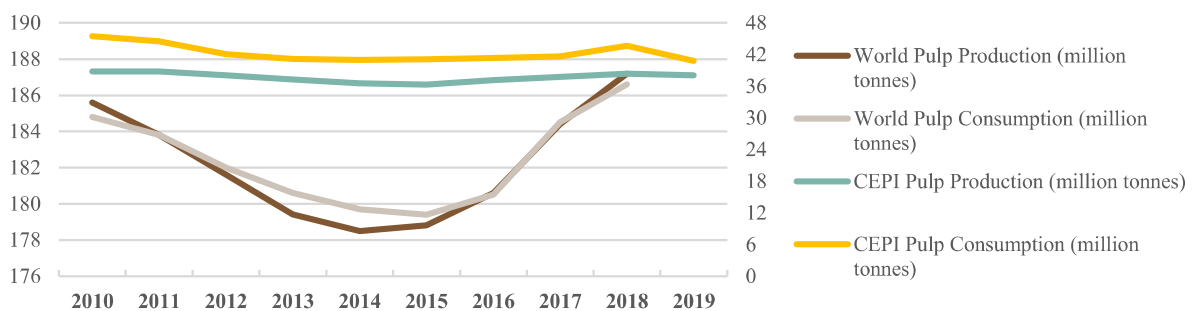


Figure 2. Total pulp production and consumption. CEPI.

Looking at the total pulp production and consumption worldwide (figure 2), we see the prevalence of a downward trend in the industry up until 2014, after which followed a recovery. By 2018, the production and consumption levels had risen above 2010's numbers – 187.2 million tonnes of pulp produced and 186.6 million tonnes consumed. Regarding Europe, despite

² Source: Berg, P. & Lingqvist, O. 2019. *Pulp, paper, and packaging in the next decade: transformational change*. McKinsey & Company, New York

a more stable behavior over the years, both production and consumption levels decreased. Comparing with 2010, production fell slightly by -1.8% (CAGR: -0.2%) in 2019 to 38.1 million tonnes – reflecting the effects of lower production capacity (-3.2%) – and pulp consumption registered a more expressive 10.3% drop to 40.8 million tonnes (CAGR: -1.1%).

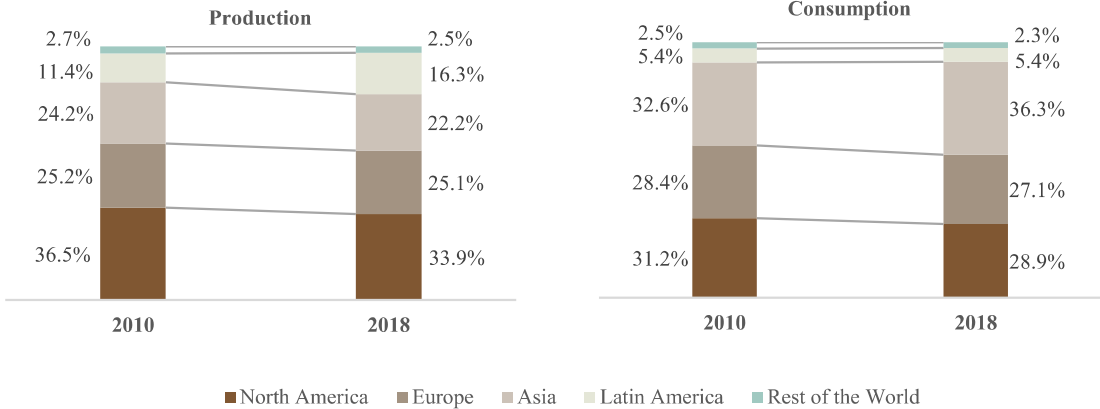


Figure 3. World total pulp production and consumption by region. CEPI.

In terms of geography (figure 3), North America is the largest pulp producer worldwide (33.9%), followed by Europe (25.1%) and Asia (22.2%). It is noteworthy the decreasing relevance of North America and Asia, and the fast emergence of Latin America – weighting 16.3% in 2018, an increase of around 44% compared to 2010 (11.4%). As for consumption, Asia is the leading country with 36.3%, followed by North America (28.9%) and Europe (27.1%). It is important to notice Asia’s rapid increase in consumption (+12.4% vs. 2010), which follows the reverse trend of its production. In the European pulp production scene, Sweden and Finland are the main players, contributing with 31.7% and 30%, respectively, for the total production of CEPI’s member states³ in 2019. Portugal contributed with 7.2%.

Concerning the trade flows of market pulp (about 35% of the total pulp produced), as evidenced in the gap between production and consumption in Europe, the region is a net importer itself. Historically, Latin America (78.4% in 2019) and North America (18.4%) have been the main sources of pulp supply, representing together over 90% of the total European imports. On the other hand, Asia (89.3%), which has been increasing its relevance quickly, is the main

³ Austria, Belgium, Czech Republic, Finland, France, Germany, Hungary, Italy, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and United Kingdom. CEPI represents 92% of the European Pulp & Paper industry production-wise.

destination of Europe's exports. As for the other world regions, Asia is also a net importer, while Latin America and North America are net exporters, especially the former.

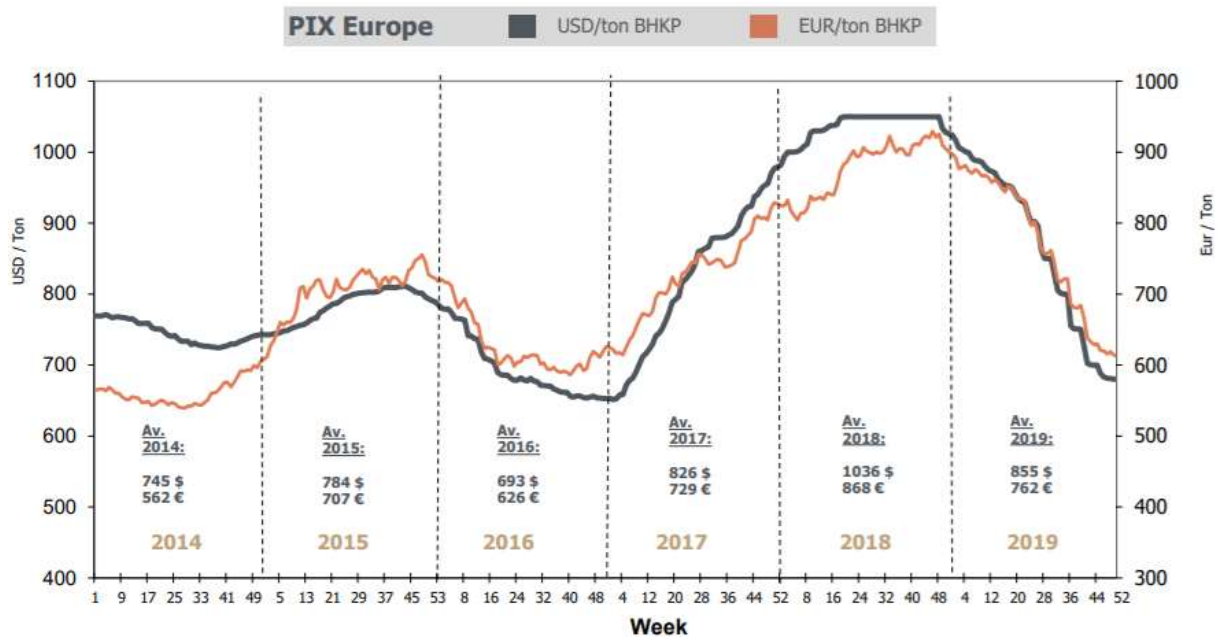


Figure 4. PIX BHKP Pulp Index chart, in \$/tonne and €/tonne. Navigator's 2019 Results Presentation.

In terms of price performance, the industry is viewed as very volatile – susceptible to changes in world supply/demand and the financial condition of the market players –, with the pulp price reference indexes (figure 4) fluctuating considerably over time. In the beginning of 2017, BHKP prices started to follow an upward trend, reaching its peak at \$1,050/tonne during 2018 and remained at this level for more than six months until the end of November (average₂₀₁₈: \$1,036/tonne and €868/tonne). Influenced by the deteriorating market conditions, decreasing demand in Asia and, later, in Europe and the resulting large build-up of stocks, the year of 2019 was marked by a progressive deterioration of BHKP prices, hitting a \$680/tonne low at the end of the year (-35% from the peak). The 2019 average index price was of \$855/tonne, a 17.7% drop against the \$1,036/tonne in 2018. In Euros, the pulp price fell by 13.3%, with an average price of €762/tonne, benefiting from the evolution of the EUR/USD exchange rate. Still, the 2019 average prices were higher than the 2013-18 period (\$813/tonne and €683/tonne).

In 2019, there were 151 pulp mills operating in the CEPI area, less 35.2% compared to the 233 mills in 2000, the equivalent to a production capacity of 43.7 million tonnes of pulp.

2.2.2- Paper Market

In the wake of digitalization, graphic paper, once the leading segment, saw its demand decline in 2015 for the first time ever and continued to fall pronouncedly since. In this category,

newsprint paper recorded a global CAGR₂₀₁₀₋₁₈ of -6.1% (vs. 1.1% in 1992-2007) and P&W paper a CAGR₂₀₁₀₋₁₈ of -1.5% (vs. 3.2% in 1992-2018)⁴. The year of 2019 had the worst demand performance since the financial crisis of 2009 for P&W paper, prompted by the global economic slowdown and also the contraction phenomenon in stock levels, closely associated with the pulp price cycle. In terms of growth prospects, wood-free P&W paper is expected to grow at a CAGR between 0-2% in Latin America and Asia (excluding China and Japan), but negative growth is expected in the remaining world regions⁵.

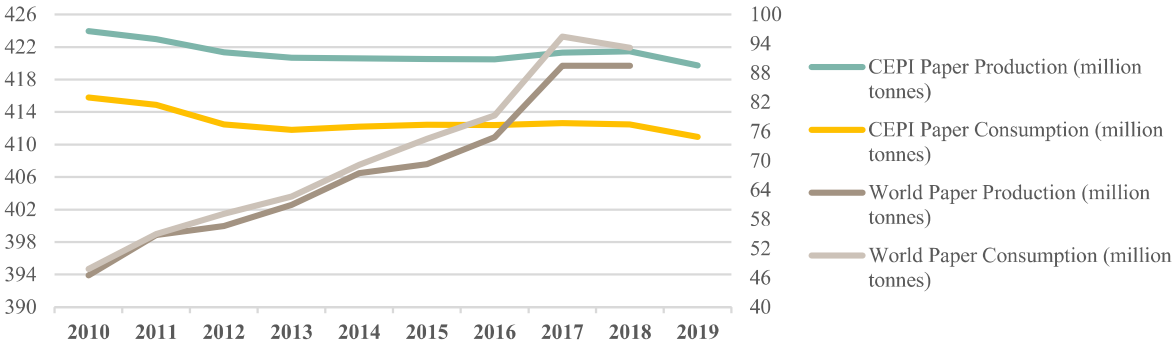


Figure 5. Total paper production and consumption. CEPI.

Still, despite the shrinking in graphic paper category, the paper industry continues to grow (figure 5) – just at a slower pace than before. The world’s total paper production hit the 419.7 million tonnes in 2018, an increase of 6.5% (CAGR: 0.7%) compared to the 393.9 million tonnes of 2010. Consumption-wise the numbers are similar: 421.9 million tonnes consumed, which represents a growth of 6.9% (CAGR: 0.7%) relative to 2010 (394.7 million tonnes). Europe’s situation, however, is not favourable. Production fell 7.3% (CAGR: -0.8%) to 89.6 million tonnes, while consumption dropped 9.8% (CAGR: -1%) to 74.9 million tonnes in 2019, compared to 2010.

Under the graphic paper umbrella, the UWF P&W European paper production (figure 6) registers a CAGR₂₀₁₀₋₁₉ of -1.9%, falling from 9.8 to 8.1 million tonnes produced (-17.7%). Consumption decreased 23.9% in 2019 to 6.5 million tonnes compared to 2010’s 8.6 million

^{4, 5} Source: Berg, P. & Lingqvist, O. 2019. *Pulp, paper, and packaging in the next decade: transformational change*. McKinsey & Company, New York

tonnes, implying a significant CAGR of -2.7%. Although these are not good indicators, UWF paper remains the best performing and most resilient grade of graphic paper.

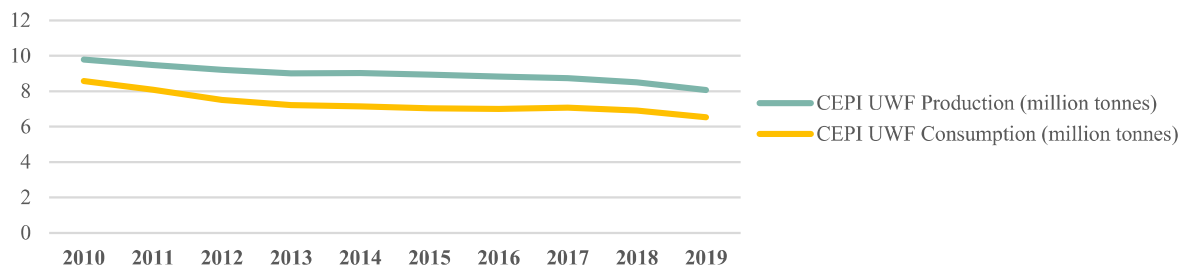


Figure 6. UWF paper production and consumption in CEPI region. CEPI.

Even though these are not good indicators, UWF paper is less exposed to digitalization and less dependent of media and advertising, remaining the best performing and most resilient grade of graphic paper (table 2).

	TOTAL	Uncoated Wood-Free	Coated Wood-Free	Uncoated Mechanical	Coated Mechanical
YTD November 2019	-6.2%	-2.6%	-8.0%	-11.5%	-11.0%
Average in the last 5 years	-2.3%	-0.3%	-3.1%	-4.0%	-5.8%

Table 2. Global P&W paper demand. Navigator’s 2019 Results Presentation.

Regarding the geographical distribution of the paper production and consumption worldwide (figure 7), Asia stands as the leading region by a big margin and with a growing relevance. It is responsible for 46.9% of the global paper production and 48.4% of the global paper consumption in 2018. Europe follows with a weight of 26.2% and 23.5%, respectively, and then North America with 19.6% and 18.1% – both decreasing in relevance when compared to 2010.

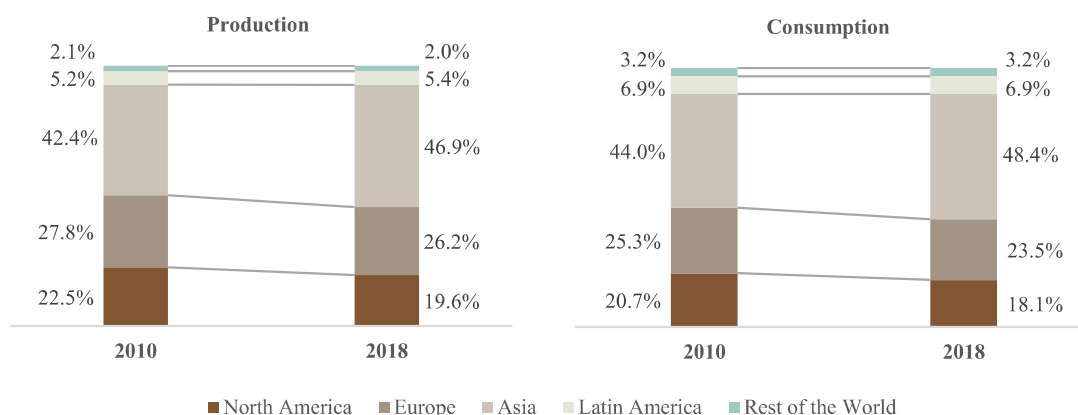


Figure 7. World total paper production and consumption by region. CEPI.

In the European scene, Germany is the largest producer, accounting for 24.6% of the total production in the CEPI region.

As for the international trades, European companies rely heavily on Asia, which represents around 40% of the total exports. North America stands as Europe’s main supplier, as it accounts for over 50% of the total imports of paper in 2019. Overall, Europe is seen as a net exporter of paper.

In terms of price performance (figure 8), the paper industry is historically a lot less volatile and paper prices have been showing great resilience, contrasting with the pulp industry’s fluctuating prices behaviour. Similarly to BHKP prices benchmark indexes, the UWF paper index A4 B-COPY started a sustained price evolution in the beginning of 2017 until the end of 2019’s first quarter, period at which the trend inverted as a result of the decreasing paper demand – effects of the economic cool down and an overall destocking in the value chain –, with a more pronounced drop in the last quarter. Between January and December, the price of the index dropped 2.7%, being 2.1% attributable to the last three months. Notwithstanding, in 2019, the index was able to record an average price of €903/tonne, 3.4% above the average of €873/tonne for 2018 and 8.1% above the 2013-18 average of €835/tonne.

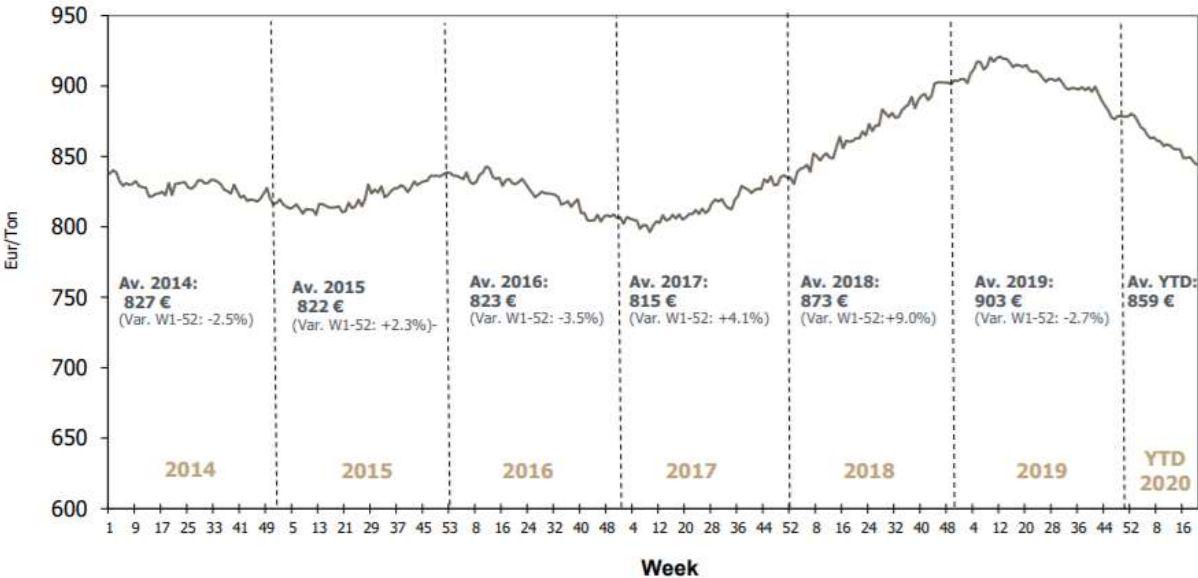


Figure 8. PIX Paper A4 B-COPY Index chart (in €/tonne). Navigator’s 2019 Results Presentation.

Finally, regarding installed capacity, in 2019, there were 740 paper mills operating in the CEPI region, less 31.2% than in 2000 (1,076 mills), the equivalent to a production capacity of 101.6 million tonnes of paper. Also in 2019, several producers announced the conversion or shutdowns of UWF production units in Europe (-200 thousand tonnes) and US (-757 thousand

tonnes), partially counterweighing new capacities joining the market. The new capacities/closures balance for 2018-2020 is estimated to be close to zero.

2.2.3- Tissue segment

Promoted by the deterioration of the graphic paper sector, the paper industry is undergoing the most substantial transformation occurred in decades, with companies consolidating in certain segments and restructuring its production capacity. Hence, other sectors such as the tissue and packing paper are rising to fill the gap left. Tissue sector's growth prospects are the most promising in the industry – expected CAGR is of above 2% for Latin America, Eastern Europe and Asia (excluding Japan); and of 0-2% for North America, Western Europe and Japan. Historically, the tissue paper segment is also one of the best performers, recording a CAGR of 3.6% in 2010-18, just a little below the 3.9% registered in 1992-2007⁶.

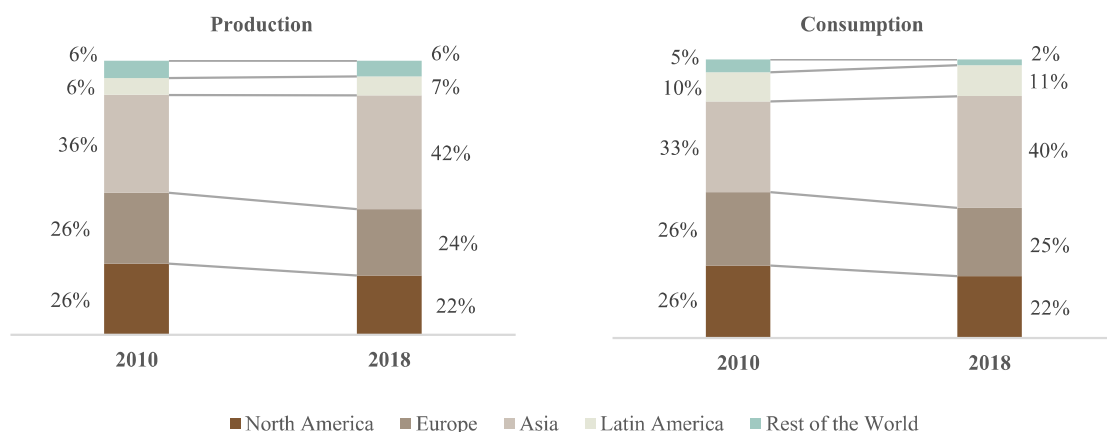


Figure 9. World total tissue production and consumption by region. FAO.

The worldwide tissue production (figure 9) amounted 35.6 million tonnes in 2018, a 25.6% growth compared to 28.3 million tonnes of 2010. Asia is the world leader, responsible for 42% of the total 2018's production, followed by Europe (24%) and North America (22%). In consumption terms, the year of 2018 hit a world total of 35.5 million tonnes, an increase of 24% compared to 2010 (28.6 million tonnes). Likewise, Asia is the leading region (40%), while Europe and North America account for 25% and 22%, respectively, of 2018's global consumption. It is noticeable Asia's growth in relevance over the years, as well as the role China occupies – responsible for 27.3% and 26.9% of world's production and consumption, respectively, in 2018. On the contrary, Europe and North America have been losing market

⁶ Source: Berg, P. & Lingqvist, O. 2019. *Pulp, paper, and packaging in the next decade: transformational change*. McKinsey & Company, New York.

share. The U.S. also occupies an important role, contributing for 19.5% and 20.2% of world's production and consumption, respectively.

As for the trade market, it is noteworthy that, regardless of being the second and third largest tissue producers in the world, Europe and North America still are net importers, resorting to the Asian market to fulfil their necessities.

For the future, tissue main drivers will be centred on demographic shifts and consumer trends such as the demand for convenience and sustainability, being expected to grow roughly on par with GDP (Berg & Lingqvist, 2019).

3- Company Overview

3.1- Profile

The Navigator Company is a Portugal-based vertically integrated forestry, pulp, paper, tissue and energy producer that pursues a strategy of differentiation based on high-quality products, today an international benchmark in the industry.

The company is the European leader and sixth worldwide in the production of uncoated wood-free (UWF) fine printing and writing papers. It is also the leading company in Europe and the fifth largest in the world in the production of bleached eucalyptus kraft pulp (BEKP). In terms of installed production capacity, Navigator is able to produce 1.6 million tonnes per year, both for UWF paper and pulp. In the tissue segment, they have a total capacity of 120 thousand tonnes per year.

Navigator is also a leading operator in the biomass energy sector, generating around 2.5TWh/year of electricity, which accounts for about 5% of Portugal's total electricity production and more than 50% of all power generated from biomass in the country.

Above all else, Navigator is an international company. As Portugal's third largest exporter, they account for approximately 3% of all Portuguese export of goods and contribute for around 1% of the country's GDP, exporting 95% of its UWF paper production and 44% of its tissue paper to 130 different countries. Despite this level of internationalization, all four industrial facilities are located in Portugal (Figueira da Foz, Setúbal, Cacia and Vila Velha de Ródão).

In 2019, Navigator's net result amounted to €168.3M, with €1,687.9M in sales. The total number of employees was of 3,280 persons.

The company is listed on the regulated Euronext Lisbon market and it is integrated in the Portuguese PSI20 index, having a market cap of €2,574.4 billion⁷.

3.2- History

Navigator's genesis goes back to 1953, when the first world producer of bleached eucalyptus sulphate pulp was incorporated under the name of *Companhia Portuguesa de Celulose de Cacia*.

⁷ As of 31 December 2019.

Later in 1976, in the aftermath of the Portuguese military revolution of 1974, the cellulose industry was nationalized and a group of pulp and paper mills and packaging factories⁸ were merged into a single company named Portucel. As one of the leading bleached eucalyptus kraft pulp manufacturers in Portugal, at the start of the 21st century, Portucel became Portucel Soporcel Group (now The Navigator Group) following two key strategic acquisitions in Inapa (2000) and Soporcel (2001), part of its consolidation plan.

In 2004, Semapa – one of the largest Portuguese industrial conglomerates – became the major shareholder by acquiring 67.1% of the company through a public acquisition offer. The final stage of the privatization process that started in 1995 came in 2006, when the State (represented by Parpública) sold its 25.7% position in the company.

Meanwhile, in line with its investment and expansion plan, the company grew into a leading producer of UWF printing & writing paper in Europe and one of the largest in the world with the construction of two new paper mills in Setúbal (2006 and 2009). Portucel Soporcel also committed heavily to a sustainable policy, making large investments in the energy production area through the construction of biomass and combined cycle power stations.

In 2015, planning to diversify its business portfolio, the company acquires AMS as a fast-track to enter the Tissue segment, where they envisioned to become European leaders. In 2015, the company also expanded to Mozambique and, one year later, to the U.S.. Also in 2016, implementing a rebranding strategy aiming a more international recognition, Portucel Soporcel transformed into The Navigator Company.

3.3- Shareholder Structure

Navigator Company’s share capital, as of the end of 2019, comprised a total amount of 715,500,000 ordinary shares without nominal value.

Semapa Group is the major shareholder since 2004, owning 69.35% of the company’s share capital (Seinpar Investments is one of its subsidiaries).

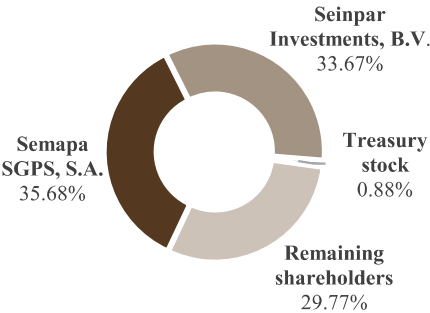


Figure 10. Navigator's shareholder structure as of 31 December 2019. Annual Report 2019.

⁸ CPC – Companhia de Celulose, S.A.R.L. (Cacia), Socel – Sociedade Industrial de Celulose, S.A.R.L. (Setúbal), Celtejo – Celulose do Tejo, S.A.R.L. (Vila Velha de Ródão), Celnorte – Celulose do Norte, S.A.R.L. (Viana do Castelo) and Celuloses do Guadiana, S.A.R.L. (Mourão), by Decree-Law No. 405/90, of 21 December.

Institutional investors own 20.02% of the remaining shares, and private investors 9.24%.

Navigator's institutional investors are mostly from Europe. Portugal is the most represented nation with 42% of the company's ownership.

3.4- Business Areas

Navigator, as an integrated company, is present in all the activities of the value chain, starting in R&D and ending in the sale of the end products.

Research and Development

In the perspective of contributing to the competitiveness and sustainability of the company, the R&D area is viewed as a key priority by Navigator.

RAIZ, a non-profit research institute created in 1996, acts as the company's vehicle in the areas of Applied Research, Consulting and Training, expertizing on forest, pulp, paper and biotechnology. With a budget of €3.5M/year, some of its goals comprise improving the productivity of eucalyptus forests and enhance the quality of its fibre, the implementation of a sustained forestry management program and fostering processes that allow to reduce wood production costs.

Agro-forestry

The forest is the base of Navigator's existence. The company produces wood and transforms it into BEKP to later incorporate in paper production or sell it in the market.

As the leading private sector forestry operator in Portugal, Navigator manages 108 thousand hectares of woodlands – 74% of *eucalyptus globulus* plantations and 26% diversified plantations (pine, cork oak and others) –, around 3% of Portugal's forested area.

Pulp Production and Sales

The pulps produced at Navigator are regarded as a global benchmark in the sector and are tailored to use in the manufacture of high-quality paper.

BEKP is the most produced pulp and a significant portion of it is consumed internally in the production of UWF and tissue paper

The company is leader in Europe and the fifth largest worldwide in BEKP production, with an installed capacity of 1.6 million tonnes/year and a load factor of almost 90%.

	2015	2016	2017	2018	2019
Aveiro	296	341	354	358	350
Figueira da Foz	580	586	593	575	586
Setúbal	548	543	542	519	490
Total Pulp Output	1,424	1,470	1,489	1,452	1,426
Total Pulp Sales	253	291	311	253	314

Table 3. Total pulp output (th. tAD) by industrial unit. Navigator's Annual Report 2019.

Paper Production and Sales

Navigator is the European leading company in the production of UWF paper and the sixth largest in the world. The company is able to produce 1.6 million tonnes of paper annually and benefits from an efficient cost structure with integrated and sophisticated industrial units operating at almost full capacity – load factor of over 90% in the past five years.

UWF paper is the core segment at Navigator, accounting for almost 80% of the company's total sales value and a 19% market share in the Europe. Their strategy in this segment is to focus on its own brands, offering a portfolio of brands – divided into office paper and offset paper – with different value propositions to reach different segments. Similarly to the pulps produced, Navigator's paper is also of a superior quality and recognized worldwide. In fact, in Western Europe, Navigator has got around 50% market share in the premium segment.

	2015	2016	2017	2018	2019
Figueira da Foz	765	767	771	744	719
Setúbal	806	820	822	791	722
Total Paper Output	1,571	1,587	1,593	1,535	1,441
Total Paper Sales	1,555	1,587	1,578	1,513	1,447

Table 4. Total finished paper output (th. tAD) by industrial unit. Navigator's Annual Report 2019.

Tissue Production and Sales

The tissue segment was identified as one strategic area in Navigator's expansion and diversification plan for its growth prospects, its synergies with their core business and the competitive advantage the company could achieve through the pulp integration.

Following the €120M investment in the construction of the new mill in Aveiro (Cacia), which allowed to increase the production capacity to 120,000 tonnes of finished paper and 130,000 tonnes of reels, Navigator became the third main player in Iberia.

It is a segment with rapid growth in the company – the volume produced and sold increased 52% to 96 tonnes and the sales are up 45% to €132M in 2019 compared to the previous year.

	2015	2016	2017	2018	2019
Reel output	33	47	56	72	102
Finished product output	35	42	49	66	73
Sales of reels and merchandise	2	9	7	2	21
Finished product sales	37	42	48	61	75
Total tissue sales	39	51	55	63	96

Table 5. Total tissue output (th. tAD), Navigator's Annual Report 2019.

Energy

Energy is an important activity in the company, allowing the use of an internal renewable resource which is the biomass generated in the wood transformation process for pulp production.

Electricity and thermal energy (heat) are mainly produced in four biomass cogeneration plants and two natural gas cogeneration units, integrated in the production of pulp and paper. The heat production is entirely used for internal consumption, whereas 100% of the electricity produced is sold to the national energy grid at regulated tariffs. Navigator also owns two thermoelectric biomass plants dedicated to the exclusive production of electricity and 3 photovoltaic plants for auto-consumption.

In 2019, Navigator produced 2.1TWh of electricity, which represents 4% of Portugal's annual generation.

3.5- Financial Analysis

3.5.1- Profitability

Navigator's total revenues (figure 11) presented a CAGR of 0.7% from 2015 to 2019, driven by the growth of market pulp sales (CAGR₂₀₁₅₋₁₉: 6.4%) and tissue (CAGR₂₀₁₅₋₁₉: 17.5%). Regardless, turnover in the UWF paper segment (CAGR₂₀₁₅₋₁₉: -0.7%) – whose weight on total revenues is of over 70% – and in the Energy segment (CAGR₂₀₁₅₋₁₉: -4.0%) have been deteriorating. Around 70% of the revenues are generated in Europe, of which 20% in Portugal.

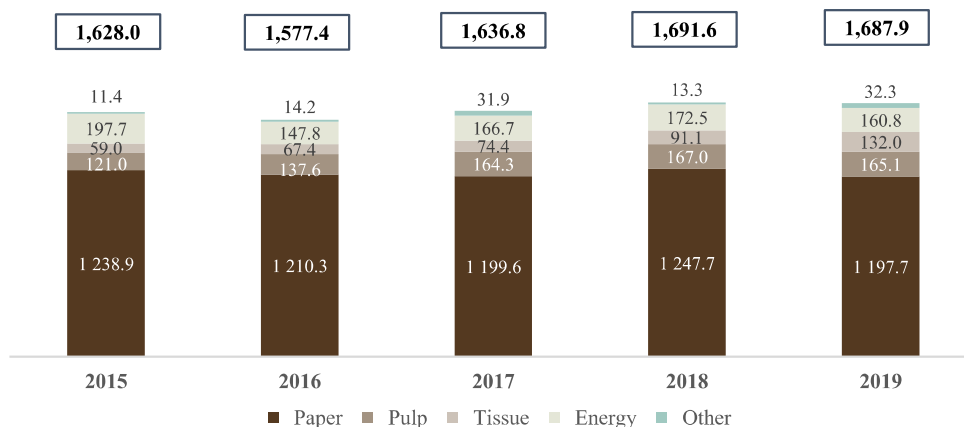


Figure 11. Total revenues breakdown (in million €). Navigator's Annual Reports.

EBITDA margin (figure 12) has averaged the 24.5% mark over the period and stands as one of the highest in the industry. The margin worsened in 2019 in the sequence of a drop in pulp prices and an increase in production costs due to higher prices of energy, wood and chemicals. Operating fixed costs have increased in the last years, but the effect was eased with the implementation of cost reduction and optimization programmes.

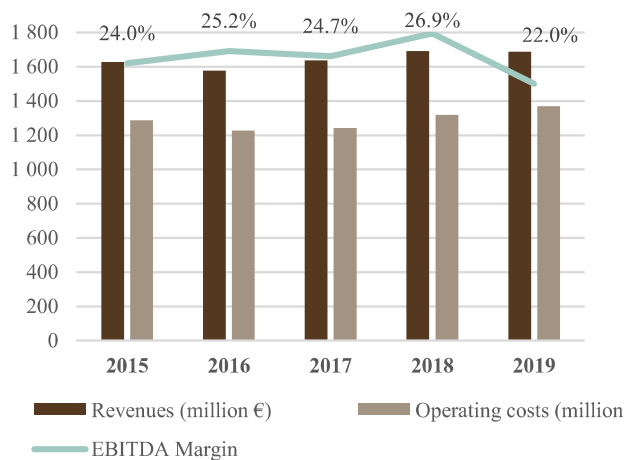


Figure 12. EBITDA Margin, revenues and operating costs. Navigator's Annual Reports.

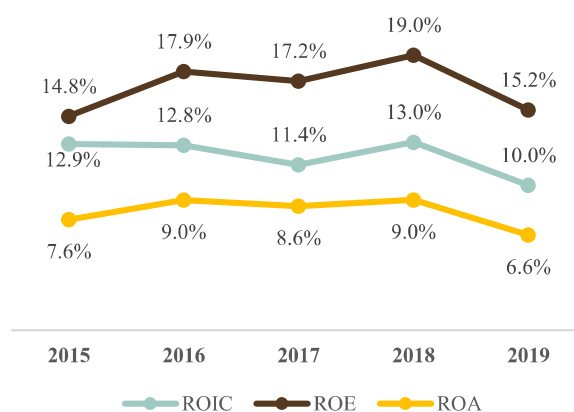


Figure 13. Navigator's return ratios. Navigator's 2019 Annual Report.

As for the company's net profit, it has remained fairly stable in the last five years, averaging €203.0M during the period. The year of 2019 reported a drop to €168.3M on the back of a worsened EBITDA.

Concerning Navigator's return ratios (figure 13), ROE has evolved favourably from 14.8% in 2015 to 19.0% in 2018 on the back of the decline in Shareholder's Equity. In 2019, it dropped to 15.2% as Net Income tumbled, but it still was above the industry average of 13.6%. ROA

has also evolved positively between 2015 (7.6%) and 2018 (9.0%) backed by the increase in Net Assets. It dropped sharply in 2019 to 6.6%, once again affected by the Net Income. Lastly, ROIC has maintained a stable trend (average₂₀₁₅₋₁₈: 12.5%) but has fallen to 10.0% in 2019 due to the decline in operating profits.

3.5.2- Liquidity

Regarding liquidity management, Day of Sales Outstanding (DSO) and Days of Inventory Outstanding (DIO) have remained relatively stable over the last years. The low DSO (avg.₂₀₁₅₋₁₉: 41 days) means Navigator has a short average turnaround in converting its receivables into cash, which evidences its good collection process and high liquidity, also boosted by an increasing number in Days of Payables Outstanding (DPO) (avg.₂₀₁₅₋₁₉: 92 days). All in all, the cash conversion cycle has evolved very positively (44 days in 2019 and an avg.₂₀₁₅₋₁₉ of 59 days). A steady current ratio well above 1 (avg.₂₀₁₅₋₁₉: 1.4x) also provides indications that the company has its short-term obligations fully covered, despite the quick assets not covering entirely the current liabilities, mainly due to the weight of Inventories in the current assets total (avg₂₀₁₅₋₁₉: 34.2%).

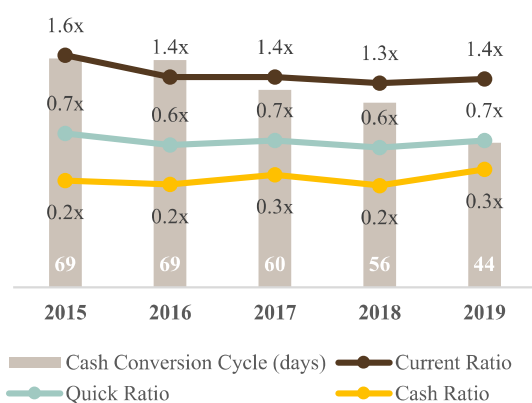


Figure 14. Navigator's liquidity ratios. *Own estimates.*

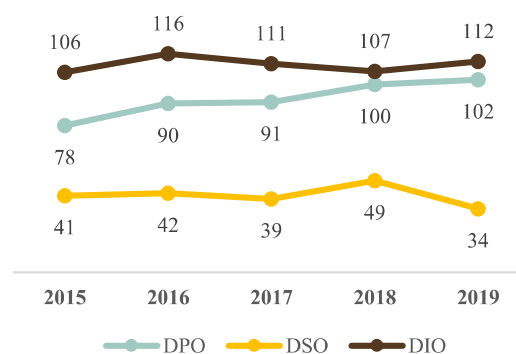


Figure 15. Cash conversion cycle components. *Own estimates.*

In what pertains to cash flow management (table 6), Net Operating Cash Flow (NOCF) has improved in the period under analysis, from €304.9M in 2015 to €379.7M in 2019, boosted by the increase in receipts from costumers and the decrease in payments to suppliers. Cash flow from operations has not always been enough to finance both the investment activities (CAPEX) and the financing activities (mainly dividend payments and debt repayments). From 2016 to 2019, Net Cash Flow averaged €22.3M. In 2015, however, the value was of -€436.6M, largely explained by loan amortizations of €379.7M and dividend payments of €440.5M (besides the payment of the year, it was also anticipated dividends relative 2016).

	2015	2016	2017	2018	2019
NOCF	304.9	281.6	305.9	360.2	379.7
CFI	-179.5	-71.8	-96.7	-134.9	-174.1
CFE	-562.1	-214.8	-151.4	-269.6	-124.5
Net cash flow	-436.6	-5.1	57.8	-44.4	81.1

Table 6. Navigator's cash flows (in million €). Navigator's Annual Reports.

3.5.3- Capital Structure

Total Equity has declined over the last five years to €1,027.4M in 2019 (vs. €1,214.3M in 2015), while Net Assets have increased to €2,533.7M (vs. €2,429.9M in 2015) at the hand of acquisitions and expansions in PP&E. In result, Navigator's solvency ratio has been fading, recording a value of 0.40x in 2019 (vs. 0.50x in 2015).

	2015	2016	2017	2018	2019
Equity (million €)	1,214.3	1,233.3	1,179.6	1,187.2	1,027.4
Net debt (million €)	654.5	640.7	692.7	683.0	715.3
Net assets (million €)	2,429.9	2,409.1	2,427.6	2,549.8	2,533.7
Solvency Ratio	0.50	0.51	0.49	0.46	0.40
Net Leverage	1.68	1.61	1.72	1.5	1.92

Table 7. Capital structure data. Navigator's Annual Reports and own estimates.

Contrasting with the evolution of Total Equity, Debt levels have grown during the 2015-2019 period following two debt restructuring processes, in 2017 and 2019. The Total Debt, with an average maturity of 3.5 years and an average cost of 1.7%, amounted to €906.4M (vs. €727.1M in 2015), which represents 60.6% of Total Liabilities.

Despite the recent increases in Debt and decreases in Equity, the company still presents a conservative capital structure and a reported Net Leverage below its publicly stated maximum leverage of 2.0x – average of 1.63x between 2015-18 and up to 1.92x in 2019. In the same period, the D/E ratio averaged 0.29x (0.36x in 2019).

As for the dividends paid (table 8), Navigator has been offering an attractive dividend policy to its shareholders, recording considerable payout ratios that range from 78.2% to 224.1% between 2015 and 2019 (average: 125.8%). Debt has also been used to in part finance such high dividends.

	2015	2016	2017	2018	2019
Nº of market shares (million)	717.0	717.0	717.0	716.6	711.2
Dividends paid (million €)	440.5	170.0	250.0	200.0	200.0
Net earnings per share (€)	0.274	0.303	0.290	0.314	0.237
Dividend per share (€)	0.614	0.237	0.349	0.279	0.279
Retention ratio	-124.1%	21.8%	-20.3%	11.1%	-17.7%
Dividend payout ratio	224.1%	78.2%	120.3%	88.9%	117.7%

Table 8. Dividend data. *Navigator's Annual Reports and own estimates.*

This situation is not sustainable, and it is only justified by Semapa's reliance on Navigator's constant flow of dividends to service its own dividend payments and its sizeable holding debt obligations. Navigator is Semapa's key asset, representing a substantial proportion of its revenues and profits – around 75% of total sales and 80% of EBITDA.

4- Valuation

The valuation was primarily based on the DCF-FCFF method, since it is the most widely established and works best when it is possible to forecast with a reasonable degree of confidence the future cash flows of a company. As a complement, it was also performed a relative valuation using a set of benchmark companies.

4.1- Valuation Assumptions

The analysis that will follow was performed for the period of 2015-2023 and it was assumed an explicit forecasting period of four years (2020-2023). Due to its subjective nature, below are detailed the main assumptions and forecasts used in the model.

4.1.1- Income Statement Items

4.1.1.1- Revenues

For the total sales, it was projected an overall CAGR_{2019-23F} of -1.0%.

Pulp: With industry increases in tissue and paper capacity in 2020, the absence of increases in pulp supply until mid-2021 should translate in an improvement of the market conditions and higher utilization rates. In terms of prices, the cycle seems to have reached its bottom and it is not expected further price decreases in the short term.

Navigator's pulp production units are operating at almost full capacity, and with no new additions/expansions projected, production levels should not fluctuate greatly. Pulp sales should improve 1.0% to 2020F and 0.2% YoY the following years, implying a projected CAGR_{2019-23F} of 0.3%.

Paper: The global end demand for UWF paper is decreasing and no changes are estimated to occur in the next years. Regardless, Navigator is showing resilience and its paper sales are declining at a slower pace than the industry.

In key markets for the company, paper supply chain ended 2019 with low stock levels and consequently reduced consumption. The year of 2020 should see a recovery in that aspect, as new orders are received.

The paper price was, at the end of 2019, being pressured by the low pulp prices, that have now stabilized. Still, as global demand falls, no price increases are foreseen in the short term, being more likely that paper witnesses a further price softening.

Navigator's production levels should remain stable, as its industrial units are operating at almost full load factor and no additions or expansions are projected to happen. Accordingly, paper sales are forecasted to decrease -0.2% in 2020 and -1.5% YoY until 2023 (CAGR_{2019-23F}: -0.9%).

Tissue: In the tissue segment, the growth prospects for global demand are very optimistic. On the back of its recent growth projects, Navigator will look to consolidate its performance and operations in this business, albeit the context of new capacity additions in Iberia. Sales are expected to increase 3% in 2020 and to grow 2.5% each following year, corresponding to a CAGR_{2019-23F} of 2.1%.

Energy and Others: In the energy segment are recorded the sales of energy coming from the cogeneration in the pulp and paper production process and the sales of electricity exclusively produced in biomass power plants.

A few years ago, in the sequence of the Financial Adjustment Program to which Portugal was subjected, the entire remuneration system of the national electricity sector was revised, and the electricity produced from cogeneration was largely impacted. A progressive tariff reduction associated to the sale of electricity in special regime is now in place, resulting in the economic sustainability of selling energy to the national grid being affected. Consequently, the cogeneration power plants are now being converted to operate on a self-consumption basis. This already occurred in Cacia and Figueira da Foz and the same will happen in Setúbal by mid-2020. Thus, it was assumed a reduction in the annual energy sales for the projection period (CAGR_{2019-23F}: -4.7%).

The segment "Others" record the sales of cork and pine wood to third parties. It was assumed that this segment will grow in line with the 2015-19 average.

4.1.1.2- Operating Expenses

In the last years, Navigator has focused on improving its competitiveness and efficiency through the launch of optimization and cost-reduction projects and initiatives aimed at reducing the company's operating expenses, such as the M2 Operational Programme for Excellence and the Corporate Zero-Based Budget Programme.

In general, for each of the Operating Costs items, it was assumed that from 2019 onwards they would correspond to the historical 2015-19 average as a percentage of sales. In 2020, it is reflected the €45M that the company expects to achieve in savings.

4.1.1.3- Net change in provisions

Provisions refer mostly to tax proceedings and legal claims. Due to its non-operational nature, it is difficult to estimate gains/losses arising from provisions' net changes during the forecasting period. Consequently, it was assumed zero net changes.

4.1.1.4- Depreciation, amortization and impairment losses

Regarding depreciations of PP&E and amortizations of intangible assets and right use of assets, the respective historical annual rates were computed (see Annex D). For the 2020F-23F period, the annual depreciations of PP&E and amortizations of intangibles will correspond to the last 3-year average rates multiplied by the assets' gross book value. In the amortizations of right use of assets, it was used the amortization rate from 2019.

As for impairments, the forecasted value is zero since it is a non-recurrent and unpredictable item.

4.1.1.5- Financial Results

For "Other earnings and financial income", it was applied the historical 5-year average as weight on sales, while for "Other expenses and financial losses" it was considered the 5-year average of its weight on financial debt adjusted for early debt repayments.

4.1.2- Balance Sheet Items

4.1.2.1- Working Capital

Net working capital compares the operating current assets of a company with its operating current liabilities. It is a measure of a company's liquidity, short-term financial health and operational efficiency.

The operating current assets considered in the computation of Navigator's net working capital include the items of "Inventories", "Accounts receivable", "Other current assets" and "State and other public entities". As per the operating current liabilities, were considered the items "Accounts payable", "Other payables and liabilities" and "State and other public entities". Computations are detailed in Annex E.

The forecasts for "Inventories", "Accounts receivable" and "Accounts payable" were based, respectively, on the historical 5-year averages of the Days of Inventory Outstanding, the Days of Sales Outstanding and the Days Payable Outstanding ratios.

The remaining items were estimated using their 2015-19 average weight on revenues.

4.1.2.2- Capital Expenditures (CAPEX)

In the last years, Navigator has invested heavily in new cycle CAPEX, namely, in tissue expansion (€200M), in the pellets business (€115M) and pulp capacity expansions (€120M). In this category, for the forecasting period, we included regulatory investments, investments related with the Mozambique project and in the Carbon Neutrality programme and core business improvements (see Annex F).

Maintenance & recurrence CAPEX were assumed to correspond to 3.5% of the revenues, which is in line with the company's business plan projections and with the average ratio of the last five years.

4.1.2.3- Dividends

Navigator's dividend payout ratio ranged from 78.2% to 224.1% between 2015 and 2019, recording an average of 125.8%, which, as stated before, is an unsustainable payout ratio.

Consequently, and taking in consideration previous dividend payments, it was assumed the dividend payout ratio dropped to 95% from 2019 onwards. Navigator has also announced that if the profits remained at 2019's level, a decrease in the dividends was on the table⁹.

4.1.3- Weighted-Average Cost of Capital

4.1.3.1- Capital Structure

In the estimation of Navigator's target capital structure, it was considered that the book value of Navigator's financial debt matches its market value (debt's forecasted evolution detailed in Annex G). The market value of equity was attained multiplying the number of shares outstanding by the share price as of the end of each year.

Navigator's capital structure has been fairly stable in the last five years (see table 9), which we understand to be an acceptable reason to define the target ratio of debt-to-equity equal to the average of that period, which is 0.30. The ratio is also not far off the industry's average of 0.40.

⁹ Source: Navigator's Conference Call for the 2019 Results Presentation.

	2015	2016	2017	2018	2019
#Shares outstanding (in million shares)	717.0	704.5	717.0	717.0	713.1
Share price as of the end of the year	€3.60	€3.27	€4.25	€3.60	€3.59
Market value of Equity (in million €)	2,581.2	2,303.7	3,047.3	2,581.1	2,560.1
Book=Market value of Debt (in million €)	727.1	708.2	818.1	763.8	924.0
D/E	0.28	0.31	0.27	0.30	0.36

Table 9. Navigator's capital structure. Navigator's Annual Reports and own estimates.

4.1.3.2- Equity required rate of return

The required rate of return to equity was computed using the CAPM risk-return model, which yielded a rate of 7.88%. The assessment of the components that originated this value are described below.

4.1.3.2.1- Risk-free rate

As suggested in the literature, the security used to proxy the risk-free rate was the 10-year German Government Bond. Since its yield as of the end of 2019 was negative, it was assumed the 2015-19 daily average yield instead, which corresponds to 0.19%¹⁰. By using this historical average, we are also normalizing the rate to a reasonable long-term value capable of being used across all periods of the valuation.

4.1.3.2.2- Beta

To achieve Navigator's levered beta, it was adopted the bottom-up beta approach resorting to a sample set comparable firms (see table 10).

Company	Mkt Cap (€M)	Adj. Beta	Tax Rate	D/E	Unlevered Beta
NAVIGATOR COMPANY	2,574.4	1.09	21.6%	0.36	0.85
UPM-KYMMENE	16,485.0	1.24	17.9%	0.08	1.16
STORA ENSO	10,328.0	1.36	24.7%	0.40	1.05
MONDI	10,165.0	1.11	23.3%	0.22	0.95
HOLMEN AB	4,437.0	0.88	21.2%	0.10	0.81
AHLSTROM-MUNKSJO	1,650.9	0.72	36.2%	0.64	0.51
ALTRI	1,165.0	1.19	26.0%	0.67	0.79
ENCE ENERGIA Y CELULOSA	903.8	1.01	24.0%	0.82	0.62
Average (exc. Navigator)	6,447.8	1.07	24.8%	0.42	0.84
Median (exc. Navigator)	4,437.0	1.11	24.0%	0.40	0.81
Levered Beta NAVIGATOR COMPANY		1.01			

Table 10. Bottom-up beta. Bloomberg.

In this process, it was necessary to gather data regarding the chosen seven peers, compute their respective implicit unlevered beta and arrive at the median unlevered beta of the sample (0.81 – close to the 0.86 estimated by Damodaran to a set of 36 companies). Then, to reflect both

¹⁰ Source: Bloomberg Terminal.

operating and financial leverage, the beta was re-levered at Navigator's target capital structure, resulting in a levered beta of 1.01.

4.1.3.2.3- Market Risk Premium

The market risk premium of 6.00% used in the valuation was based on an analysis by KPMG¹¹ to the historical implied equity returns of number of stock indexes (namely, the S&P 500, FTSE 100, STOXX 600 and AEX) and to the yield of long-term bonds of highly developed countries (UK, Germany, U.S. and Netherlands).

In addition to the base market risk premium, it was also added the country risk premium for Portugal of 1.84%. The value was obtained using the country's estimated default spread based on Moody's sovereign rating (Baa3)¹².

4.1.3.3- Cost of Debt

Since Navigator does not disclose the yield of the bond with the largest maturity, we opted to follow Damodaran's (2002) recommendation to estimate the cost of debt by adding the risk-free rate and the estimated default spread associated with the company's debt rating (Ba2/BB). Thus, considering a risk-free rate of 0.19% and a default spread of 2.40%, it was estimated a cost of debt of 2.59%. With a tax rate of 21.50%, the after-tax cost of debt amounted to 2.03%.

4.1.3.4- Summary

The table below aggregates all the items previously described that serve as inputs for the calculation of the WACC, the rate at which the free cash flows were discounted:

Risk-free rate	0.19%
Country risk premium	1.84%
Market risk premium	6.00%
Industry Unlevered Beta	0.81
Company Levered Beta	1.01
Equity required return rate	7.88%
After-tax cost of debt	2.03%
Debt-to-Total Capitalization	0.23
Equity-to-Total Capitalization	0.77
WACC	6.53%

Table 11. Components for the WACC estimation. *Own estimates.*

¹¹ Source: KPMG. 2019. Equity Market Risk Premium – Research Summary (31 December 2019).

¹² Damodaran's estimates as of 31/12/2019.

4.2- Valuation

4.2.1- DCF-FCFF Valuation

Having detailed the fundamental assumptions and forecasts, we have now available all the data required to proceed with the valuation, more specifically, compute the company's Enterprise and Equity Value to finally arrive at the fair value of Navigator's share as of 31 December 2019.

We remind that the DCF-FCFF valuation was carried with an explicit forecasting period of four years until 2023, after which it was assumed a perpetual life span for the company with the cash flows growing perpetually at a constant stable growth rate – reflected in the terminal value.

4.2.1.1- Terminal Value

The terminal value was estimated according to the equation (9), which introduces two new inputs: the cash flow at the end of the first year of the perpetuity and the perpetuity growth rate.

Concerning the perpetuity growth rate, it was assumed a growth of 0.70%. The UWF paper market is already highly matured and is now deteriorating progressively. Total revenues are estimated to decline (CAGR₂₀₁₉₋₂₃: -1.00%), despite the resilience shown by Navigator that stands out from its competitors for its efficiency and the high-quality products offered. However, it is unequivocal that the company is making efforts to follow a diversification strategy and explore opportunities in markets with greater prospects (e.g. tissue), but it will take time until tangible results, capable of outbalancing the UWF paper market decline, are achieved. The forecasted perpetuity growth rate of 0.7% corresponds to about half of the average that includes the historical (2015-19) inflation change and the IMF's projected inflation for Europe in the 2020-2024 period.

In relation with the first cash flow of the perpetuity, it was estimated based on the equation (10) with an assumed reinvestment rate of 7% which reflects a ROIC of 10% beyond the explicit forecast period (close to the implicit ROIC in 2020-23) – see Annex H.

4.2.1.2- Navigator's fair value

An Enterprise Value of €2,961.7M was reached by adding all the discounted free cash flows and the discounted terminal value – see Annex I.

To arrive at the company's Equity Value, it was necessary to make some adjustments, namely:

- Add the value of non-operating assets, which include “Investment properties”, “Financial assets”, “Cash & cash equivalents” and “Deferred tax assets”. It was assumed that the book value of these items matched its market value;
- Subtract the value of non-equity claims, which include “Interest-bearing debt”, “Provisions”, “Non-controlling interests”, “Pensions and post-employment benefits” and “Deferred tax liabilities”.

Taking this into consideration, it was obtained an Equity Value of €2,109.0M, that divided by the total number of outstanding shares yielded a target price of €2.94 per share, as of 31 December 2019 (downside of -18.1% compared to its actual close price of €3.59).

4.2.1.3- Sensitivity Analysis

For the credibility of this exercise, we conducted a sensitivity analysis to reflect possible deviations in the key drivers of the valuation. Therefore, we measured the impact on Navigator’s share target price of changes in the discount rate of the free cash flows (WACC) and in the perpetual growth rate.

The incremental and decremental changes in each of the variables were considered to be of just 0.25%, based on the rationale that both Navigator and the industry are stable and in a mature stage, hence no substantial swings are expected in the horizon.

		Perpetual growth rate					Perpetual growth rate						
		0.20%	0.45%	0.70%	0.95%	1.20%	0.20%	0.45%	0.70%	0.95%	1.20%		
	7.03%	2.54 €	2.58 €	2.62 €	2.66 €	2.71 €	-13.7%	-12.4%	-10.9%	-9.4%	-7.7%	7.03%	
	6.78%	2.68 €	2.72 €	2.77 €	2.83 €	2.88 €	-8.9%	-7.4%	-5.7%	-3.9%	-1.9%	6.78%	
WACC	6.53%	2.83 €	2.88 €	2.94 €	3.00 €	3.07 €	-3.8%	-2.0%	0.0%	2.1%	4.4%	6.53%	WACC
	6.28%	2.99 €	3.05 €	3.12 €	3.19 €	3.27 €	1.8%	3.9%	6.2%	8.7%	11.3%	6.28%	
	6.03%	3.17 €	3.24 €	3.32 €	3.41 €	3.50 €	7.9%	10.3%	13.0%	15.9%	19.0%	6.03%	

Table 12. Sensitivity analysis (target price in €). Own estimates.

Table 13. Sensitivity analysis (target price changes in %). Own estimates.

In view of the scenarios presented, the company’s share target price fluctuates from €2.54 (-13.7%) to 3.50€ (+19.0%). In all the scenarios, Navigator’s target price remains below the actual close price of €3.59 per share as of 31 December 2019. It is also possible to conclude that the share price is more sensitive to changes in the discount rate than in the perpetual growth rate.

4.2.2- Relative Valuation

To complement the results of the DCF valuation and to deliver an overall more reliable valuation exercise, it was also performed a relative valuation analysis.

The set of benchmark peers include only European companies operating in the Pulp & Paper industry with a market capitalization greater than €500M. It is the same set of companies that was previously used in the estimation of Navigator's levered beta and target capital structure.

The multiples used comprehend the P/E and EV/EBITDA ratios. The table below summarizes the results obtained (more detailed in Annex J and Annex K):

Company	Country	Mkt Cap (€M)	P/E 2019	EV/EBITDA 2019
THE NAVIGATOR COMPANY	Portugal	2,574	15.20	8.97
UPM-KYMMENE	Finland	16,485	15.53	8.91
STORA ENSO	Finland	10,328	11.58	8.33
MONDI	UK	10,165	12.49	7.70
HOLMEN AB	Sweden	4,437	5.42	4.14
AHLSTROM-MUNKSJO	Sweden	1,651	53.04	10.12
ALTRI	Portugal	1,165	11.59	7.57
ENCE ENERGIA Y CELULOSA	Spain	904	91.75	12.42
Average (exc. Navigator)		6,448	28.77	8.46
Median (exc. Navigator)		4,437	12.49	8.33
Navigator's Implied Share Price			2.93 €	3.24 €
Upside/(Downside)			-18.4%	-9.7%

Table 14. Relative Valuation summary. Own estimates.

Multiplying the peer's median P/E ratio by Navigator's Net Income of 2019 yielded an implied Equity Value of €2,102.2M, which divided by the number of outstanding shares resulted in an implied share price of €2.93. This value represents a downside of -18.4% relatively to the actual share close price of €3.59 from the end of 2019.

With regard to the EV/EBITDA ratios, taking the peer's median value and multiplying by Navigator's EBITDA of 2019 yielded an Enterprise Value of €3,098.1M. After making the necessary adjustments to arrive at the company's Equity Value, it is achieved an implied share price of €3.24, which represents a downside of -9.7% compared to Navigator's share close price of €3.59 as of 31 December 2019.

4.3- Valuation Results Summary

The disparity in the results obtained from the different valuation methodologies were not significant. In fact, the target prices for Navigator's share derived from the DCF valuation and the P/E multiple valuation were extremely close. Only the EV/EBITDA valuation yielded a price slightly higher.

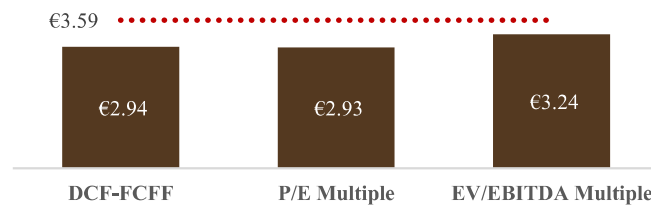


Figure 16. Summary of the valuation results. *Own estimates.*

Nevertheless, all the estimated target prices are below the actual share close price of €3.59 at the end of 2019, which means that Navigator's share was overvalued at the time – the market viewed the company with better growth prospects than the projected in this valuation and/or Navigator's perceived risk, mainly reflected on the equity required rate return, was understood to be lower.

Conclusion

The goal of this report was to present a trustworthy valuation to The Navigator Company, estimating the fair price of its share as of 31 December 2019 and compare it with the actual share close price.

In this process, two methodologies were selected. First and mainly, the DCF valuation, using the FCFF approach, in which the forecasted future cash flows were discounted at a rate that reflected the risk faced by both equity and debt holders (WACC). And secondly, the relative valuation, which is focused on finding the implied value of Navigator through a comparison with a set of comparable listed firms, in terms of characteristics and industry.

Previously to the application of the aforementioned methodologies, the report begins by covering the main literature on the equity valuation subject, from which was possible to conclude that even though some models are more commonly used than others, there is no perfect model to value a company. Rather, it depends on the features of the company, on the information available and on the assumptions made regarding the business, the industry and the macroeconomic environment – topics that are also presented in this report.

The report findings are coherent. All the results obtained point towards an overpricing of Navigator's share as of the end of 2019. The DCF-FCFF valuation yielded a share target price of €2.94, a downside of -18.1% relatively to the share close price of €3.59. Not even in the most positive scenarios presented in the supplementary sensitivity analysis, the target price reaches the €3.59 close price. As for the relative valuation, the P/E ratio derived price is of €2.93 (-18.4%), while EV/EBITDA yielded a slightly higher price of €3.24 (-9.7%).

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Annexes

Annex A – Consolidated Income Statement

(in million €)	2015	2016	2017	2018	2019	2020F	2021F	2022F	2022F
Revenue	1,628.0	1,577.4	1,636.8	1,691.6	1,687.9	1,658.9	1,636.7	1,619.8	1,605.9
Cost of goods sold and materials consumed	-688.7	-661.7	-652.2	-700.2	-716.1	-689.8	-680.6	-673.6	-667.8
Gross Profit	939.3	915.7	984.6	991.4	971.7	969.1	956.1	946.2	938.1
Other operating income	26.2	41.5	30.0	46.9	39.1	37.0	36.5	36.2	35.9
Changes in the fair value of biological assets	3.0	8.6	3.8	-9.8	12.2	3.7	3.6	3.6	3.5
Variation in production	19.2	-2.8	-25.3	44.7	1.9	7.4	7.3	7.2	7.1
External services and supplies	-421.5	-404.5	-407.7	-414.9	-466.9	-421.9	-409.2	-404.9	-401.5
Personnel costs	-154.8	-144.5	-156.0	-161.6	-145.7	-153.9	-151.8	-150.3	-149.0
Other operating expenses	-21.5	-16.6	-25.5	-41.4	-40.3	-29.1	-28.7	-28.4	-28.2
EBITDA	390.0	397.4	403.8	455.2	372.1	412.3	413.8	409.5	406.0
Net changes in provisions	14.6	-0.4	-4.1	-13.5	0.0	0.0	0.0	0.0	0.0
Depreciation, amortisation and impairment losses in non-financial assets	-121.7	-166.7	-144.7	-138.5	-138.5	-157.2	-161.4	-165.5	-169.7
EBIT (Operating Results)	282.9	230.4	255.0	303.2	233.6	255.1	252.4	244.0	236.3
Other earnings and financial income	5.5	6.5	9.8	2.0	3.0	5.4	5.4	5.3	5.3
Other expenses and financial losses	-55.8	-27.3	-17.5	-24.4	-21.9	-29.7	-29.3	-29.1	-28.1
EBT (Profit before income tax)	232.6	209.6	247.4	280.7	214.7	230.8	228.5	220.2	213.5
Income tax	-35.8	7.3	-39.6	-55.5	-46.4	-49.6	-49.1	-47.3	-45.9
Net profit for the period	196.8	216.8	207.8	225.1	168.3	181.2	179.4	172.8	167.6
Attributable to Navigator's equity holders	196.4	217.5	207.8	225.1	168.3	181.2	179.4	172.8	167.6
Attributable to non-controlling interests	-0.4	-0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Annex B – Consolidated Statement of Financial Position

(in million €)	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F
ASSETS									
Non-current Assets									
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	4.5	4.5	4.5	4.5	4.5
Property, plant and equipment	1,320.8	1,295.0	1,171.1	1,239.0	1,249.7	1,220.0	1,185.3	1,146.0	1,102.0
Right of use assets	0.0	0.0	0.0	0.0	45.5	40.0	34.4	28.8	23.3
Biological assets	117.0	125.6	129.4	119.6	131.8	131.8	131.8	131.8	131.8
Investment Properties	0.4	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other financial assets	0.2	0.3	86.7	63.2	58.8	54.7	50.8	47.3	44.0
Deferred tax assets	50.9	44.2	44.7	71.0	31.6	31.6	31.6	31.6	31.6
Total Non-current Assets	1,871.7	1,847.2	1,813.2	1,873.1	1,899.3	1,859.9	1,815.9	1,767.4	1,714.6
Current Assets									
Inventories	212.6	208.9	187.8	222.4	217.9	200.0	212.3	195.7	208.8
Accounts receivable	182.1	181.9	175.7	226.0	156.6	186.1	183.6	181.7	180.1
Other financial assets	11.8	27.3	33.1	51.7	7.0	7.0	7.0	7.0	7.0
Other current assets	21.4	6.6	28.9	30.0	44.0	26.1	25.8	25.5	25.3
State and other public entities	57.6	59.4	62.4	63.2	39.9	57.1	56.3	55.8	55.3
Income tax	0.0	10.2	12.7	16.5	25.1	25.1	25.1	25.1	25.1
Cash and cash equivalents	72.7	67.5	125.3	80.9	161.9	67.5	96.1	163.9	181.9
Total Current Assets	558.2	561.9	625.9	690.7	652.3	568.9	606.2	654.7	683.5
Total Assets	2,429.9	2,409.1	2,439.1	2,563.9	2,551.6	2,428.9	2,422.1	2,422.1	2,398.1
EQUITY AND LIABILITIES									
EQUITY									
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	-20.2	-20.2	-20.2	-20.2	-20.2
Currency translation reserve	5.7	-0.8	-14.0	-20.6	-18.7	-18.7	-18.7	-18.7	-18.7
Fair value reserves	-1.9	-7.6	-3.0	-5.6	-6.4	-6.4	-6.4	-6.4	-6.4
Legal reserves	91.8	99.7	109.8	100.0	100.0	100.0	100.0	100.0	100.0
Other reserves	0.0	0.0	217.5	197.3	98.2	98.2	98.2	98.2	98.2
Retained earnings	273.1	205.6	167.4	192.5	206.0	202.1	213.0	228.1	241.8
Dividends paid in advance	-30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net profit for the period	196.4	217.5	207.8	225.1	168.3	181.2	179.4	172.8	167.6
Equity attributable to Navigator's equity holders	1,205.6	1,231.0	1,184.5	1,186.4	1,027.1	1,036.2	1,045.2	1,053.8	1,062.2
Non-controlling interests	8.6	2.3	0.4	0.2	0.3	0.3	0.3	0.3	0.3
Total Equity	1,214.3	1,233.3	1,184.9	1,186.6	1,027.4	1,036.5	1,045.4	1,054.1	1,062.5
LIABILITIES									
Non-current liabilities									
Interest-bearing liabilities	686.6	638.6	667.9	652.0	906.4	676.2	840.1	591.4	761.7
Pensions and other post-employment benefits	0.0	6.5	5.1	7.3	6.6	6.6	6.6	6.6	6.6
Deferred tax liabilities	88.3	59.9	83.0	66.1	80.4	80.4	80.4	80.4	80.4
Provisions	59.2	31.0	19.5	43.1	19.9	19.9	19.9	19.9	19.9
Non-current payables	38.5	33.3	25.5	82.3	30.8	30.8	30.8	30.8	30.8
Total Non-current Liabilities	872.6	769.2	801.0	850.9	1,044.2	813.9	977.9	729.2	899.5
Current Liabilities									
Interest-bearing liabilities	40.6	69.7	150.2	111.8	17.6	230.2	54.7	298.0	97.9
Accounts payable	147.3	162.7	161.8	191.6	200.9	174.1	171.8	170.0	168.5
Other payables and liabilities	77.8	93.1	97.7	132.2	205.4	102.1	100.7	99.7	98.8
State and other public entities	38.2	37.5	35.0	46.6	19.9	35.8	35.3	35.0	34.7
Income tax	39.1	43.6	8.6	44.2	36.2	36.2	36.2	36.2	36.2
Total Current Liabilities	343.0	406.6	453.3	526.4	480.0	578.4	398.8	638.8	436.1
Total Liabilities	1,215.6	1,175.9	1,254.3	1,377.2	1,524.2	1,392.4	1,376.7	1,368.0	1,335.6
Total Equity and Liabilities	2,429.9	2,409.1	2,439.1	2,563.9	2,551.6	2,428.9	2,422.1	2,422.1	2,398.1

Annex C.1 – Consolidated Cash Flow Statement (2015-19)

(in million €)	2015	2016	2017	2018	2019
OPERATING ACTIVITIES					
Receipts from customers	1,718.3	1,664.5	1,710.6	1,729.7	1,742.2
Payments to suppliers	-1,292.8	-1,286.6	-1,269.5	-1,261.6	-1,167.5
Payments to employees	-128.0	-114.2	-121.8	-125.0	-130.4
Cash flow from operations	297.5	263.7	319.3	343.1	444.3
Income tax received/(paid)	-28.4	-18.8	-67.3	-27.8	-32.1
Other (payments)/receipts relating to operating activities	35.8	36.6	53.9	44.9	-32.6
Cash flows from operating activities (1)	304.9	281.6	305.9	360.2	379.7
INVESTMENT ACTIVITIES					
Inflows:					
Property, plant and equipment	0.0	0.0	0.0	0.0	1.5
Intangible assets	0.0	0.0	0.0	0.0	0.1
Interest and similar income	1.2	4.9	2.1	0.0	4.0
Financial investments	14.1	4.4	0.0	0.0	0.4
Other non-current assets	0.0	0.0	0.0	74.4	0.0
	15.3	9.3	2.1	74.4	6.0
Outflows:					
Property, plant and equipment	-153.8	-81.2	-98.9	-209.3	-176.6
Intangible assets	0.0	0.0	0.0	0.0	-3.5
Other assets	-40.9	0.0	0.0	0.0	0.0
	-194.8	-81.2	-98.9	-209.3	-180.1
Cash flows from investment activities (2)	-179.5	-71.8	-96.7	-134.9	-174.1
FINANCING ACTIVITIES					
Inflows:					
Loans obtained	300.0	290.0	155.5	100.0	421.4
	300.0	290.0	155.5	100.0	421.4
Outflows:					
Loans obtained	-379.7	-310.3	-44.7	-150.2	-307.8
Interest and similar expense	-41.9	-24.5	-12.2	-18.1	-19.5
Dividends	-440.5	-170.0	-250.0	-200.0	-200.0
Acquisition of own shares	0.0	0.0	0.0	-1.3	-17.9
Other financing activities	0.0	0.0	0.0	0.0	-0.6
	-862.1	-504.8	-306.9	-369.6	-545.8
Cash flows from financing activities (3)	-562.1	-214.8	-151.4	-269.6	-124.5
CHANGES IN CASH AND CASH EQUIVALENTS (1)+(2)+(3)	-436.6	-5.1	57.8	-44.4	81.1
CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE PERIOD	499.6	72.7	67.5	125.3	80.9
CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD	72.7	67.5	125.3	80.9	161.9

Annex C.2 – Consolidated Cash Flow Statement (2020-23)

(in million €)	2020F	2021F	2022F	2023F
EBIT	255.1	252.4	244.0	236.3
+ D&A	157.2	161.4	165.5	169.7
- Income Tax	49.6	49.1	47.3	45.9
- Change in NWC	125.2	12.9	-16.1	13.4
Cash flows from operating activities (1)	237.4	351.8	378.3	346.7
- CAPEX	122.0	121.2	120.6	120.1
+ Financial Income	5.4	5.4	5.3	5.3
- Change in Financial Assets	-4.1	-3.8	-3.6	-3.3
Cash flows from investment activities (2)	-112.4	-112.0	-111.7	-111.5
- Financial Expenses	29.7	29.3	29.1	28.1
- Dividends	172.2	170.4	164.2	159.2
+ Change in Debt	-17.6	-11.5	-5.5	-29.8
Cash flows from financing activities (3)	-219.4	-211.2	-198.8	-217.1
CHANGES IN CASH AND CASH EQUIVALENTS (1)+(2)+(3)	-94.4	28.6	67.8	18.0
CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE PERIOD	161.9	67.5	96.1	163.9
CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD	67.5	96.1	163.9	181.9

Annex D – Depreciations & Amortizations**Property, Plant & Equipment**

(in million €)	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F
Gross value	4,123.2	4,215.4	4,236.1	4,138.2	4,284.3	4,406.3	4,527.5	4,648.1	4,768.2
CAPEX						122.0	121.2	120.6	120.1
Annual Depreciation	-127.8	-127.2	-144.6	-144.1	-146.9	-151.6	-155.8	-160.0	-164.1
Accumulated Depreciations	-2,802.0	-2,920.4	-3,064.9	-2,899.2	-3,034.7	-3,186.3	-3,342.2	-3,502.1	-3,666.2
Net book value	1,321.2	1,295.0	1,171.1	1,239.0	1,249.7	1,220.0	1,185.3	1,146.0	1,102.0
Rate	-3.10%	-3.02%	-3.41%	-3.48%	-3.43%	-3.44%	-3.44%	-3.44%	-3.44%

Intangible Assets

(in million €)	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F
Gross value	4.958	4.304	3.882	2.888	4.509	4.509	4.509	4.509	4.509
Annual Amortization	-0.145	0.025	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
Accumulated Amortizations	-0.027	-0.003	-0.004	-0.002	-0.002	-0.003	-0.004	-0.004	-0.005
Net book value	4.932	4.301	3.878	2.886	4.507	4.506	4.505	4.504	4.504
Amortization Rate	-2.92%	0.58%	-0.01%	-0.03%	-0.01%	-0.02%	-0.02%	-0.02%	-0.02%

Right Use of Assets

(in million €)	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F
Gross value					51.1	51.1	51.1	51.1	51.1
Annual Amortization					-5.6	-5.6	-5.6	-5.6	-5.6
Accumulated Amortizations					-5.5	-11.1	-16.7	-22.2	-27.8
Net book value					45.5	40.0	34.4	28.8	23.3
Amortization Rate					-10.9%	-10.9%	-10.9%	-10.9%	-10.9%

Annex E – Working Capital

(in million €)	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	
Current Assets										
Inventories		212.6	208.9	187.8	222.4	217.9	200.0	212.3	195.7	208.8
Accounts receivable		182.1	181.9	175.7	226.0	156.6	186.1	183.6	181.7	180.1
Other current assets		21.4	6.6	28.9	30.0	44.0	26.1	25.8	25.5	25.3
State and other public entities		57.6	59.4	62.4	63.2	39.9	57.1	56.3	55.8	55.3
Total	473.8	456.8	454.7	541.6	458.3	469.3	478.0	458.7	469.5	
Current Liabilities										
Accounts payable		147.3	162.7	161.8	191.6	200.9	174.1	171.8	170.0	168.5
Other payables and liabilities		77.8	93.1	97.7	132.2	205.4	102.1	100.7	99.7	98.8
State and other public entities		38.2	37.5	35.0	46.6	19.9	35.8	35.3	35.0	34.7
Total	263.3	293.3	294.5	370.4	426.2	312.0	307.8	304.6	302.0	
Net Working Capital	210.5	163.5	160.2	171.2	32.1	157.3	170.2	154.1	167.5	
Changes in NWC		-47.0	-3.3	11.0	-139.2	125.2	12.9	-16.1	13.4	
Assumptions										
Days Inventory Outstanding (days)		106	116	111	107	112	111	111	111	111
Days Sales Outstanding (days)		41	42	39	49	34	41	41	41	41
Other current assets (% revenues)		1.3%	0.4%	1.8%	1.8%	2.6%	1.6%	1.6%	1.6%	1.6%
State and other public entities - assets (% revenues)		3.5%	3.8%	3.8%	3.7%	2.4%	3.4%	3.4%	3.4%	3.4%
Days Payable Outstanding (days)		78	90	91	100	102	92	92	92	92
Other payables and liabilities (% revenues)		4.8%	5.9%	6.0%	7.8%	6.3%	6.2%	6.2%	6.2%	6.2%
State and other public entities - liabilities (% revenues)		2.3%	2.4%	2.1%	2.8%	1.2%	2.2%	2.2%	2.2%	2.2%

Annex F – CAPEX

(in million €)	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F
Expansion and others	131.0	120.0	84.0	132.0	40.0	63.9	63.9	63.9	63.9
Regulatory						30.0	30.0	30.0	30.0
Mozambique project						10.0	10.0	10.0	10.0
Carbon Neutrality						8.9	8.9	8.9	8.9
Core business improvement						15.0	15.0	15.0	15.0
Maintenance and recurrence	21.0	18.0	31.0	84.0	118.0	58.1	57.3	56.7	56.2
% of revenues	1.3%	1.1%	1.9%	5.0%	7.0%	3.5%	3.5%	3.5%	3.5%
Total	152.0	138.0	115.0	216.0	158.0	122.0	121.2	120.6	120.1

Annex G – Debt Map

(in million €)	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F
Current interest-bearing liabilities	40.6	69.7	150.2	111.8	17.6	230.2	54.7	298.0	97.9
Old non-current interest-bearing liabilities						676.2	621.4	542.2	493.6
New non-current interest-bearing liabilities							218.7	49.3	268.2
Total non-current interest-bearing liabilities	686.6	638.6	667.9	652.0	906.4	676.2	840.1	591.4	761.7
Total interest-bearing liabilities	727.1	708.3	818.1	763.8	924.0	906.4	894.9	889.4	859.6
Debt payments						-17.6	-230.2	-54.7	-298.0
Net interest-bearing liabilities	727.1	708.3	818.1	763.8	924.0	888.8	664.7	834.7	561.6

Annex H – Terminal Growth

(in million €)	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Avg Net Debt	647.6	666.7	687.8	722.5		800.5	818.9	762.2	701.6	
Avg Equity to Shareholders	1,218.3	1,207.7	1,185.4	1,106.8		1,031.7	1,040.7	1,049.5	1,058.0	
ROIC	12.8%	11.4%	13.0%	10.0%		10.9%	10.7%	10.6%	10.5%	10.0%
Estimated perpetuity growth rate										0.7%
Reinvestment rate										7.0%
Inflation %change EU	0.1%	0.2%	1.7%	1.9%	1.5%	1.7%	1.8%	1.9%	1.9%	2.0%
Average inflation change										1.5%
Estimated perpetuity growth rate										0.7%

Annex I – DCF Valuation

(in million €)	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
EBIT	282.9	230.4	255.0	303.2	233.6	255.1	252.4	244.0	236.3	
Tax rate (%)	15.4%	-3.5%	16.0%	19.8%	21.6%	21.5%	21.5%	21.5%	21.5%	
NOPLAT	239.3	238.3	214.2	243.2	183.1	200.2	198.1	191.5	185.5	186.8
+ D&A	121.7	166.7	144.7	138.5	138.5	157.2	161.4	165.5	169.7	
- Changes in NWC		-47.0	-3.3	11.0	-139.2	125.2	12.9	-16.1	13.4	
- CAPEX		152.0	138.0	115.0	216.0	158.0	122.0	121.2	120.6	
FCFF	300.0	224.2	255.7	244.8	244.8	74.2	224.7	252.0	221.2	173.7
WACC						6.53%	6.53%	6.53%	6.53%	
Discounted FCFF						69.6	198.0	208.5	171.7	
Terminal Value									2,980.2	
Discounted Terminal Value									2,313.9	
Enterprise Value					2,961.7					
+ Non-operating assets					160.9					
- Non-equity claims					1,013.6					
Equity Value					2,109.0					
Number of shares outstanding					717.5					
Target Price					2.94 €					
Actual price as of 31 December 2019					3.59 €					
Upside/(Downside)					-18.1%					

Annex J – Relative Valuation: P/E Multiple

Company	Country	Mkt Cap (€M)	P/E 2019
THE NAVIGATOR COMPANY	Portugal	2,574.4	15.20
UPM-KYMMENE	Finland	16,485.0	15.53
STORA ENSO	Finland	10,328.0	11.58
MONDI	UK	10,165.0	12.49
HOLMEN AB	Sweden	4,437.0	5.42
AHLSTROM-MUNKSJO	Sweden	1,650.9	53.04
ALTRI	Portugal	1,165.0	11.59
ENCE ENERGIA Y CELULOSA	Spain	903.8	91.75
Average (exc. Navigator)		6,447.8	28.77
Median (exc. Navigator)		4,437.0	12.49
Navigator's Net Income			168.3
Navigator's Implied Equity Value			2,102.2
Number of shares outstanding (in million)			717.5
Navigator's Implied Share Price			2.93 €
Actual Share Close Price as of 31/12/2019			3.59 €
Upside/(Downside)			-18.4%

Annex K – Relative Valuation: EV/EBITDA Multiple

Company	Country	Mkt Cap (€M)	EV/EBITDA 2019
THE NAVIGATOR COMPANY	Portugal	2,574.4	8.97
UPM-KYMMENE	Finland	16,485.0	8.91
STORA ENSO	Finland	10,328.0	8.33
MONDI	UK	10,165.0	7.70
HOLMEN AB	Sweden	4,437.0	4.14
AHLSTROM-MUNKSJO	Sweden	1,650.9	10.12
ALTRI	Portugal	1,165.0	7.57
ENCE ENERGIA Y CELULOSA	Spain	903.8	12.42
Average (exc. Navigator)		6,447.8	8.46
Median (exc. Navigator)		4,437.0	8.33
Navigator's EBITDA			372.1
Navigator's Implied Enterprise Value			3,098.1
+ Non-operating assets			259.4
- Non-equity claims			1,031.2
Navigator's Equity Value			2,326.3
Number of shares outstanding			717.5
Navigator's Implied Share Price			3.24 €
Actual Share Close Price as of 31/12/2019			3.59 €
Upside/(Downside)			-9.7%